

# Fisheries Economics of the United States 2014

## Economics and Sociocultural Status and Trends Series

**U.S. Department of Commerce**  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
NOAA Technical Memorandum NMFS-F/SPO-163  
May 2016







**Front cover:** Fishing along the Oregon Coast (photo credit: Leif Anderson)

**Inside cover:** Fishing boats (photo credit: Bill Zahner/NOAA)

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# Fisheries Economics of the United States 2014

Economics and Social Analysis Division  
Office of Science and Technology  
National Marine Fisheries Service  
1315 East-West Highway, 12th floor  
Silver Spring, MD 20910

**NOAA TECHNICAL MEMORANDUM NMFS-F/SPO-163  
MAY 2016**



**U.S. Department of Commerce**

Penny Pritzker, Secretary of Commerce

**National Oceanic and Atmospheric Administration**

Dr. Kathryn D. Sullivan, NOAA Administrator

**National Marine Fisheries Service**

Eileen Sobeck, Assistant Administrator for Fisheries

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## NOAA FISHERIES PUBLICATIONS

Each year NOAA Fisheries produces three annual reports covering different aspects of the status of United States marine fisheries.

**Status of Stocks** is an annual report to Congress on the status of U.S. fisheries and is required by the Magnuson-Stevens Fishery Conservation and Management Act. This report, which is published each spring, summarizes the number of stocks on the overfished, overfishing and rebuilt lists for U.S. federally managed fish stocks and stock complexes. The report also shows trends over time, discusses the value and contributions of our partners, and highlights how management actions taken by NOAA Fisheries have improved the status of U.S. federally managed stocks. For example, the 2014 report shows that the number of stocks listed as subject to overfishing or overfished is at an all-time low. [http://www.nmfs.noaa.gov/sfa/fisheries\\_eco/status\\_of\\_fisheries/](http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/)

**Fisheries of the United States**, published each fall, has been produced in its various forms for more than 100 years. It is the NOAA Fisheries yearbook of fishery statistics for the United States. It provides a snapshot of data, primarily at the national level, on U.S. recreational catch and commercial fisheries landings and value. In addition, data are reported on U.S. aquaculture production, the U.S. fishery processing industry, imports and exports of fishery-related products, and domestic supply and per capita consumption of fishery products. The focus is not on economic analysis, although value of landings, processed products and foreign trade are included. <http://www.st.nmfs.noaa.gov/commercial-fisheries/fus/fus14/index>

**Fisheries Economics of the United States**, published each fall, provides a detailed look at the economic performance of commercial and recreational fisheries and other marine-related sectors on a state, regional and national basis. The economic impact of commercial and recreational fishing activities in the U.S. is also reported in terms of employment, sales and value-added impacts. The report provides management highlights for each region that include a summary of stock status, updates on catch share programs, and other selected management issues. Economic performance indicators for catch share programs are reported and will be extended to include non-catch share fisheries in the next edition. [http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries\\_economics\\_2014/index](http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2014/index)

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Wilmington area, North Carolina  
(photo credit: NOAA Flickr)



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# Preface

## **Fisheries Economics of the United States, 2014**

Fisheries Economics of the United States, 2014, is the ninth volume in this annual series, which is intended to provide the public with easily accessible economic information about the nation's commercial and recreational fishing activities and fishing-related industries. This year's report covers the years 2005 to 2014 and provides descriptive statistics for the following categories: economic impacts of the commercial fishing and seafood industry; commercial fisheries landings, revenue and price trends; saltwater angler expenditures and economic impacts of marine recreational fishing; recreational fishing catch, effort and participation rates; and employer and non-employer establishment, payroll, employees and annual receipt information for fishing-related industries.

The report also provides management highlights for each region that include a summary of stock status, updates on catch share programs, and other selected management issues. Economic performance indicators for catch share programs are reported.

## **Sources of Data**

Information in this report came from many sources. Commercial landings, revenue, and price data, and recreational fishing effort and participation data, were primarily obtained from the Fisheries Statistics Division, Office of Science and Technology, and NOAA Fisheries. Other data sources included the Alaska Fisheries Science Center, NOAA Fisheries; Alaska Department of Fish and Game; California Department of Fish and Game; Oregon Department of Fish and Wildlife; Washington Department of Fish and Wildlife; the Pacific Coast Fisheries Information Network (PacFIN); Texas Parks and Wildlife Department; and Western Pacific Fisheries Information Network (WPacFIN). Economic impacts from the commercial fishing and seafood industry and recreational fishing sectors are from two separate national IMPLAN models of the Economics and Sociocultural Analysis Division, Office of Science and Technology, NOAA Fisheries. Fishing-related industry information was obtained from the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics.

## **Acknowledgments**

Many people participated in the production of this report. Cameron Speir, Gabrielle Ryan and Cara Mayo are the editors of this report series; Rita Curtis, Sabrina Lovell, Gustavo Rubio and Cara Mayo were primary authors and analysts on this edition of Fisheries Economics of the United States. Key collaborators include Jami Larson, Lauren Dolinger Few, Karen Greene, Laura Johansen, Jean Lee, Michael Lewis, Michael Liddel, Alan Lowther, Cindy Thomson, Amy Bowman and Eric Thunberg. The report's design and layout was done by Avi Litwack and Jacqui Fenner.

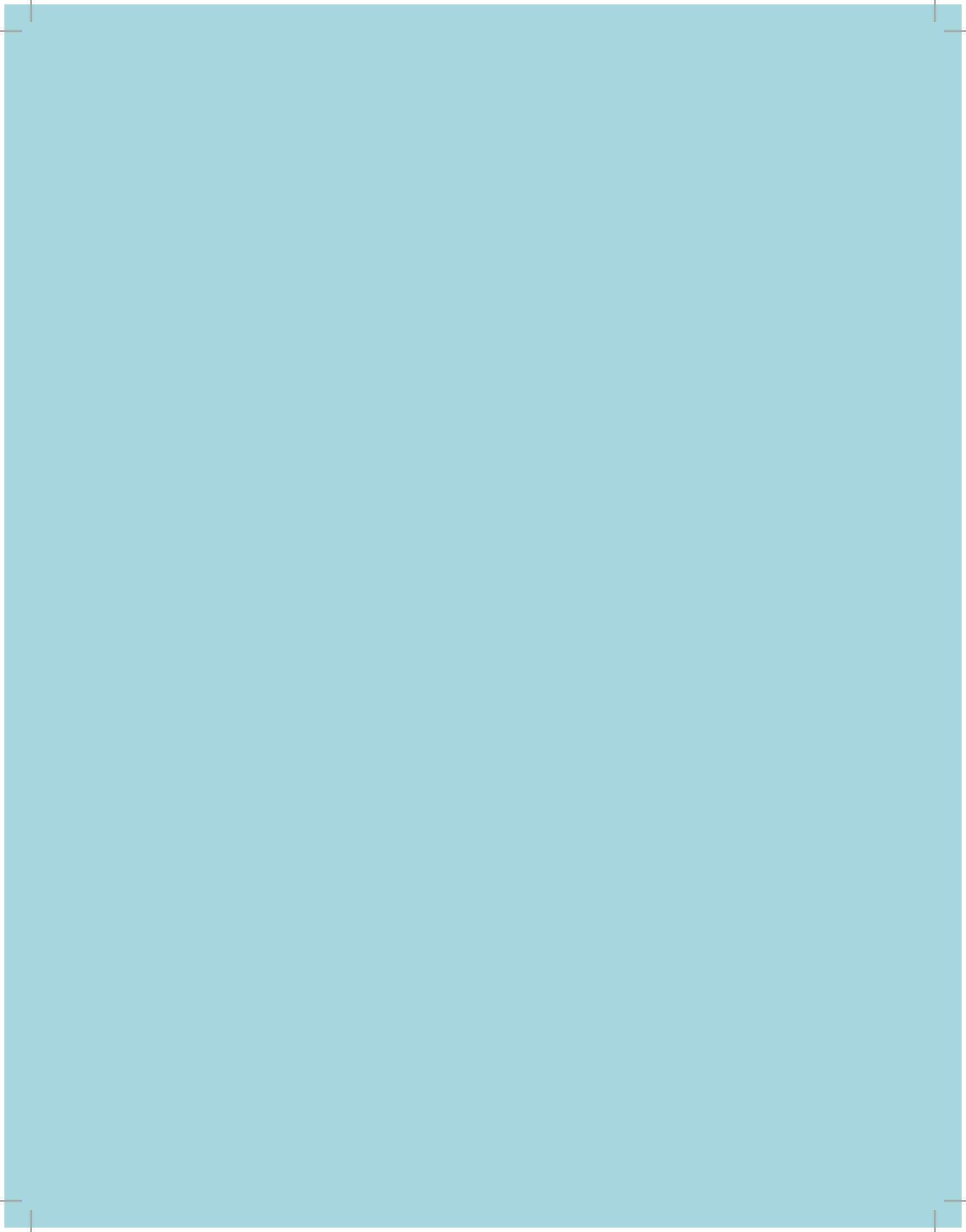
NOAA Fisheries staff in the regional Fisheries Science Centers and Regional Offices provided expertise: Alan Haynie, Justin Hospital, Christopher Liese, Michael Travis and Stephen Holiman. Other colleagues who provided information and expertise included Mark Fisher (Texas Parks and Wildlife Department), Ed Hibschi (Pacific States Marine Fisheries Commission), and William Romberg (Alaska Department of Fish and Game).

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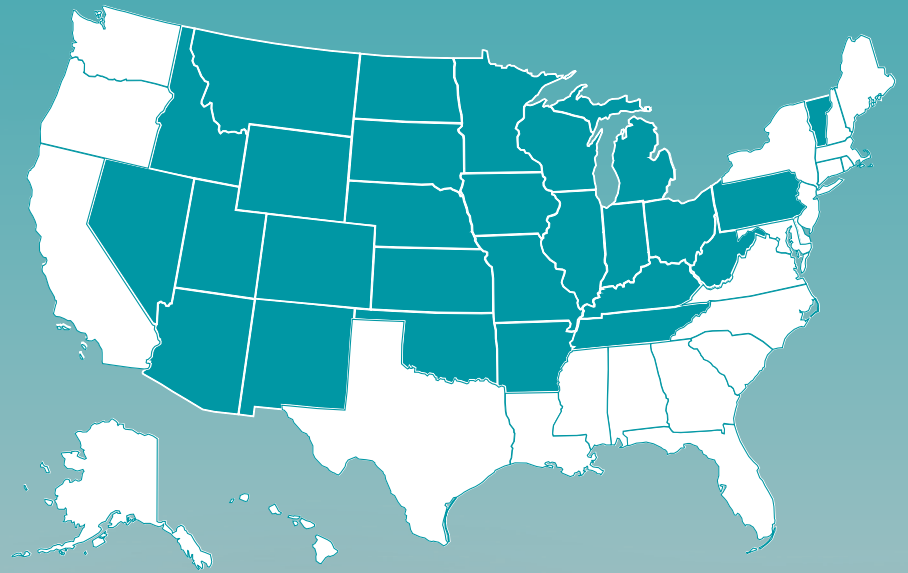
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# National Overview



NOAA Fisheries personnel measure juvenile salmon, San Francisco Bay (photo credit: Jeremy Notch)



## MANAGEMENT CONTEXT

The authority to manage federal fisheries in the United States was granted to the Secretary of Commerce by the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 94-265 as amended by P.L. 109-479). NOAA Fisheries is the federal agency with delegated authority from the Secretary of Commerce to oversee fishing activities in federal waters. Federal fisheries are generally defined as fishing activities that take place in the U.S. Exclusive Economic Zone (EEZ, between 3 and 200 nautical miles from the coastline). Generally, individual states retain management authority over fishing activities within 3 nautical miles of their coasts.

### Regional Fishery Management Councils

- North Pacific
- Pacific
- Western Pacific
- New England
- Mid-Atlantic
- South Atlantic
- Gulf of Mexico
- Caribbean

Nationwide, 46 fishery management plans (FMPs) provide a framework for managing the harvest of 469 fish stocks and stock complexes.<sup>1</sup> These fishery management plans are developed by Regional Fishery Management Councils (FMCs) in eight regions nationwide: North Pacific, Pacific, Western Pacific, New England, Mid-Atlantic, South Atlantic, Gulf of Mexico and Caribbean Regions. After an FMP is developed, it must be approved by the Secretary of Commerce in consultation with NOAA Fisheries before it is implemented.

Enough information exists to determine the overfishing status for 308 of the 469 stocks and stock complexes (66%): 26 are subject to overfishing (8% of stocks with known status). The overfished status of 228 stocks (49%) is known: 37 stocks (16% of stocks with known status) are categorized as overfished.<sup>2</sup>

### Transboundary and International Fisheries

NOAA Fisheries is also actively involved in negotiating

conservation and management measures including total allowable catch levels, fishery allocations, and monitoring and control schemes for internationally shared fisheries resources. Shared fisheries resources include those in areas where the EEZ of the U.S. overlaps with other nations (transboundary areas), and in areas beyond the U.S. EEZ, i.e., international waters or the high seas. The Gulf of Alaska and the Gulf of Maine are examples of these transboundary areas. An area in the Bering Sea outside the EEZs of Canada, Japan, and Russia, called the Donut Hole, is an example of international waters. Loss of sea ice will create new transboundary areas and international waters in the Arctic.

Regional Fishery Management Organizations (RFMOs) are multinational organizations with interests in internationally shared fish stocks and associated fishing activities. Primary objectives of these RFMOs are to research, assess and adopt measures for the conservation and coordinated management of target species, such as bigeye tuna. Some RFMOs also collect data and evaluate and adopt measures for the conservation and scientific assessment of non-target species, also known as bycatch. Non-target species include seabirds, marine mammals, sea turtles and fish species caught incidentally to target species. The commitment to conserving and protecting all species associated with, or affected by, fishing activities is outlined in the Food and Agriculture Organization's (FAO's) Code of Conduct for Responsible Fisheries established in 1995.

Another issue of particular concern for NOAA Fisheries is illegal, unreported and unregulated (IUU) fishing activities. IUU fishing generally refers to fishing that violates national laws or internationally agreed conservation and management measures in effect in oceans around the world. IUU fishing can include fishing without a license or quota for certain species, unauthorized trans-shipments to cargo vessels, failing to report catches or making false reports, keeping undersized fish or fish that are otherwise protected by regulations, fishing in closed areas or during closed seasons, and using prohibited fishing gear.

Experts estimate that global economic losses from IUU fishing range from \$10 billion to \$23.5 billion annually, representing between 11 and 26 million tons of fish.<sup>3</sup>

<sup>1</sup> Fishery management plans and fishery ecosystem plans for each region covered in this report are listed in their respective sections. The four FMPs developed by the Caribbean Fishery Management Council and the Atlantic Highly Migratory Species FMP developed by NOAA Fisheries are not included in this report.

<sup>2</sup> Source: NOAA Fisheries Office of Sustainable Fisheries, Status of Stocks 2014. [http://www.nmfs.noaa.gov/sfa/fisheries\\_eco/status\\_of\\_fisheries/archive/2014/2014\\_status\\_of\\_stocks\\_final\\_web.pdf](http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/archive/2014/2014_status_of_stocks_final_web.pdf).

<sup>3</sup> Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, Beddington JR, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. *PLoS ONE* 4(2): e4570. doi:10.1371/journal.pone.0004570.

NOAA Fisheries is actively collaborating with other federal agencies as part of the National Ocean Council Committee on IUU Fishing and Seafood Fraud. This network of agencies work together to implement measures outlined in an action plan developed by the Presidential Task Force on Combatting IUU Fishing and Seafood Fraud. The plan includes actions that will strengthen enforcement; create and expand partnerships with state and local governments, industry, and non-governmental organizations; and create a risk-based traceability program to track seafood from harvest to entry into U.S. commerce. The plan also highlights ways in which the United States will work with our foreign partners to strengthen international governance, enhance cooperation, and build capacity to combat IUU fishing and seafood fraud.

#### Regional Fishery Management Organizations

NOAA Fisheries participates in eight RFMOs globally. Each RMFO is listed by ocean basin below.<sup>4</sup>

##### Pacific

- Pacific Salmon Commission
- International Pacific Halibut Commission
- Inter-American Tropical Tuna Commission
- Western and Central Pacific Fishery Commission

##### Atlantic

- International Commission for the Conservation of Atlantic Tunas
- North Atlantic Salmon Conservation Organization
- Northwest Atlantic Fisheries Organization

##### Antarctic

- Commission for the Conservation of Antarctic Marine Living Resources

#### Saltwater Recreational Fisheries Policy

In February 2015, NOAA Fisheries established a formal National Saltwater Recreational Fisheries Policy to broadly guide future actions and better integrate recreational fishing with NOAA Fisheries' mission. The Policy focuses on six guiding principles: 1) support ecosystem conservation and enhancement; 2) promote public access to quality recreational fishing opportunities; 3) coordinate with state and federal management entities; 4) advance innovative solutions to evolving science, management and environmental challenges; 5) provide scientifically sound and trusted social, cultural, economic and ecological information; and 6) communicate and engage with the recreational fishing public.

#### Threatened and Endangered Species

NOAA Fisheries is also the lead agency for the conservation and protection of marine and anadromous species that fall within the purview of the Endangered Species Act (ESA). In 2014, NOAA Fisheries listed 20 coral species as threatened under the ESA, which brought the number of marine and anadromous species under NOAA Fisheries jurisdiction to 130 (see Table 1).

**Table 1. Endangered and Threatened Species under NOAA Fisheries Jurisdiction<sup>5</sup>**

Species Group	Number of Species
Marine and Anadromous Fish	58
Marine Mammals	27
Sea Turtles	17
Marine Invertebrates	27
Plants	1
Total Threatened and Endangered Marine Species	130

In addition to threatened and endangered marine and anadromous species, NOAA Fisheries also helps identify candidate and proposed species. Candidate species are actively being considered for listing as endangered or threatened under the ESA. These species also include those for which NOAA Fisheries has initiated a status review that it has announced in the Federal Register. Proposed species are candidate species that were found to warrant listing as either threatened or endangered. These species were officially proposed as such in a Federal Register notice after the completion of a status review and consideration of other protective measures. Currently, 15 candidate species and 28 proposed species are under consideration for listing.

NOAA Fisheries is also responsible for protecting marine mammals under the Marine Mammal Protection Act.<sup>6</sup> Enacting this act in 1972, Congress recognized that marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities; marine mammal species or stocks should not be allowed to fall below their optimum sustainable population levels; measures should be taken to replenish marine mammal species or stocks; there is inadequate knowledge of the marine mammal ecology and population dynamics; and marine mammals have proven to be resources of great international significance. NOAA Fisheries engages in activities such as preventing the

<sup>4</sup> Source: [http://www.nmfs.noaa.gov/ia/agreements/regional\\_agreements/intlagree.html](http://www.nmfs.noaa.gov/ia/agreements/regional_agreements/intlagree.html).

<sup>5</sup> See NOAA Fisheries Office of Protected Resources (<http://www.nmfs.noaa.gov/pr/species/esa/>) for current and proposed ESA species listings.

<sup>6</sup> The U.S. Fish and Wildlife Service protects walrus, manatees, otters and polar bears.



harassment, capture, or killing of marine mammals; preparing marine mammal stock assessments; and studying interactions between marine mammals and fisheries.

### Essential Fish Habitats

Sustainable commercial and recreational fisheries depend on healthy habitats. These habitats include rivers, estuaries and the open ocean where marine and anadromous species feed, grow and reproduce. Consideration of these habitat areas is part of an ecosystem-based management approach for managing fisheries in a more sustainable and holistic manner. Since 1996, federal fishery management plans are required to identify and describe essential fish habitat (EFH) for all federally managed species. Habitat areas that are necessary for a fish species’ growth, reproduction and development are considered EFH. To the extent practicable, NOAA Fisheries and the FMCs must minimize adverse effects to EFH caused by fishing.

Though not required, habitat areas of particular concern (HAPC) can be identified to help focus EFH conservation efforts. The HAPC designation alone does not confer additional protection or restrictions to an area, but helps to focus EFH conservation, management and research priorities. HAPC designation is a valuable way to acknowledge areas where detailed information exists on ecological function and habitat vulnerability, indicating a greater need for conservation and management. To date, approximately 100 HAPCs have been designated including specific coral, seamount and spawning areas. A recent effort undertaken by NOAA Fisheries was the creation of a Habitat Assessment Improvement Plan.<sup>7</sup> The goal of this plan is to advance NOAA Fisheries’ ability to identify EFH and HAPCs and provide the information needed to assess impacts to EFH.

### Catch Share Programs

A variety of market-based tools are available to fishery managers, including catch share programs. Catch share programs encompass a range of management strategies that share a common feature: a secure share of fish is dedicated to individual fishermen, cooperatives, fishing communities and other entities for their exclusive use. In 2010, the NOAA catch share policy was released to

encourage well-designed catch share programs to help maintain or rebuild fisheries.<sup>8</sup> The policy also aims to sustain fishermen, communities and vibrant working waterfronts, including the cultural and resource-access traditions that have been part of this country since its founding.

Currently, there are 16 federal catch share programs nationwide. These programs include limited access privilege programs (LAPPs), individual fishing quota programs (IFQs), individual transferable quota programs (ITQs), fishing community development quota programs (CDQs), fishing cooperatives, and fishing sectors.<sup>9</sup> Implementation dates of these programs span three decades, with five programs established in the 1990s and six programs established since 2010 (see Table 2). 10 programs manage a single species or, in some cases, two species but as separate management units; the other six programs manage multiple species. Most of the programs (six) operate in the Alaska Region.

**Table 2. Existing Catch Share Programs in Federal Fisheries**

Region	Program	Year Implemented
Mid-Atlantic	Mid-Atlantic Surfclam & Ocean Quahog ITQ	1990
	Mid-Atlantic Golden Tilefish IFQ	2009
	Northeast Multispecies Sectors	2010
New England	Northeast General Category Atlantic Sea Scallop IFQ	2010
	Western Alaska Community Development Quota	1992
North Pacific	Alaska Halibut and Sablefish IFQ	1995
	American Fisheries Act (AFA) Pollock Cooperatives	1999
	Bering Sea and Aleutian Island (BSAI) Crab Rationalization	2005
	Central Gulf of Alaska (GOA) Rockfish ( <i>pilot implemented in 2007</i> )	2012
	Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80)	2008
	South Atlantic Wreckfish ITQ	1992
Gulf of Mexico	Red Snapper IFQ	2007
	Grouper-Tilefish IFQ	2010
Pacific	Pacific Coast Sablefish Permit Stacking	2001
	Pacific Groundfish Trawl Rationalization Program (Whiting and Non-Whiting trawl)	2011
Atlantic	Highly Migratory Species Individual Bluefin Quota Program	2016

<sup>7</sup> The Habitat Assessment Improvement Plan is available at: [http://www.st.nmfs.noaa.gov/st4/documents/habitatAssesmentImprovement-Plan\\_052110.PDF](http://www.st.nmfs.noaa.gov/st4/documents/habitatAssesmentImprovement-Plan_052110.PDF).

<sup>8</sup> See [http://www.nmfs.noaa.gov/sfa/management/catch\\_shares/about/documents/noaa\\_cs\\_policy.pdf](http://www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/noaa_cs_policy.pdf).

<sup>9</sup> See Section 303A of the Magnuson-Stevens Act for more information on LAPP requirements.

**Table 3. Economic Performance Indicators for U.S. Federal Catch Share Programs (2013 dollars)<sup>10</sup>**

	Management Context		Participation		Economic Benefits			
	ACL Exceeded		Active Vessels		Total Revenue from Catch Share Species		Revenue per Active Vessel	
	Baseline	2013	Baseline	2013	Baseline	2013	Baseline	2013
<b>Gulf of Mexico</b>								
Grouper-Tilefish	Y	N	631	430	22,771,411	25,498,029	36,088	59,298
Red Snapper	Y	N	482	360	13,958,514	21,108,505	28,960	58,635
<b>Mid-Atlantic</b>								
Golden Tilefish	na	N	14	10	4,707,700	5,724,782	336,264	572,478
Ocean Quahog	N	N	67	27	29,406,847	23,879,904	438,908	884,441
Surflam	N	N	137	40	39,625,107	28,776,586	289,234	719,415
<b>New England</b>								
General Category Scallop	na	N	271	138	28,366,002	29,451,902	104,672	213,420
Multispecies Sectors	Y	Y	417	231	86,314,501	57,236,554	206,989	247,777
<b>North Pacific</b>								
Alaska Halibut	Y	N	3,432	937	91,801,359	101,162,242	26,749	107,964
Alaska Sablefish	Y	N	1,139	331	92,118,241	70,897,550	80,876	214,192
AFA Pollock Cooperatives	Y	N	147	100	248,578,994	360,423,055	1,691,014	3,604,231
BSAI Crab Rationalization	Y	N	264	75	174,706,605	190,034,267	661,767	2,533,790
Amendment 80	N	N	22	18	244,617,707	220,396,418	11,118,987	12,244,245
Central GOA Rockfish	Y	Y	42	57	6,535,212	9,827,675	155,600	172,415
<b>Pacific</b>								
Pacific Sablefish	na	N	135	91	6,701,698	5,358,488	49,642	58,884
Whiting Trawl	na	N	36	24	9,635,971	26,537,871	267,666	1,105,745
Non-Whiting Trawl	na	N	115	86	30,345,264	27,329,725	263,872	317,788

NOAA Fisheries recently initiated an effort to track catch share program performance.<sup>11</sup> Findings from the initial report show that existing catch share programs have ended the race to fish (in their respective fisheries) resulting in longer fishing seasons, safer working conditions and improved management performance. The report also shows that existing catch share programs have resulted in reduced fishing capacity to better match stock size, a management objective in the majority of catch share programs evaluated. Economic performance for the vessels remaining in the program improved, as measured by such metrics as revenue per vessel and average price.

Updated information on selected performance indicators is provided in Table 3. Briefly, results show that inflation-adjusted revenue from catch share species increased in nine of the 16 programs and/or sub-components of the programs since their implementation. In addition, the number of active vessels decreased in all but one program (Central GOA Rockfish) while inflation-adjusted revenue per active vessel increased in all programs since their implementation. Further, results show that the annual catch limit (ACL) was exceeded for two stocks in 2013: witch flounder under the New England Multispecies Sectors pro-

gram and Central Gulf of Alaska shorttraker rockfish under the Central Gulf of Alaska Rockfish program.

### Other Market-Based Management Tools

Vessel or permit buyback programs are another market-based tool used by fishery managers. Under these programs, fishing vessels or permits are purchased by the government. Doing so permanently decreases the number of participants in the fishery and eases fishing-related pressure on marine resources. To date, 10 buyback programs have been instituted nationwide. The cost of seven of these buyback programs totaled \$397 million.<sup>12</sup> Eighty-five percent of this total cost was funded by loans from the federal government that will be repaid by the commercial fishing industry.

License limitation programs (LLPs), also known as limited entry programs, are another management tool available to fishery managers. In these programs, the number of fishing vessels allowed to harvest a specific fish stock or stock complex is limited to fishermen or vessels with permission to fish. LLPs have been implemented in almost all federally managed commercial fisheries and in every region except the Caribbean.

<sup>10</sup> The South Atlantic Wreckfish ITQ is not included due to confidentiality restrictions. The Western Alaska CDQ program was excluded because it is the only CDQ and thus fundamentally different from the other programs. In addition, note that some programs did not have a catch quota prior to the catch share program. For these programs, "na" indicates that the question of whether the ACL was exceeded is not applicable.

<sup>11</sup> See <http://www.st.nmfs.noaa.gov/Assets/economics/catch-shares/>.

<sup>12</sup> This total excludes three buyback programs associated with Northwest Pacific salmon disasters in 1994, 1995 and 1998 because data were not available. For current information on fishing capacity reduction, see [http://www.nmfs.noaa.gov/mb/financial\\_services/buyback.htm](http://www.nmfs.noaa.gov/mb/financial_services/buyback.htm).



Ecolabels are market-based tools offered by third-party entities. An ecolabeling program entitles a fishery product to bear a distinctive logo or statement that certifies the fishery resource was harvested in compliance with specified conservation and sustainability standards. It allows the buyer to potentially influence the sustainable harvest of fishery resources through the purchase of such ecolabeled seafood products at a price premium.

The Marine Stewardship Council (MSC) has one of the most recognizable ecolabeling programs in the world. Currently, more than 190 fisheries worldwide meet MSC sustainability standards, 20 of which are U.S. fisheries (see Table 4). Fisheries obtaining MSC certification for the first time in 2014 include the West Coast Groundfish Trawl.

**Table 4. U.S. Fisheries with MSC Certification<sup>13</sup>**

Region	Fishery	Certified
North Pacific	Alaska flatfish - Bering Sea & Aleutian Islands	2010
	Alaska flatfish - Gulf of Alaska	2010
	Alaska Pacific cod - Bering Sea & Aleutian Islands	2010
	Alaska Pacific cod - Gulf of Alaska	2010
	Alaska pollock - Bering Sea & Aleutian Islands	2010
	Alaska pollock - Gulf of Alaska	2010
	American Western Fish Boat Owners Association albacore tuna North Pacific	2010
	U.S. North Pacific halibut	2006
	U.S. North Pacific sablefish	2006
	Alaska salmon	2000
Pacific	American Albacore Fishing Association Pacific albacore tuna - north	2007
	American Albacore Fishing Association Pacific albacore tuna - south	2007
	Oregon pink shrimp	2011
	Pacific hake mid-water trawl	2009
	U.S. West Coast limited entry groundfish trawl	2014
Gulf	Louisiana blue crab	2012
	Maine lobster trap fishery	2013
North-east	U.S. Atlantic spiny dogfish	2012
	U.S. North Atlantic swordfish	2013
	U.S. Atlantic sea scallop	2013

### COMMERCIAL FISHERIES

Commercial fishermen in the U.S. harvested 9.4 billion pounds of finfish and shellfish in 2014, earning \$5.5 billion for their catch. Contributing the most to total U.S. revenue were shrimp (\$702 million), followed by Pacific salmon (\$617 million), American lobster (\$567 million) and sea scallop (\$424 million). The top three species in terms of pounds landed included walleye pollock (3.1 billion pounds), menhaden (1.2 billion) and Pacific salmon (720 million). These species made up more than half of U.S. landings in 2014.

### Key U.S. Commercial Species

- American lobster
- Blue crab
- Menhaden
- Pacific halibut
- Pacific salmon
- Sablefish
- Sea scallop
- Shrimp
- Tunas
- Walleye pollock

When looking at key species or species groups, commercial fishermen in Alaska caught the most salmon (683 million pounds) and earned \$546 million for their catch in 2014. Tuna was caught in large numbers in Hawai'i (20 million pounds) and generated \$74 million in landings revenue. Maine fishermen contributed the most to American lobster landings (124 million pounds) and earned \$460 million for their catch in 2014. In Massachusetts, sea scallopers harvested 21 million pounds landed and earned \$272 million for their catch. More blue crab was caught in Louisiana (40 million pounds) than in any other state, earning over \$61 million. Louisiana also accounted for more than half of the menhaden landed in 2014, with fishermen landing 585 million pounds worth \$63 million in dockside revenue. Sea scallop garnered the highest average ex-vessel price per pound (\$12.55) from among the key species and species group in 2014, with state-specific prices ranging from \$11.34 in New York to \$12.85 in New Hampshire.

### Economic Impacts

In this report, the U.S. seafood industry includes the commercial harvest sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.<sup>14</sup> In 2014, this industry supported 1.4 million full- and part-time jobs and generated \$153 billion in sales, \$42 billion in income and \$64 billion in value-added impacts nationwide (see Table 5).

**Table 5. U.S. Seafood Industry Economic Impacts Trends**

	2011	2012	2013	2014
Jobs	1,233,204	1,270,141	1,350,627	1,394,833
Sales (Billions)	\$129.4	\$140.7	\$142.2	\$153.3
Income (Billions)	\$36.6	\$38.7	\$39.8	\$42.0
Value-Added (Billions)	\$55.3	\$59.0	\$60.3	\$64.1
Total Revenue (Billions)	\$5.3	\$5.1	\$5.6	\$5.5

Seafood retailers generated the largest economic impacts, contributing 678,000 jobs, \$35 billion in sales impacts, \$14 billion in income, and \$19 billion in value-added

<sup>13</sup> For more information about these fisheries and the Marine Stewardship Council certification process, see <https://www.msc.org/>.

<sup>14</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).

impacts to the national economy in 2014. The seafood import sector generated the second largest economic impacts, contributing 227,000 jobs, \$62 billion in sales, \$10 billion in income and \$19 billion in value-added impacts. Seafood dealers and processors contributed 241,000 jobs, \$33 billion in sales, \$10 billion in income, and \$14 billion in value-added impacts to the national economy.

Employment impacts from the U.S. seafood industry were 3 percent higher in 2014 than in 2013. Similarly, industry-wide economic impacts in terms of sales (8%), income (6%), and value added (6%) were also higher. Year-over-year increases in job impacts were concentrated in three sectors: seafood importers (13%), dealers and processors (9%), and wholesalers and distributors (5%).

The greatest employment impacts generated by the seafood industry occurred in California, Massachusetts, Florida, Washington and Alaska (see Table 6). The seafood industry supported the fewest jobs in Delaware.

**Table 6. Jobs Supported by the U.S. Seafood Industry**

State	Jobs	State	Jobs
U.S.	1,394,833	Virginia	17,253
California	143,440	Alabama	15,069
Massachusetts	97,761	Maryland	14,636
Florida	92,858	Georgia	13,998
Washington	63,382	North Carolina	11,451
Alaska	60,749	New Hampshire	11,217
New York	56,735	Rhode Island	10,174
New Jersey	44,433	Hawaii	9,546
Louisiana	44,066	Mississippi	4,714
Maine	41,314	Connecticut	2,763
Texas	33,880	South Carolina	2,035
Oregon	20,051	Delaware	456

The highest sales, income and value-added impacts were generated by the seafood industry in California with \$23 billion in sales followed by Florida and Massachusetts (see Table 7). The importers sector generated the highest level of sales impacts in all three states.

## Landings Revenue

Landings revenue in the U.S. totaled \$5.5 billion in 2014 (Table 8). This was a 38 percent increase in nominal value from 2005 levels (an 18% increase in real terms after adjusting for inflation). Landings revenue in 2014 represented a year-over-year decrease of 1 percent from 2013.

**Table 7. Sales, Income and Value-Added Impacts Generated by the U.S. Seafood Industry, 2014 (\$ thousands)**

State	Sales	Income	Value Added
U.S.	153,341,370	41,955,584	64,070,881
California	23,195,894	5,017,023	8,305,666
Florida	18,317,052	3,434,238	6,135,060
Massachusetts	7,954,047	2,045,415	3,132,490
Washington	7,330,457	2,015,266	3,041,830
New Jersey	6,862,897	1,529,212	2,486,353
New York	6,858,434	1,466,405	2,426,360
Alaska	4,213,515	1,872,175	2,317,288
Texas	2,857,586	826,213	1,238,477
Maine	2,303,292	755,955	1,094,928
Louisiana	2,220,879	816,203	1,115,858
Georgia	1,916,044	426,208	700,572
New Hampshire	1,582,868	359,000	578,673
Maryland	1,461,779	378,307	577,856
Oregon	1,404,355	469,255	665,609
Virginia	1,256,929	396,372	568,765
Rhode Island	1,096,821	273,316	428,503
North Carolina	989,955	278,195	414,144
Hawaii	743,204	230,799	335,792
Alabama	660,627	251,520	333,185
Connecticut	429,184	90,981	151,035
Mississippi	198,608	79,501	102,731
South Carolina	170,997	50,013	73,648
Delaware	72,919	13,996	23,878

**Table 8. Commercial Fisheries Landings Revenue by Region, 2014 (\$ million)**

Region	Landings Revenue	Region	Landings Revenue
U.S.	5,473	Pacific	719
North Pacific	1,712	Mid-Atlantic	471
New England	1,201	South Atlantic	184
Gulf of Mexico	1,028	Western Pacific	101

Finfish landings revenue of \$2.4 billion in 2014 represented a 29 percent increase (10% in real terms) from 2005 and a 9 percent decrease from 2013. U.S. shellfish landings revenue totaled \$3.1 billion in 2014, increasing 46 percent (24% in real terms) from 2005 and 5 percent from 2013.

The five species with highest landings revenue were shrimp, Pacific salmon, American lobster, sea scallop and walleye pollock. The landings revenue of these five species groups totaled \$2.7 billion, or 50 percent of total revenue. The largest increases in total landings revenue among these species from 2005 to 2014 were experienced by Pacific salmon (86% in nominal terms, 58% in real terms); shrimp (70%, 45% in real terms); and menhaden (67%, 42% in real terms). Three of the key



species or species groups showed decreases in revenue over the same 10-year period: Pacific halibut (-35%, -45% in real terms); sablefish (-19%, -31% in real terms); and sea scallop (-2%, -17% in real terms). Compared with 2013 totals, key species or species groups with the largest increases in total revenue were: American lobster (23%), shrimp (18%), and blue crab and sablefish (both up 9%).

Overall, Alaska earned the greatest share of the nation’s landings revenue in 2014 (\$1.7 billion), contributing 31 percent to the U.S. total (see Table 9). More than half of Alaska’s landings revenue came from walleye pollock and salmon. Massachusetts (\$420 million) and Maine (\$497 million) contributed the most to total U.S. shellfish revenue, 14 percent and 16 percent, respectively. Sea scallop accounted for the majority of landings revenue in Massachusetts, while American lobster accounted for the majority of landings revenue in Maine.

**Table 9. Commercial Fisheries Landings Revenue by State, 2014 (\$ million)**

State	Landings Revenue	State	Landings Revenue
Alaska	1,712	North Carolina	94
Maine	549	Maryland	90
Massachusetts	525	Rhode Island	86
Louisiana	451	Alabama	69
Washington	326	New York	54
Texas	278	East Florida	53
California	235	New Hampshire	27
West Florida	203	Mississippi	26
Virginia	168	South Carolina	21
Oregon	158	Georgia	15
New Jersey	152	Connecticut	14
Hawaii	101	Delaware	7

**Landings**

In 2014, U.S. commercial fishermen landed 9.4 billion pounds of finfish and shellfish—a decrease of 3 percent from 2005 and of 4 percent from 2013 (see Table 10). Finfish landings totaled 8.2 billion pounds in 2014, a 5 percent decrease from 2005 and a 4 percent decrease from 2013. Over 60 percent of total catch in 2014 was made up of the 10 U.S. key species and species groups. Walleye pollock and menhaden had the highest landings in 2014, with 3.1 billion pounds and 1.2 billion pounds landed, respectively. These two species accounted for 46 percent of U.S. landings in 2014.

Alaska fishermen harvested the majority (60%) of the nation’s total landings, landing 5.7 billion pounds of finfish and shellfish (see Table 11). Alaska also accounted for the majority of finfish landings, 5.6 billion pounds or 68 percent of the U.S. finfish total. Walleye pollock comprised 55 percent of Alaska’s landings in 2014. More shellfish were landed in California (260 million pounds), Louisiana (171 million pounds) and Maine (132 million pounds) than in any other state. Together they accounted for 45 percent of all shellfish landed in the U.S. in 2014.

**Table 10. Commercial Fisheries Landings by Region, 2014 (millions of pounds)**

Region	Landings	Region	Landings
U.S.	9,410	New England	643
North Pacific	5,671	Mid-Atlantic	591
Gulf of Mexico	1,144	South Atlantic	105
Pacific	841	Western Pacific	33

**Table 11. Commercial Fisheries Landings by State, 2014 (millions of pounds)**

State	Landings	State	Landings
Alaska	5,671	South Carolina	73
Maine	778	Georgia	62
East Florida	388	Mississippi	49
Louisiana	358	Rhode Island	33
Texas	292	New York	26
New Hampshire	274	New Jersey	25
California	260	Oregon	23
North Carolina	191	Hawaii	11
Alabama	191	Washington	10
Massachusetts	124	Florida West Coast	9
Virginia	91	Connecticut	8
Maryland	76	Delaware	4

From 2005 to 2014, landings increased for five of the key species/species groups. The largest increases were for American lobster (69%), tunas (33%) and shrimp (20%). Pacific halibut (-70%), sea scallop (-40%), and Pacific sablefish (-31%) experienced the largest decline in landings during this period. From 2013 to 2014, the largest increase in landings of key species/species groups was experienced by shrimp (8%). The largest decrease was experienced by Pacific salmon (-33%), with the latter trend largely attributable to the biennial cycle of pink salmon, which tends to have weaker runs in even-numbered years. The 2013 pink salmon landings were the highest ever recorded for Alaska.

## Prices

Of the 10 U.S. key species and species groups, sea scallop, Pacific halibut and American lobster received the highest national average ex-vessel prices in 2014 at \$12.55 per pound, \$4.98 per pound and \$3.83 per pound, respectively. Menhaden and walleye pollock had the lowest ex-vessel prices in 2014 at \$0.09 and \$0.13 per pound, respectively. Landings of these species were the largest among the U.S. key species and species groups: 3.1 billion pounds of walleye pollock and 1.2 billion pounds of menhaden were landed in 2014.

### Commercial Fisheries Facts

#### Landings Revenue

- The 10 U.S. key species or species groups accounted for 62 percent of total landings revenue in 2014.
- Finfish and other fishery products (\$2.4 billion) contributed slightly less than shellfish (\$3.1 billion) to total landings revenue in the U.S. in 2014.
- The top two species combined, Pacific salmon and shrimp, accounted for 24 percent of total commercial fishing revenue.

#### Landings

- The 10 U.S. key species and species groups accounted for 61 percent of total landings in 2014.
- Finfish and other fishery products accounted for 87 percent of total U.S. landings in 2014 or 8.2 billion pounds.
- Walleye pollock (33%) contributed the most to total landings, followed by menhaden (12%) and Pacific salmon (8%).

#### Prices

- Of the top 10 key species or species groups, sea scallop (\$12.55), Pacific halibut (\$4.98), and American lobster (\$3.83) had the highest national average ex-vessel price per pound in 2014.
- Walleye pollock (\$0.13) and menhaden (\$0.09) had the lowest ex-vessel price per pound in 2014.

Over the 10-year period from 2005 to 2014, significant price increases were observed for Pacific salmon (132%, 100% in real terms), Pacific halibut (114%, 82% in real terms), and menhaden (80%, 50% in real terms). The ex-vessel prices of blue crab (76%, 49% in real terms) and sea scallop (64%, 40% in real terms) also increased substantially since 2005. Prices for Pacific halibut (27%), American lobster (24%), and sablefish (22%) had the largest year-over-year increases from 2013 to 2014. Only two of the key species/species groups experienced a price decline from 2013 to 2014: tunas fell 12 percent and walleye pollock fell 7 percent.

## RECREATIONAL FISHERIES

In 2014, approximately 11 million recreational saltwater anglers across the U.S. took 68 million saltwater fishing trips around the country. These anglers spent \$4.9 billion on fishing trips and \$28 billion on durable fishing-related equipment. These expenditures contributed \$60.6 billion in sales impacts to the U.S. economy, generated \$35.5 billion in value-added impacts, and supported approximately 439,000 jobs. Of the U.S. key recreational species or species groups, drum (Atlantic croaker and spot, 33.8 million fish), drum (seatrout, 24.5 million fish), and summer flounder (19.5 million fish) were the most of 10 caught by recreational saltwater anglers in 2014.

### Key U.S. Recreational Species

- Atlantic croaker and spot
- Large Atlantic tunas
- Little tunny and Atlantic bonito
- Pacific halibut
- Rockfishes and scorpionfishes
- Salmon
- Seatrout
- Sharks
- Striped bass
- Summer flounder

## Economic Impacts and Expenditures

Economic impacts from recreational fishing activities<sup>15,16</sup> (impacts from fishing trips and durable equipment combined) supported 439,000 full- and part-time jobs across the U.S. in 2014 (see Table 12). Sales impacts from recreational angling trips and durable expenditures totaled \$60.6 billion, and value-added impacts totaled \$35.5 billion.

<sup>15</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>).

<sup>16</sup> Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>) and IMPLAN version 3.1.1001.12.

Durable equipment impacts contributed more than trip impacts to these totals, accounting for 82 percent of employment, sales and value-added impacts. Of the three fishing trip modes, private boat-based fishing trips had the greatest economic impact, accounting for 6 percent of employment, 7 percent of sales and 6 percent of value-added impacts.

**Table 12. Recreational Economic Impacts Trends for the United States (\$ billions)**

	2011	2012	2013	2014
Number of Jobs	363,932	425,321	420,191	438,590
Sales	\$55.80	\$58.80	\$58.10	\$60.60
Income	\$18.20	\$21.40	\$21.10	\$22.00
Value-Added	\$29.10	\$34.40	\$34.00	\$35.50
Total Trips (millions)	71.3	72.0	71.9	68.0

U.S. anglers spent \$4.9 billion on fishing trips and related expenditures in 2014. This total includes private boat fishing (\$2 billion), shore-based fishing trips (\$1.6 billion) and for-hire fishing trips (\$1.3 billion). Expenditures on fishing-related durable equipment totaled \$28 billion in 2014. Anglers spent more on boat expenses (\$16.3 billion) than any other durable goods. Other major expenditures include fishing tackle (\$3.9 billion), vehicle expenses (\$3.7 billion), and second home expenses (\$2.1 billion).

The greatest employment impacts from expenditures on saltwater recreational fishing were generated in West Florida, followed by East Florida and California (see Table 13). New Hampshire had the fewest number of jobs supported by recreational fishing. The highest sales impacts from marine recreational fishing expenditures were generated in West Florida, followed by East Florida and California (see Table 14). The lowest sales impacts were generated in New Hampshire.

**Table 13. Jobs Supported by the U.S. Recreational Fishing Industry**

State	Jobs	State	Jobs
West Florida	70,109	Washington	6,180
East Florida	44,789	Virginia	5,218
California	22,737	Alaska	5,167
New Jersey	19,962	Rhode Island	4,439
Texas	16,496	Mississippi	4,174
North Carolina	16,007	Oregon	3,333
Louisiana	15,241	Connecticut	2,993
Massachusetts	14,264	Georgia	2,145
Alabama	14,124	Delaware	1,562
New York	9,561	Hawai'i	1,061
Maryland	7,721	Maine	1,051
South Carolina	6,224	New Hampshire	563

**Table 14. Sales, Income and Value-Added Impacts Generated by the Recreational Fishing Industry, 2014 (\$ thousands)**

State	Sales	Income	Value Added
West Florida	7,467,774	3,161,122	4,868,743
East Florida	4,782,488	2,022,279	3,122,289
California	2,657,497	1,139,897	1,777,155
New Jersey	2,036,835	956,242	1,456,978
Texas	1,825,290	757,027	1,205,146
Louisiana	1,619,677	662,470	1,029,281
North Carolina	1,529,378	636,034	989,793
Massachusetts	1,391,996	688,503	996,280
Alabama	1,070,579	540,257	827,849
New York	976,928	466,515	718,728
Maryland	726,850	338,785	513,107
Washington	690,425	287,917	477,561
Alaska	588,970	240,294	357,343
South Carolina	545,375	219,815	344,307
Virginia	473,659	212,615	335,482
Rhode Island	421,355	199,243	300,928
Mississippi	374,063	157,772	247,281
Oregon	297,993	143,382	203,335
Connecticut	289,927	137,757	215,821
Georgia	189,737	88,010	135,562
Delaware	142,279	61,959	98,343
Hawai'i	127,440	44,281	70,021
Maine	84,955	35,676	55,515
New Hampshire	52,693	25,375	35,185

## Participation

Nationwide, 10.5 million recreational saltwater anglers fished in their home states in 2014.<sup>17</sup> Approximately 9 million of these anglers were residents of a U.S. coastal county; 1.5 million anglers were residents of a non-coastal county. Between 2005 and 2014, there was a 19 percent decrease in the total number of U.S. anglers fishing in their home states. There was a year-over-year 4 percent decrease in the number of anglers who fished in their home states between 2013 and 2014.

## Fishing Trips

Nationwide, anglers took approximately 68 million saltwater fishing trips around the country (see Table 15).<sup>18</sup> West Florida (15 million trips) and East Florida (10 million trips) had the highest number of recorded trips (see Table 16). The total number of fishing trips taken in the U.S. decreased 19 percent from 2005 to 2014. Compared with 2013, total fishing trips taken in the U.S. decreased 5 percent, and the largest increase occurred in the for-hire mode (8%).

<sup>17</sup> Participation estimates include Puerto Rico but do not include Alaska or Texas. Hawai'i is included for 2004-2006 only.

<sup>18</sup> Trip estimates include Puerto Rico but do not include Alaska or Texas. Hawai'i trip estimates are available only for the shore and private boat mode.



**Table 15. Recreational Fishing Trips by Region, 2014 (millions of fishing trips)**

Region	Trips
U.S. Total	68.0
Gulf of Mexico	21.0
South Atlantic	17.6
Mid-Atlantic	14.3
Pacific	6.7
New England	6.4
Hawai'i	1.4

**Table 16. Recreational Fishing Trips by State, 2014 (thousands of trips)**

State	Trips	State	Trips
West Florida	15,179	Alabama	2,169
East Florida	9,644	Mississippi	1,480
North Carolina	4,954	Hawai'i	1,375
New Jersey	4,869	Connecticut	1,364
California	4,401	Washington	1,300
New York	3,955	Rhode Island	1,099
Massachusetts	3,397	Delaware	868
Maryland	2,473	Georgia	827
South Carolina	2,221	Oregon	731
Louisiana	2,188	Maine	539
Virginia	2,182	New Hampshire	252

### Harvest and Release

Among the 10 key U.S. recreational species or species groups, drum (Atlantic croaker and spot, 33.8 million fish); drum (seatrouts, 24.5 million fish); and summer flounder (19.5 million fish) were the most commonly caught by anglers in 2014.<sup>19</sup> Anglers fishing in the Mid-Atlantic and New England Regions caught most of the Atlantic croaker, summer flounder and striped bass in 2014, while most seatrout were caught in the Gulf of Mexico and South Atlantic Regions.

In the North Pacific Region, salmon and Pacific halibut were the most commonly caught species/species group in 2014 with 920,000 and 659,000 fish caught, respectively. Scads (bigeye and mackerel) were the most frequently caught fish in the Western Pacific at 898,000.

Recreational catch of striped bass decreased 56 percent between 2005 and 2014, the largest change during this 10-year time period. There was also a 47 percent decrease in drum (seatrouts) caught and a 44 percent decrease in salmon caught. The largest increase in fish caught from 2005 and 2014 was among little tunny and Atlantic bonito, which increased 135 percent.

From 2013 to 2014, decreases occurred in the recreational catch of seven key species or species groups, with the largest decrease being drum (seatrouts) (-45%). The largest increase in the number of fish caught occurred among little tunny and Atlantic bonito (51%).

### Recreational Fishing Facts

#### Participation

- An average of 11.8 million anglers fished in the U.S. annually from 2005 to 2014.
- In 2014, coastal county residents made up 86 percent of total anglers. These anglers averaged 87 percent of total anglers annually during the 10-year period.

#### Fishing trips

- In the U.S., an average of 77 million fishing trips were taken annually from 2005 to 2014.
- Private or rental boat and shore-based fishing trips made up 94 percent of total trips taken in 2014. From 2005 to 2014, these fishing modes averaged 95 percent of all fishing trips.

#### Harvest and release

- Seatrout was the most commonly caught key species or species group from 2005 to 2014, averaging 46 million fish caught during the 10-year period. Of these, 45 percent were released rather than harvested.
- Salmon (100% harvested), followed by large Atlantic tuna (89% harvested) and rockfishes and scorpionfishes (76% harvested), were key species or groups that experienced the greatest proportion of harvested catch rather than released catch between 2005 and 2014.

### MARINE ECONOMY

In 2013, 7.5 million establishments operated throughout the entire U.S. economy (including marine and non-marine related establishments).<sup>20</sup> These establishments employed more than 118 million employees and had a total annual payroll of \$5.6 trillion. From 2005 to 2013, the number of establishments remained unchanged, employee numbers increased 2 percent, and total annual payroll increased 25 percent (an 8% increase in real terms) nationwide.<sup>21</sup> The nation's gross domestic product was approximately \$17 trillion in 2013; employee compensation was \$8.8 trillion.

<sup>19</sup> Harvest and release estimates include Puerto Rico but do not include Alaska. For Hawai'i, these estimates are available only for shore and private boat mode.

<sup>20</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

The Commercial Fishing Location Quotient (CFLQ) measures the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>22</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

For this report, the marine economy, a subset of the national economy, consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transport, support and marine operations (employer establishments). These sectors include several different marine-related industries. The following sections present the contribution of these industries to the national marine economy in terms of the number of establishments or firms, employees, and total annual payroll or receipts.

### Seafood Sales and Processing

In 2013, 1,812 non-employer firms were engaged in seafood product preparation and packaging, a 68 percent increase from 2005 levels. From 2005 to 2013, annual receipts increased 64 percent (29% increase in real terms) to \$129 million. More of these firms were located in Florida (300), California (157), and New York (150) than any other state.

From 2005 to 2013, the number of employer establishments in seafood product preparation and packaging decreased 16 percent to 604. These establishments employed approximately 31,390 full- and part-time employees in 2013 and had a total annual payroll of \$1.2 billion. Compared with 2005 levels, this was a 17 percent decrease in workers and a 4 percent increase (a 20% decrease in real terms) in annual payroll. The two states with the greatest number of establishments were Alaska (115 establishments) and Washington (86 establishments). From 2005 to 2013, the number of establishments in the seafood wholesale sector decreased 9 percent to 2,098. Seafood wholesalers employed 20,367 workers and had an annual payroll of \$885 million in 2013. The number of

employees decreased 10 percent and the annual payroll increased 13 percent (a 13% decrease in real terms). Most of these establishments were concentrated in California (320 establishments), New York (264 establishments), and Florida (234 establishments).

In 2013, 2,497 non-employer firms were engaged in retail seafood sales, a 19 percent increase from 2005 levels. Annual receipts increased 1 percent (a 31% increase in real terms) from 2005 levels to \$206 million in 2013. The majority of these firms were located in Florida (338), California (218), and New York (197).

The number of employer establishments engaged in seafood retail activities decreased 7 percent from 2005 levels to 1,995 in 2013. These establishments employed 10,631 full- and part-time employees in 2013 and had a total annual payroll of \$253 million. Compared with 2005 levels, this was a 2 percent increase in workers and a 30 percent increase (remaining unchanged in real terms) in annual payroll. The employer establishments for retail seafood sales were primarily located in New York (399 establishments), Florida (165 establishments), and California (155 establishments).

### Transport, Support and Marine Operations

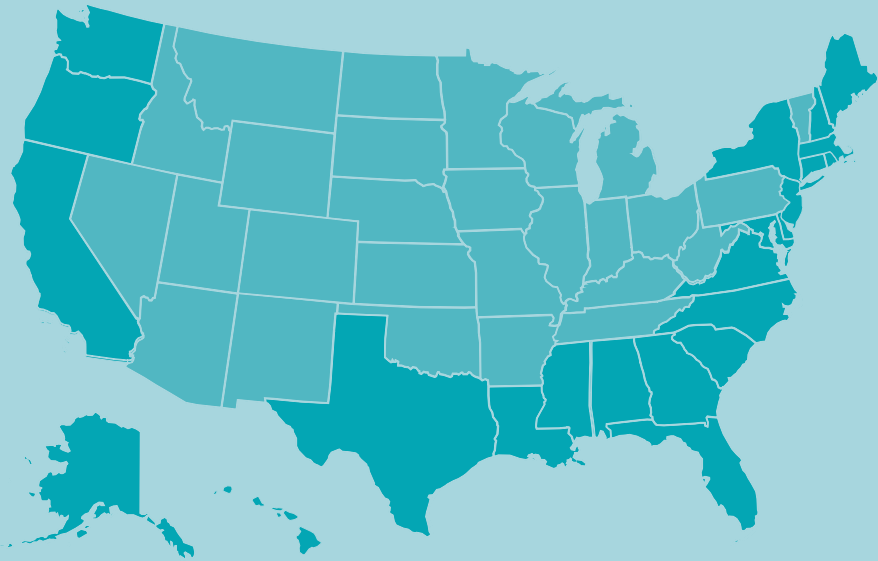
In the U.S. transport, support and marine operations industry sector, marinas had the highest number of establishments. In 2013, 3,844 marinas employed 26,373 full- and part-time workers. Compared to 2005 levels, this was a 4 percent decrease in the number of employees.

Annual payroll for this industry was \$951 million in 2013, a 13 percent increase (13% decrease in real terms) from 2005 levels. The states with the most marinas included Florida (444 establishments), New York (424), California (250), and New Jersey (206).

<sup>21</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).

<sup>22</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).

# Tables | National Overview





**2014 Economic Impacts of the United States Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	1,394,833	153,341,370	41,955,584	64,070,881	811,118	54,370,765	19,707,629	28,030,303
Commercial Harvesters	185,263	14,638,252	4,673,920	7,364,613	185,263	14,638,252	4,673,920	7,364,613
Seafood Processors & Dealers	240,753	32,951,529	10,399,288	14,456,173	62,346	8,533,156	2,693,009	3,743,583
Importers	227,172	62,490,025	10,015,219	19,049,696	-	-	-	-
Seafood Wholesalers & Distributors	63,331	8,589,026	2,822,414	4,038,489	28,503	3,865,616	1,270,268	1,817,580
Retail	678,314	34,672,538	14,044,744	19,161,910	535,006	27,333,741	11,070,432	15,104,527

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	3,952,730	4,233,361	4,204,653	4,394,114	3,930,119	4,524,216	5,370,262	5,118,940	5,547,320	5,472,880
Finfish & Other	1,860,102	2,107,085	2,067,995	2,255,059	1,877,913	2,166,708	2,578,699	2,399,598	2,636,437	2,408,460
Shellfish	2,092,628	2,126,276	2,136,658	2,139,055	2,052,206	2,357,508	2,791,563	2,719,342	2,910,883	3,064,420
<b>Key Species</b>										
American lobster	415,415	404,395	368,528	325,122	311,184	404,034	422,623	430,833	462,842	567,319
Blue crab	140,818	126,034	149,163	160,931	163,291	205,305	184,287	187,547	192,744	210,366
Menhaden	62,520	70,553	92,725	90,995	90,254	92,850	133,005	123,831	129,467	104,549
Pacific halibut	177,599	202,131	227,348	217,726	140,613	207,282	213,465	152,403	117,901	115,487
Pacific salmon	330,816	310,865	381,589	395,253	369,744	554,798	618,332	489,102	756,685	616,728
Sablefish	136,240	132,156	115,610	124,590	128,713	124,385	184,175	140,748	101,685	110,771
Sea scallop	432,514	386,341	386,045	370,053	375,569	455,731	585,142	558,989	466,820	424,479
Shrimp	412,718	452,979	429,993	444,817	379,503	409,334	538,118	488,103	594,593	702,186
Tunas	86,358	86,324	93,875	106,869	96,069	107,966	136,425	163,761	146,257	135,513
Walleye pollock	306,972	329,879	297,461	323,212	270,595	282,399	362,594	343,311	406,437	399,883

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	9,712,468	9,552,100	9,313,639	8,360,561	7,900,423	8,044,996	9,903,529	9,435,960	9,812,198	9,409,780
Finfish & Other	1,630,914	8,356,894	8,230,496	7,299,821	6,630,200	6,736,387	8,526,246	8,135,363	8,532,378	8,162,523
Shellfish	1,081,554	1,195,206	1,083,143	1,060,740	1,270,223	1,308,609	1,377,282	1,300,596	1,279,820	1,247,257
<b>Key Species</b>										
American lobster	87,809	96,119	81,039	87,749	100,775	117,573	126,253	150,177	150,097	147,991
Blue crab	159,242	166,122	157,080	162,384	176,393	199,540	202,147	179,770	135,141	135,581
Menhaden	1,243,807	1,306,632	1,484,230	1,344,468	1,407,366	1,259,464	1,899,357	1,573,101	1,391,008	1,151,355
Pacific halibut	76,264	71,891	69,967	67,000	59,812	56,467	42,864	33,988	30,040	23,203
Pacific salmon	899,759	663,567	886,054	659,196	705,063	787,712	780,073	635,777	1,069,359	720,345
Sablefish	51,093	47,227	43,875	43,285	42,828	40,317	41,279	41,301	39,371	35,300
Sea scallop	56,626	60,123	58,450	53,384	57,921	57,536	59,192	56,895	40,995	33,817
Shrimp	264,163	332,491	273,636	248,647	304,982	249,017	312,185	292,963	292,062	316,548
Tunas	44,252	49,826	50,642	47,882	49,062	48,002	49,839	59,493	55,750	58,734
Walleye pollock	3,411,307	3,400,812	3,066,603	2,276,144	1,866,171	1,947,580	2,810,796	2,872,187	3,003,144	3,145,609

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	4.73	4.21	4.55	3.71	3.09	3.44	3.35	2.87	3.08	3.83
Blue crab	0.88	0.76	0.95	0.99	0.93	1.03	0.91	1.04	1.43	1.55
Menhaden	0.05	0.05	0.06	0.07	0.06	0.07	0.07	0.08	0.09	0.09
Pacific halibut	2.33	2.81	3.25	3.25	2.35	3.67	4.98	4.48	3.92	4.98
Pacific salmon	0.37	0.47	0.43	0.60	0.52	0.70	0.79	0.77	0.71	0.86
Sablefish	2.67	2.80	2.63	2.88	3.01	3.09	4.46	3.41	2.58	3.14
Sea scallop	7.64	6.43	6.60	6.93	6.48	7.92	9.89	9.82	11.39	12.55
Shrimp	1.56	1.36	1.57	1.79	1.24	1.64	1.72	1.67	2.04	2.22
Tunas	1.95	1.73	1.85	2.23	1.96	2.25	2.74	2.75	2.62	2.31
Walleye pollock	0.09	0.10	0.10	0.14	0.14	0.15	0.13	0.12	0.14	0.13

**2014 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	24,702	3,147,359	1,237,009	1,828,733
	Private Boat	28,551	4,228,536	1,357,624	2,346,779
	Shore	27,359	3,678,192	1,210,359	2,045,426
Total Durable Expenditures		357,978	49,568,667	18,224,441	29,235,874
Total Impacts		438,590	60,622,754	22,029,433	35,456,812

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)<sup>1</sup>**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	NA	1,275,267	Fishing Tackle	3,880,187
Private Boat	NA	1,970,427	Other Equipment	2,012,571
Shore	NA	1,624,643	Boat Expenses	16,271,896
Total	NA	4,870,337	Vehicle Expenses	3,689,127
			Second Home Expenses	2,115,329
			Total Durable Expenditures	27,969,109
Total State Trip and Durable Goods Expenditures				32,839,446

**Recreational Anglers by Residential Area (thousands of anglers)<sup>2,7</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	11,439	11,838	12,385	10,661	9,377	9,465	9,198	9,467	9,461	9,023
Non-Coastal	1,492	1,685	1,616	1,591	1,746	1,501	1,430	1,558	1,545	1,490
Total Anglers	12,931	13,523	14,001	12,252	11,123	10,966	10,628	11,025	11,006	10,513

**Recreational Fishing Effort by Mode (thousands of angler trips)<sup>3</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	3,524	3,739	4,179	3,417	3,282	2,602	3,184	3,179	3,855	4,169
Private	43,250	42,718	46,465	44,912	37,650	37,759	35,318	34,703	34,137	32,720
Shore	37,343	38,693	37,025	37,219	33,635	32,104	31,695	32,977	33,882	31,113
Total Trips	84,117	85,150	87,669	85,548	74,567	72,465	70,197	70,859	71,874	68,002

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>4</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Drum (Atlantic croaker and spot)	H	20,356	22,934	26,567	24,018	15,765	13,355	13,319	11,951	17,631	17,744
	R	23,758	19,378	21,369	24,975	20,371	15,978	18,092	18,621	25,490	16,023
Drum (seatrouts)	H	16,099	18,903	17,563	21,077	20,189	16,739	22,240	20,881	17,562	9,327
	R	30,629	30,345	28,976	32,354	25,807	23,937	28,649	31,557	26,983	15,216
Little tunny & Atlantic bonito	H	176	304	291	198	232	184	282	383	344	370
	R	465	864	1,220	722	807	597	700	853	651	1,135
Pacific halibut	H	500	463	585	516	440	398	394	388	454	408
	R	380	353	438	359	321	304	311	324	324	251
Rockfishes & scorpionfishes	H	3,216	2,346	2,132	1,760	1,837	2,045	2,794	3,269	3,728	3,923
	R	1,290	856	653	589	787	671	627	982	1,123	1,097
Salmon	H	1,436	835	1,249	707	1,488	711	979	910	1,301	810
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sharks <sup>5</sup>	H	227	172	193	156	148	167	118	111	252	121
	R	6,155	5,494	6,071	5,613	5,334	5,243	3,758	4,093	6,397	5,770
Striped bass	H	2,491	2,741	2,449	2,345	1,994	1,977	2,250	1,509	2,148	1,820
	R	18,229	23,418	16,220	12,697	8,118	6,357	6,177	5,384	8,686	7,398
Summer flounder	H	4,105	4,035	3,110	2,363	1,828	1,510	1,845	2,277	2,545	2,460
	R	21,868	17,511	17,626	20,547	22,297	22,227	19,724	14,255	13,618	16,997
Tunas (large Atlantic species) <sup>6</sup>	H	667	542	728	795	523	590	420	674	641	590
	R	110	137	96	89	55	53	68	52	28	59

<sup>1</sup> All anglers reported in this table are U.S. residents; NA = not applicable.

<sup>2</sup> Participation estimates include Puerto Rico, but do not include Alaska or Texas. Hawai'i is included for 2004-2006 only.

<sup>3</sup> Effort estimates include Puerto Rico, but do not include Alaska or Texas. Hawai'i effort estimates are available only for the shore and private boat modes.

<sup>4</sup> Harvest and release estimates include Puerto Rico, but do not include Alaska. For Hawai'i, these estimates are available only for the shore and private boat modes.

<sup>5</sup> Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks, and unidentified sharks.

<sup>6</sup> Includes all tunas in the thunnus family.

<sup>7</sup> Includes Louisiana resident participation estimated from historical Marine Recreational Information Program (MRIP) data and a state creel survey.

## United States | Marine Economy

### United States Economy (% of national total)

	#Establishments (millions)	#Employees (millions)	Annual Payroll (\$ trillions)	Employee Compensation (\$ trillions)	Gross Domestic Product (\$ trillions)	Commercial Location Quotient <sup>1</sup>
2005	7.5	116.32	4.48	7.08	13.02	1
2013	7.49	118.27	5.62	8.83	16.67	1
%Change	-0.15	1.68	25.41	24.72	27.97	--

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	1,080	1,142	1,303	1,308	1,395	1,617	1,757	1,766	1,812
	Receipts	78,745	80,066	88,230	89,670	95,219	104,990	110,745	115,167	128,927
Seafood sales, retail	Firms	2,098	2,089	2,610	2,522	2,455	2,513	2,514	2,657	2,497
	Receipts	203,951	211,186	231,776	233,002	207,139	199,810	212,679	217,702	205,555

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	717	670	685	663	645	638	620	589	604
	Employees	37,684	35,894	33,169	33,323	30,894	31,789	31,261	30,988	31,390
	Payroll	1,180,396	1,205,890	1,196,086	1,161,637	1,091,727	1,116,305	1,200,263	1,196,207	1,228,826
Seafood sales, wholesale	Establishments	2,314	2,222	2,438	2,063	2,099	2,183	2,287	1,954	2,098
	Employees	22,666	22,013	24,232	20,116	19,290	19,386	20,622	20,030	20,367
	Payroll	781,459	826,720	924,654	782,178	758,332	798,794	848,454	867,179	884,645
Seafood sales, retail	Establishments	2,155	2,115	2,094	2,044	1,967	1,982	1,972	1,957	1,995
	Employees	10,381	10,545	10,380	9,732	9,439	9,857	10,006	10,293	10,631
	Payroll	194,602	200,971	209,404	205,423	211,264	219,045	222,508	237,619	253,490

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	610	579	573	513	513	547	549	496	497
	Employees	21,025	22,172	22,568	21,019	20,919	17,528	18,590	19,099	18,659
	Payroll	1,232,342	1,376,033	1,552,467	1,694,613	1,470,159	1,288,001	1,400,267	1,467,709	1,512,053
Deep sea freight transportation	Establishments	465	456	427	365	376	372	378	375	305
	Employees	11,357	11,473	11,308	10,231	11,180	10,288	10,362	12,375	8,704
	Payroll	801,863	825,752	855,683	852,063	863,363	867,797	921,990	1,073,529	703,003
Deep sea passenger transportation	Establishments	87	87	92	71	78	56	55	58	62
	Employees	11,376	11,387	ds	ds	ds	ds	ds	ds	ds
	Payroll	628,793	667,949	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	4,143	4,025	4,085	3,972	3,891	3,937	3,896	3,782	3,844
	Employees	27,511	28,339	28,788	28,686	26,643	26,657	26,557	25,764	26,373
	Payroll	839,848	894,097	945,355	954,032	905,488	927,499	953,497	913,140	951,123
Marine cargo handling	Establishments	549	540	552	532	541	507	545	343	458
	Employees	59,670	61,905	62,941	63,736	56,386	57,275	59,517	43,824	66,301
	Payroll	3,034,672	3,261,953	3,428,126	3,272,723	2,776,791	3,026,861	3,159,964	2,601,146	4,086,182
Navigational services to shipping	Establishments	803	802	830	868	846	847	836	850	847
	Employees	10,819	12,043	12,997	13,419	12,689	13,529	13,441	12,532	12,485
	Payroll	584,689	699,375	756,552	847,938	826,384	937,980	893,889	838,959	929,419
Port & harbor operations	Establishments	244	229	223	268	258	287	255	525	383
	Employees	7,453	7,002	6,573	5,608	5,100	4,844	4,933	25,396	7,000
	Payroll	319,338	323,554	318,608	282,671	250,358	290,467	306,882	1,345,857	420,664
Ship & boat building	Establishments	1,799	1,764	1,771	1,782	1,615	1,540	1,497	1,560	1,514
	Employees	141,620	142,057	148,864	157,512	137,759	127,691	127,522	136,365	135,287
	Payroll	5,654,818	5,877,830	6,405,570	7,269,306	6,674,187	6,529,523	6,845,322	7,543,402	7,556,373

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.



# North Pacific Region

- Alaska



King salmon, Ketchikan, Alaska  
(photo credit: Erin Malick)

### MANAGEMENT CONTEXT

The North Pacific Region includes the fisheries in the Exclusive Economic Zone (EEZ) off the state of Alaska. Federal fisheries in this region are managed by the North Pacific Fishery Management Council (NPFMC) and NOAA Fisheries under six fishery management plans (FMPs).

Of the stocks or stock complexes covered in these FMPs only the blue king crab-Pribilof Islands stock is listed as overfished. No stocks or stock complexes in this region that are subject to overfishing.

#### North Pacific Region FMPs

1. Bering Sea/Aleutian Islands (BSAI) groundfish
2. Gulf of Alaska (GOA) groundfish
3. BSAI king and tanner crabs
4. Alaska scallop
5. Salmon in the EEZ
6. Arctic

### CATCH SHARE PROGRAMS

The North Pacific Region has six catch share programs, more than any other region. These are the: 1) Western Alaska Community Development Quota Program; 2) Alaska Halibut and Sablefish Individual Fishing Quota (IFQ) Program; 3) American Fisheries Act Pollock Cooperatives; 4) Bering Sea and Aleutian Islands Crab IFQ Program; 5) Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80); and 6) Central Gulf of Alaska Rockfish Program. The landings revenues for these programs totaled over \$1 billion in 2013, exceeding the total landings revenue of any other state. Following is a description of these catch share programs and their performance.

**The Western Alaska Community Development Quota (CDQ) Program** was originally implemented in 1992 as part of a restructuring of the Bering Sea/Aleutian Islands (BSAI) groundfish fishery. Under this Program, a percentage of the total allowable catch for groundfish, prohibited species, halibut and crab is apportioned to 65 eligible villages in Western Alaska that are organized into six CDQ groups. The purpose of the Program is to: 1) provide eligible Western Alaska villages with the opportunity to participate and invest in

fisheries in the Bering Sea and Aleutian Islands Management Area; 2) support economic development in Western Alaska; 3) alleviate poverty and provide economic and social benefits to residents; and 4) achieve a sustainable and diversified local economy.

Annual CDQ allocations provide a revenue stream for CDQ groups through various channels, including the direct catch and sale of some species and the leasing of quota to various harvesting partners. CDQ groups use the revenue from the harvest of their fisheries allocations to fund economic development activities and provide employment opportunities. In 2013, the CDQ 2012 Decennial Review was released. The State of Alaska determined that each CDQ entity has maintained or improved performance since the evaluation period (2006 through 2010).

**The Alaska Halibut and Sablefish IFQ Program** was implemented in 1995. The primary objectives of this IFQ Program are to: 1) eliminate gear conflicts; 2) address safety concerns; and 3) improve product quality. The performance results of the Halibut fishery show that, relative to its Baseline period (3-year period prior to implementation), the following indicators decreased: 2013 quota, landings and active vessels. However, inflation-adjusted halibut revenue and revenue per vessel increased. The Sablefish fishery shows similar results for 2013: quota, landings and active vessels decreased, while inflation-adjusted revenue per vessel increased.

**The American Fisheries Act (AFA) Pollock Cooperatives** were established in 1999 and 2000 with the goals of settling allocation disputes between inshore (catcher vessels) and offshore (catcher/processors) sectors and ending the race for fish. Key performance indicators of this program show that relative to its Baseline, 2013 quota, landings, inflation-adjusted revenue and revenue per vessel increased. However, the number of active vessels decreased.

**The Bering Sea and Aleutian Islands (BSAI) Crab Rationalization Program** was implemented in 2005 to address the race to harvest; high bycatch and discard mortality; and product quality issues. The program



also aims to balance the interests of those who depend on crab fisheries. This program includes share allocations to harvesters and processors. Processor quota was incorporated to preserve the viability of processing facilities in dependent communities and, particularly, to maintain competitive conditions in ex-vessel markets. Community interests are protected by the CDQ and Adak Community allocations, regional landings and processing requirements and several community protection measures. The key performance indicators of this program show that, relative to its Baseline, the 2013 quota, landings and the number of active vessels decreased. However, inflation-adjusted revenue and revenue per active vessel increased.

### **The Non-Pollock Trawl Catcher/Processor**

**Groundfish Cooperatives**, commonly referred to as the Amendment 80 Cooperatives, were implemented in 2007 to create economic incentives that would improve retention of all fish caught. The cooperatives also seek to reduce bycatch by commercial fishing vessels using trawl gear in the non-pollock groundfish fisheries. Key performance indicators of this program show that, relative to its Baseline, the 2013 quota, landings and inflation-adjusted revenue per vessel increased. However, the number of active vessels and inflation-adjusted revenue declined.

**The Central Gulf of Alaska Rockfish Program** was initially established as a 2-year (2007-2008) pilot program by the U.S. Congress, and later extended to 5 years. NOAA Fisheries implemented this catch share program in 2012. The objectives of this Program are to reduce bycatch and discards, encourage conservation-minded practices, improve product quality and value, and provide stability to the processing labor force. Results show that in 2013, the quota, landings, number of active vessels, inflation-adjusted revenue and revenue per active vessel increased relative to the Baseline.

## **POLICY UPDATES**

Salmon bycatch in the Bering Sea pollock fishery is an important management challenge in the North Pacific because on the one hand, it involves the largest fishery in the U.S. (~25% of total landings) but on the other hand, salmon, especially Chinook in Western Alaska Rivers, is arguably the most important subsistence

fishery in the U.S. Prior to 2011, fixed salmon time-area closures and dynamic “rolling hot spot” closures were used to protect salmon but the Council concluded that these measures were not reducing bycatch sufficiently. In 2011, Amendment 91 to the BSAI Fishery Management Plan established Chinook catch limits (“hard caps”), allocated at the cooperative and vessel level, as well as other vessel-level incentives to encourage bycatch reduction at lower levels of salmon encounters and abundance when the hard cap may not strongly constrain the fishery. In 2015, the Council passed additional measures to reduce Chinook and chum bycatch including penalties for vessels with high bycatch rates, salmon excluder device requirements, seasonal reallocation of pollock quota and hard cap reductions in years of low Chinook in-river abundance.

In June 2015, the NPFMC also recommended the reduction of halibut bycatch limits in the BSAI groundfish fisheries. The bycatch limits were reduced 21 percent, from 4,426 metric tons to 3,515 metric tons. The new limits were apportioned among sector and gear types and a different reduction was applied to each. The Gulf of Alaska halibut bycatch limits incorporate measures to minimize adverse economic impacts on fishing industry sectors and will be phased in during a 3-year period that started in 2014.

Also in 2015, NOAA Fisheries proposed regulations to implement a cost-recovery fee program for the Western Alaska CDQ Program for groundfish, halibut and three limited access privilege programs (i.e., AFA, Aleutian Islands Pollock and Amendment 80 fisheries). The cost-recovery fees will recover the actual costs directly related to the management, data collection and enforcement of the programs. However, the fees cannot exceed 3 percent of the annual ex-vessel value of fish harvested by a program that is subject to the cost-recovery fee. The cost-recovery programs were subsequently implemented in January 2016.

The Halibut Catch Sharing Plan (CSP) in IPHC Area 2C (Southeast Alaska) and Area 3A (Southcentral Alaska) was adopted by the NPFMC and implemented by NOAA Fisheries in January 2014. The CSP defines an annual process for allocating halibut between the charter and



## North Pacific Region | Regional Summary

commercial halibut fisheries in Areas 2C and 3A; authorizes limited annual leases of commercial IFQ for use in the charter fishery as guided angler fish (GAF); replaced the guideline harvest-level method for setting catch limits for the charter halibut fisheries in Areas 2C and 3A; and establishes sector allocations that vary in proportion with changing levels of annual halibut abundance.

### COMMERCIAL FISHERIES

Alaska fishermen earned more than \$1.7 billion from their commercial harvest (5.7 billion pounds) in 2014. Landings revenue was dominated by salmon (\$546 million), walleye pollock (\$400 million) and crab (\$238 million), which together accounted for 69 percent of revenue. Walleye pollock contributed the most to landings in 2014, accounting for 55 percent of total landings volume (3.1 billion pounds).

The North Pacific groundfish fishery is different from most other U.S. fisheries in that a large portion of the fishery is processed at sea and, therefore, no landings revenues are reported. The landings revenue for the species landed and processed at sea is estimated by using prices obtained from the shore-side sector. These species include Atka mackerel, flatfish, Pacific cod, rockfish, sablefish and walleye pollock. When data from the shore-side sector are inadequate, historical information about the relationship between the ex-vessel price and the wholesale price of finished products is used to estimate ex-vessel prices and revenue for portions of the fishery mostly processed at sea.

#### Key North Pacific Commercial Species

- Atka mackerel
- Crab
- Flatfish
- Pacific cod
- Pacific halibut
- Pacific herring
- Rockfish
- Sablefish
- Salmon
- Walleye pollock

### Economic Impacts

In this report, the U.S. seafood industry includes the commercial harvest sector; seafood processors and dealers; seafood wholesalers and distributors; importers; and seafood retailers. In 2014, Alaska’s commercial fishing and seafood industry<sup>1</sup> generated \$4.2 billion in sales impacts, \$1.9 billion in income impacts, \$2.3

billion in value-added impacts and 61,000 full- and part-time jobs. The commercial harvesters sector contributed the most to these impacts with \$2.9 billion in sales, \$1.3 billion in income, \$1.6 billion in value-added impacts and 44,000 jobs.

### Landings Revenue

In 2014, landings revenue for finfish and shellfish totaled more than \$1.7 billion, a 33 percent increase from 2005 (13% in real terms after adjusting for inflation) and an 11 percent decrease from 2013. Finfish and other catch accounted for 85 percent of the 2014 landings revenue. Landings revenue was dominated by salmon (\$546 million), walleye pollock (\$400 million) and crab (\$238 million).

The largest increases in landings revenue between 2005 and 2014 were for rockfish (115% increase, 83% in real terms); salmon (86% increase, 58% in real terms); flatfish (64% increase, 39% in real terms); and crab (63% increase, 38% in real terms). Pacific halibut (-37%, -47 in real terms) and Pacific herring (-14%, -27% in real terms) were the only species with decreased landings revenues during this period.

Atka mackerel landings revenues increased 35 percent from 2013 to 2014 largely due to the increase in the Bering Sea total allowable catch (TAC) over 2013 levels. Atka mackerel was the only species with a significant (greater than 5%) year-over-year increase in landings revenue in 2014. Species with declining revenues from 2013 to 2014 included Pacific herring (-29%), salmon (-20%) and Pacific cod (-19%). In absolute terms, salmon had the largest one-year decline (-\$134 million) in landings revenue from 2013 to 2014, which is largely attributable to the biennial cycle of pink salmon, which tends to have weaker runs in even-numbered years. The 2013 pink salmon, in particular, was quite strong, – with the highest landings ever recorded for Alaska.

### Landings

In 2014, North Pacific commercial fishermen landed 5.7 billion pounds of finfish and shellfish, virtually unchanged from 2013 levels. In terms of key species or species groups, walleye pollock contributed the most to landings, accounting for 55 percent of total landings (3.1 billion

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf))

pounds). Pacific cod (717 million pounds), salmon (683 million pounds) and flatfish (662 million pounds) ranked next in terms of landings. Compared with 2005, landings of rockfish (104%), flatfish (94%) and crab (49%) increased the most. The largest decreases between 2005 and 2014 were experienced by Pacific halibut (-71%) and Atka mackerel (-46%).

**Commercial Fisheries Facts**

**Landings revenue**

- On average, the key species or species groups accounted for 99 percent of total revenue in the North Pacific Region from 2005 to 2014 (\$1.6 billion).
- Salmon contributed more than any other species or species group, averaging \$437 million in landings revenue from 2005 to 2014.

**Landings**

- On average, the key species or species groups accounted for 99 percent of total revenue in the North Pacific Region from 2005 to 2014 (\$5.1 billion pounds).
- Walleye pollock contributed the most to landings in the region, averaging 2.8 billion pounds from 2005 to 2014.

**Prices**

- Pacific halibut had the highest average annual ex-vessel price per pound (\$3.58) during the period, followed by sablefish (\$3.28) and crab (\$2.43).
- Walleye pollock had the lowest average annual ex-vessel price per pound (\$0.14) during the period, followed by flatfish (\$0.16) and Pacific herring (\$0.20).

**Prices**

Overall, ex-vessel price per pound increased for eight of the 10 key species and species groups from 2005 to 2014. Prices for Atka mackerel (167%, 129% in real terms); salmon (135%, 100% in real terms); and Pacific halibut (114%, 82% in real terms) more than doubled during this time period. From 2013 to 2014, the largest price increases were for Pacific halibut (27%), sablefish (24%) and salmon (19%). The largest price declines occurred among Pacific herring (-37%), Pacific cod (-23%) and walleye pollock (-15%), all of which had slightly higher landings (up 5 to 14%) in 2014 suggesting supply-side effects may have contributed to the price decline.

**RECREATIONAL FISHERIES**

Recreational fishermen spent approximately 960,000 days fishing in Alaska in 2014. These anglers numbered more than 287,000, with 59 percent of them non-residents. Pacific halibut was the most caught species or species group, with approximately 659,000 harvested or released in 2014. Rockfish species and coho salmon were also caught in large numbers, with 483,000 and 450,000 caught, respectively. Together, these three species accounted for 72 percent of total catch by anglers in the North Pacific Region.

**Key North Pacific Recreational Species**

- Chinook salmon
- Chum salmon
- Coho salmon
- Greenlings (lingcod)
- Pacific halibut
- Pink salmon
- Razor clams
- Rockfish
- Sockeye salmon

**Economic Impacts and Expenditures**

The contribution of recreational fishing activities<sup>2</sup> in the North Pacific Region are reported in terms of economic impacts (employment, sales, income and value-added impacts) and expenditures on fishing trips in the state of Alaska. Employment impacts generated by recreational fishing activities in the state totaled 5,167 full- and part-time jobs in 2014. Sales impacts from recreational fishing trips totaled \$589 million; income impacts totaled \$240.3 million; and value-added impacts totaled \$357.3 million.

Expenditures for fishing trips and durable equipment across Alaska in 2014 totaled \$413.3 million. Approximately \$298.6 million of these expenditures were related to trip expenses, with a large portion coming from trips in the for-hire (51%) and private boat (45%) sectors. Durable goods expenditures were \$115 million in 2014. The largest expenditures were for boat purchases (\$53.7 million).

**Participation**

In 2014, there were 287,000 recreational saltwater anglers who fished in Alaska. This was a 14 percent decrease from 2005 (334,000 anglers) and a 4 percent decrease from 2013 (298,000 anglers). Recreational fishermen in Alaska are categorized as either a resident of a

<sup>2</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>).

coastal or a non-coastal county, or out-of-state. In 2014, residents of coastal/non-coastal counties made up 59 percent of total anglers. There was a 19 percent decrease in the number of coastal/non-coastal county anglers from 2005 and a 4 percent decrease from 2013. In terms of out-of-state anglers, 118,000 anglers fished in the North Pacific Region in 2014, representing a 7 percent decrease from 2005 and a 3 percent decrease from 2013.

### Recreational Fishing Facts

#### Participation

- An average of 300,600 anglers fished in the North Pacific annually between 2005 and 2014.
- Alaska residents accounted for 41 percent of total anglers on average during the 10-year period.

#### Days Fished

- An annual average of 927,000 days fished were by anglers in Alaska between 2005 and 2014.

#### Harvest and Release

- Pacific halibut was the most commonly caught key species or species group with an annual average of 396,000 fish caught from 2005 to 2014.

### Days Fished

Anglers who fished in Alaska spent approximately 960,000 days fishing in 2014.<sup>3</sup> This was a 9 percent decrease from the 1.1 million days spent fishing in 2005. From 2013 to 2014, there was a 2 percent decrease in the number of days fished.

### Harvest and Release

Of Alaska's key species and species groups, Pacific halibut (659,000 fish), rockfish species (483,000 fish) and coho salmon (450,000 fish) were most frequently caught by recreational fishermen.

Between 2005 and 2014, two of the North Pacific's key species or groups experienced increases in catch totals. Those with the largest increases include rockfish species (26%) and sockeye salmon (24%). During the same period, large decreases were experienced by razor clams (-79%) and pink salmon (-62%)

Rockfish species had the largest year-over-year in-

crease in the number of fish caught from 2013 to 2014 (28%). The largest year-over-year decreases during the same period were experienced by the following species groups: razor clams (-68%), chum salmon (-52%) and pink salmon (-41%).

### MARINE ECONOMY

Across the entire economy of Alaska,<sup>4</sup> approximately 267,000 full- and part-time employees were employed by about 21,000 establishments in 2013. Annual payroll totaled almost \$15 billion, employee compensation totaled about \$27 billion and gross state product totaled \$57 billion.<sup>5</sup>

The Commercial Fishing Location Quotient (CFLQ) provides a measure of the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>6</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The national CFLQ is 1. If a state is less than 1, then less commercial fishing occurs in this state than the national average. If a state is greater than 1, then more commercial fishing occurs in this state than the national average. The Bureau of Labor Statistics did not disclose Commercial Fishing Location Quotient (CFLQ) data for Alaska for 2013.

For this report, the marine economy, a subset of the regional economy, consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms) and 2) transport, support and marine operations (employer establishments). These sectors consist of several different marine-related industries. The following sections discuss the contribution of these industries to the national marine economy in terms of the number of establishments or firms, employees and total annual payroll or receipts.

### Seafood Sales and Processing

The number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging increased 106 percent to 35 firms in 2013, relative to 2005. Annual receipts increased 149 percent to about

<sup>3</sup> In Alaska, recreational fishing data is collected in terms of the number of days spent fishing rather than the number of fishing trips taken.

<sup>4</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

<sup>5</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).

<sup>6</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).



\$3.3 million in 2013 (a 91% increase in real terms).

Employer establishments engaged in seafood product preparation and packaging decreased 7 percent from 2005 to 2013, to 115. The number of employees increased 30 percent to 8,638. Annual payroll increased 31 percent to about \$309 million in 2013 (a 1% increase in real terms).

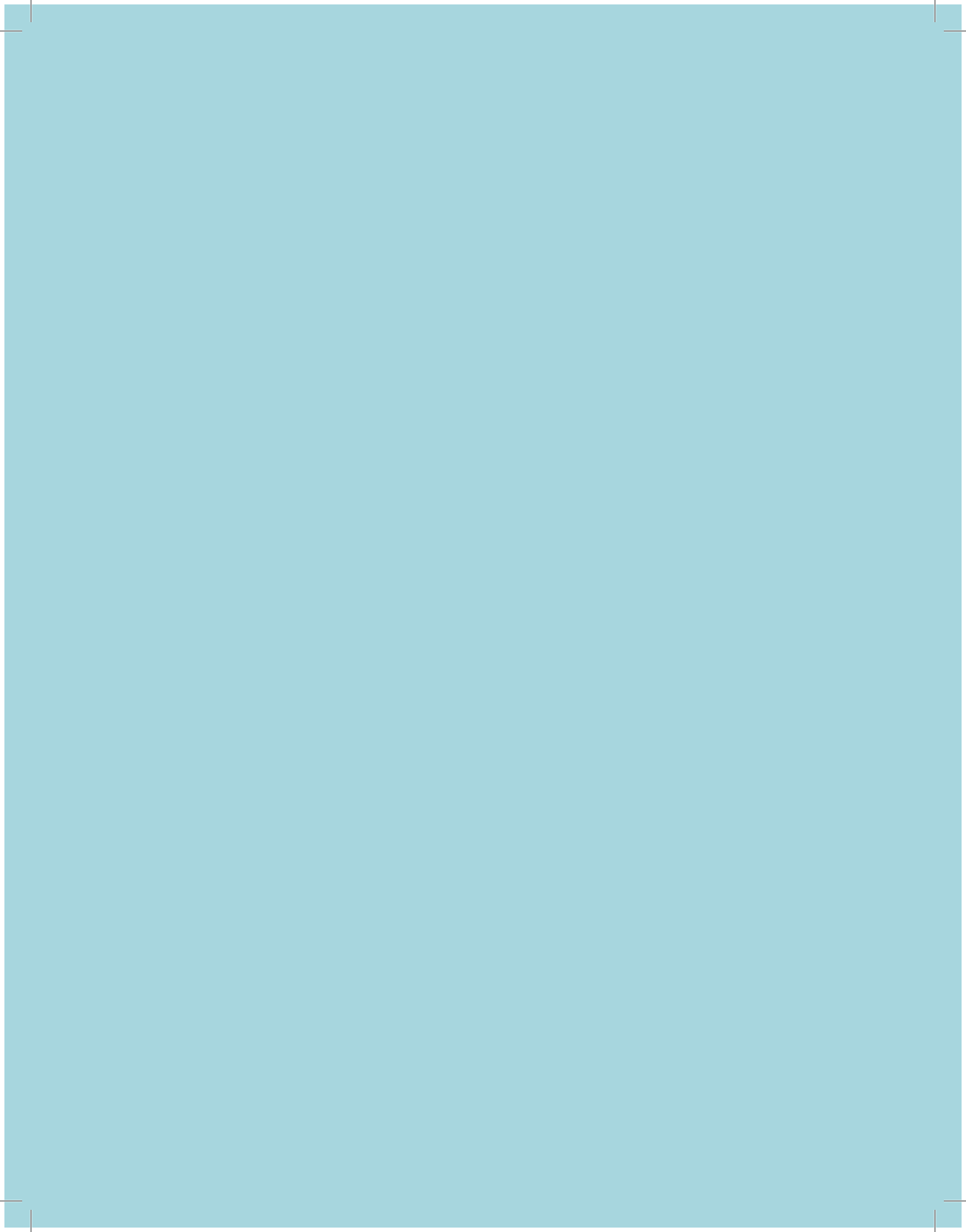
Employer establishments in the wholesale seafood sales sector decreased 51 percent from 2005 to 2013, to 43. The number of employees decreased 42 percent to 102 in 2013. Annual payroll decreased 9 percent to \$7.2 million (a 30% decrease in real terms).

From 2005 to 2013, the number of non-employer firms in the seafood retail sales sector remained unchanged at 11 firms. Annual receipts increased 94 percent to about \$1.5 million in 2013 (a 49% increase in real terms).

Employer establishments in the seafood retail sales sector increased 27 percent from 2005 to 2013, to 14. The number of employees decreased 100 percent to 0 in 2013. Annual payroll increased 99 percent to \$2.3 million (a 53% increase in real terms).

### **Transport, Support and Marine Operations**

Data for the transport, support and marine operations sector of Alaska's economy were largely suppressed for confidentiality reasons. However, Coastal Freight Transportation and Navigational Services to Shipping play an important role in Alaska's economy, with over \$83 million and \$11 million in 2013 payroll, respectively.



# Tables | Alaska





**2014 Economic Impacts of the Alaska Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	60,749	4,213,515	1,872,175	2,317,288	60,373	4,177,861	1,858,770	2,299,851
Commercial Harvesters	43,594	2,930,055	1,317,246	1,624,777	43,594	2,930,055	1,317,246	1,624,777
Seafood Processors & Dealers	13,557	1,088,829	475,163	589,106	13,221	1,061,843	463,361	574,496
Importers	28	7,749	1,242	2,362	-	-	-	-
Seafood Wholesalers & Distributors	398	41,572	14,234	18,587	393	41,033	14,050	18,346
Retail	3,172	145,310	64,290	82,456	3,165	144,929	64,113	82,232

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	1,290,505	1,314,859	1,485,703	1,759,899	1,259,452	1,593,216	1,930,553	1,839,406	1,926,900	1,712,476
Finfish & Other	1,131,016	1,190,463	1,304,791	1,508,181	1,063,873	1,386,583	1,663,710	1,546,388	1,680,243	1,459,192
Shellfish	159,489	124,396	180,912	251,718	195,579	206,633	266,843	293,018	246,657	253,284
<b>Key Species</b>										
Atka mackerel	16,112	14,816	17,506	21,688	29,734	30,535	30,031	30,636	16,647	22,494
Crab	146,131	110,572	168,195	240,747	180,264	189,553	248,693	275,745	230,139	237,813
Flatfish	61,315	68,200	74,507	96,326	69,233	79,509	109,684	123,383	103,464	100,482
Pacific cod	103,397	144,678	181,325	242,152	98,507	145,905	163,426	171,206	189,991	153,275
Pacific halibut	170,075	192,905	217,399	208,983	134,603	200,454	205,211	144,801	111,483	106,674
Pacific herring	13,429	7,455	14,817	22,912	29,294	23,026	12,305	19,430	16,280	11,492
Rockfish	13,174	18,003	17,422	16,756	14,446	21,588	33,628	33,241	27,172	28,313
Sablefish	76,781	85,023	88,500	92,207	87,236	97,671	139,708	120,163	82,333	86,499
Salmon	293,562	276,512	347,625	368,219	344,655	505,695	564,788	441,284	679,528	546,022
Walleye pollock	381,502	380,510	344,170	436,074	254,295	280,022	401,915	453,171	446,550	399,883

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	5,651,307	5,421,264	5,312,288	533,624	4,064,033	4,347,449	5,353,133	5,344,168	5,791,755	5,671,337
Finfish & Other	5,583,798	5,342,240	5,233,919	4,426,678	3,968,061	4,261,588	5,267,305	5,226,303	5,699,044	5,579,094
Shellfish	67,510	79,023	78,369	106,946	95,972	85,861	85,828	117,865	92,712	92,243
<b>Key Species</b>										
Atka mackerel	129,482	130,814	126,961	127,029	156,887	145,206	112,596	103,987	51,424	69,503
Crab	57,310	69,002	70,699	99,445	89,531	79,875	80,463	111,914	87,089	85,106
Flatfish	341,204	383,111	421,824	599,342	506,339	564,084	649,625	647,342	659,706	661,829
Pacific cod	546,748	517,799	487,347	493,814	490,541	538,775	662,977	716,726	681,318	716,594
Pacific halibut	73,922	69,154	67,242	64,639	57,749	54,857	41,291	32,422	28,696	21,616
Pacific herring	85,701	79,845	67,137	83,787	86,951	108,116	98,600	75,058	85,076	96,789
Rockfish	65,513	74,316	86,220	89,453	83,540	100,043	106,024	114,463	123,031	133,322
Sablefish	37,352	33,509	32,245	30,307	27,005	25,262	27,140	29,720	30,215	25,679
Salmon	872,318	634,227	861,253	640,070	671,181	756,825	738,122	611,163	1,012,612	683,318
Walleye pollock	3,410,065	3,400,810	3,066,600	2,276,144	1,866,171	1,947,578	2,810,787	2,872,186	3,003,134	3,145,605

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atka mackerel	0.12	0.11	0.14	0.17	0.19	0.21	0.27	0.29	0.32	0.32
Crab	2.55	1.60	2.38	2.42	2.01	2.37	3.09	2.46	2.64	2.79
Flatfish	0.18	0.18	0.18	0.16	0.14	0.14	0.17	0.19	0.16	0.15
Pacific cod	0.19	0.28	0.37	0.49	0.20	0.27	0.25	0.24	0.28	0.21
Pacific halibut	2.30	2.79	3.23	3.23	2.33	3.65	4.97	4.47	3.89	4.93
Pacific herring	0.16	0.09	0.22	0.27	0.34	0.21	0.12	0.26	0.19	0.12
Rockfish	0.20	0.24	0.20	0.19	0.17	0.22	0.32	0.29	0.22	0.21
Sablefish	2.06	2.54	2.74	3.04	3.23	3.87	5.15	4.04	2.72	3.37
Salmon	0.34	0.44	0.40	0.58	0.51	0.67	0.77	0.72	0.67	0.80
Walleye pollock	0.11	0.11	0.11	0.19	0.14	0.14	0.14	0.16	0.15	0.13

**2014 Economic Impacts of Alaska Recreational Fishing Expenditures (thousands of dollars)<sup>1</sup>**

		#Jobs	Sales	Income	Value-Added
Trip Impacts by Fishing Mode	For-Hire	1,906	233,056	109,854	139,312
	Private Boat	2,056	245,475	81,427	140,006
	Shore	119	14,458	4,770	8,069
Total Durable Expenditures		1,086	95,981	44,243	69,956
Total State Economic Impacts		5,167	588,970	240,294	357,343

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	129,735	23,692	Fishing Tackle	24,756
Private Boat	80,979	51,854	Other Equipment	31,943
Shore	6,486	5,871	Boat Expenses	53,691
Total	217,200	81,417	Vehicle Expenses	4,300
			Second Home Expenses	0
			Total Durable Expenditures	114,690
Total State Trip and Durable Goods Expenditures				413,307

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Out-of-State	127	120	127	119	127	122	124	118	121	118
Coastal/Non-Coastal	207	197	205	190	158	159	161	160	176	169
Total Anglers	334	317	332	309	284	281	286	278	298	287

**Recreational Fishing Effort by Mode (thousands of angler fishing days)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Days Fished	1,054	941	1,052	935	914	811	811	808	980	960

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2,3,4</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Chinook Salmon	H	116	117	110	71	89	78	85	63	81	111
	R	127	104	110	80	96	66	95	62	120	94
Chum Salmon	H	17	14	18	12	22	11	21	11	25	12
	R	42	34	34	28	34	19	38	20	39	19
Coho Salmon	H	695	395	506	403	418	350	386	263	493	390
	R	191	107	122	89	94	74	88	50	122	60
Lingcod	H	38	35	42	37	32	32	33	33	34	32
	R	67	53	70	65	46	39	36	36	33	29
Pacific Halibut	H	500	463	585	516	440	398	394	388	454	408
	R	380	353	438	359	321	304	311	324	324	251
Pink Salmon	H	149	65	133	88	117	82	72	78	113	69
	R	343	167	280	151	224	121	135	141	203	118
Razor Clams	H	451	483	389	593	556	357	436	NA	291	90
	R	0	0	0	0	0	0	0	NA	3	3
Rockfish Species	H	184	173	198	226	209	224	211	230	256	335
	R	199	165	178	171	149	151	122	121	121	148
Sockeye Salmon	H	27	21	32	29	34	28	31	28	40	35
	R	11	7	21	10	10	6	10	8	13	12

<sup>1</sup> Data reported in this table includes saltwater fishing activities only.

<sup>2</sup> Information reported in this table is from the Sport Fish Division of the Alaska Department of Fish and Game (ADF&G) and includes saltwater fishing activities only.

<sup>3</sup> In this table, '0' = 0-999 fish.

<sup>4</sup> NA = data not available

## Alaska | Marine Economy

### Alaska's State Economy (% of national total)<sup>1,2</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>3</sup>
2005	19,808 (0.3%)	231,088 (0.2%)	9.77 (0.2%)	18.60 (0.3%)	40.28 (0.3%)	5.87
2013	20,519 (0.3%)	266,627 (0.2%)	14.60 (0.3%)	26.59 (0.3%)	57.28 (0.3%)	ds
%Change	3.5	13.3	33.1	30.0	29.7	NA

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>1</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	17	22	33	31	32	28	26	25	35
	Receipts	1,315	1,055	1,837	1,455	1,693	2,482	2,882	2,708	3,268
Seafood sales, retail	Firms	11	12	12	13	16	23	15	15	11
	Receipts	752	649	1,358	1,431	1,350	1,595	903	1,626	1,458

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>1</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	124	113	114	122	121	119	122	116	115
	Employees	6,621	6,866	6,506	7,707	7,572	8,074	8,578	8,289	8,638
	Payroll	235,457	246,067	262,127	254,894	255,403	268,208	296,851	297,284	308,961
Seafood sales, wholesale	Establishments	88	77	68	57	54	52	48	47	43
	Employees	177	224	167	143	0	0	159	143	102
	Payroll	7,928	8,509	8,528	8,389	8,445	9,141	9,985	10,943	7,205
Seafood sales, retail	Establishments	11	7	7	9	10	10	10	15	14
	Employees	22	0	0	37	44	0	0	0	0
	Payroll	1,175	0	0	1,839	1,824	1,986	2,487	2,019	2,337

### Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	43	46	46	49	50	55	63	47	53
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	27,357	33,888	33,132	ds	ds	ds	82,692
Deep sea freight transportation	Establishments	5	5	3	3	3	3	1	2	3
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	1	1	6	1	1	0	1	1	2
	Employees	ds	ds	ds	ds	ds	NA	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	NA	ds	ds	ds
Marinas	Establishments	22	21	13	14	13	14	14	13	12
	Employees	71	ds	48	66	56	ds	ds	ds	ds
	Payroll	2,612	ds	1,763	2,303	2,181	1,932	2,053	1,613	1,449
Marine cargo handling	Establishments	13	11	17	12	13	13	14	8	9
	Employees	703	503	677	ds	ds	ds	ds	334	ds
	Payroll	20,827	22,876	35,345	ds	ds	ds	ds	26,481	ds
Navigational services to shipping	Establishments	32	31	31	25	23	25	22	21	22
	Employees	318	ds	ds	296	312	303	321	97	103
	Payroll	20,334	ds	25,058	23,233	25,630	27,543	27,156	9,938	10,805
Port & harbor operations	Establishments	2	2	2	7	8	9	8	18	13
	Employees	ds	ds	ds	ds	ds	ds	ds	582	ds
	Payroll	ds	ds	ds	ds	ds	ds	1,790	25,545	ds
Ship & boat building	Establishments	14	17	16	17	21	22	23	23	20
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds

<sup>1</sup> ds = these data are suppressed.

<sup>2</sup> NA = not applicable.

<sup>3</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.



# Pacific Region

- California
- Oregon
- Washington



Catcher-processor vessel, Washington  
(photo credit: Leif Anderson)



### MANAGEMENT CONTEXT

The Pacific Region includes California, Oregon and Washington. Federal fisheries in this region are managed by the Pacific Fishery Management Council (PFMC) and NOAA Fisheries under four fishery management plans (FMPs).

#### Pacific Region FMPs

- 1. Coastal pelagic species
- 2. Pacific coast salmon
- 1. Pacific coast groundfish
- 2. West Coast highly migratory species

Four of the stocks or stock complexes covered in these FMPs were listed as overfished in 2014: canary rockfish, Pacific ocean perch, yelloweye rockfish and Pacific bluefin tuna. Two stock complexes were subject to overfishing in 2014: bigeye tuna and Pacific bluefin tuna.

Interesting management techniques are employed in the Pacific Region’s fisheries. For example, the Pacific groundfish and salmon fisheries are subject to "weak stock management," where access to the harvestable surplus of healthier stocks is of 10 restricted to protect weaker stocks with which they co-mingle in the ocean. These weaker stocks include seven rebuilding groundfish stocks, salmon (listed under the Endangered Species Act), and other non-listed stocks that constrain the fishery.

Salmon management is further complicated by the need to ensure equitable allocation of harvest among diverse user groups and coordination with other entities that have jurisdiction over other aspects of salmon management. Decades of habitat modification, hatchery practices, harvest, and growing competition for water have affected the viability of salmon stocks and made them more vulnerable to adverse environmental conditions. These conditions include the prolonged drought and adverse ocean conditions experienced in recent years. Low returns of salmon to the Klamath River in 2006, and to the Sacramento River in 2008 and 2009, resulted in unprecedented closures of ocean and in-river fisheries, leading to federal disaster relief for affected entities.

Coastal pelagic species (CPS) are highly variable, environmentally sensitive stocks that provide forage for

marine mammals, birds and fish. These species include Pacific sardine, northern anchovy, Pacific and jack mackerel, and market squid. Of these, Pacific sardine is the most commonly targeted CPS finfish and is managed via an innovative harvest control rule: allowable harvest varies with sea surface temperature. Because the geographic range of sardine tends to expand with abundance, harvest allocation between the California and Pacific Northwest fisheries is an ongoing and dynamic issue. The annual sardine harvest guideline is allocated coast-wide on a seasonal basis. Recent decreases in harvest guideline limits have contributed to the development of an intense derby fishery.

Catch limits for Pacific halibut, a transboundary fish stock, are set in January by the International Pacific Halibut Commission (IPHC). This bilateral commission between the U.S. and Canada determines total allowable catch levels (TACs) for Pacific halibut that will be caught in the U.S. and Canadian exclusive economic zones (EEZs). After catch levels are determined, the PFMC develops a catch-sharing plan for tribal and non-tribal (commercial and recreational) fisheries conducted in the federal waters of California, Oregon and Washington.

The Highly Migratory Species (HMS) FMP includes tunas, billfish and pelagic sharks as managed species. The albacore surface hook-and-line fishery is by far the most economically important commercial HMS fishery, followed by the drift gillnet fishery for swordfish and thresher shark. HMS is also a very important component of the catch for the Pacific Region’s recreational commercial passenger fishing vessel fleet and the private recreational boat fleet.

### CATCH SHARE PROGRAMS

Market-based management tools are used by fishery managers to reduce over-capitalization, increase the economic viability of fisheries, and promote individual accountability for harvest and harvesting practices. Limited access privilege programs (LAPPs) and other catch share programs make up a category of such tools. Eco-labels are another market-based management tool that encourages fishermen to adopt harvest practices that are considered sustainable by an organization, such as the Marine Stewardship Council (MSC). The Pacific hake

midwater trawl, Oregon pink shrimp, Oregon Dungeness crab, American Albacore Fishing Association albacore tuna, North Pacific halibut, and West Coast limited entry trawl groundfish fisheries have all received certifications from the MSC.

The Pacific Region has two catch share programs: 1) the Pacific Sablefish Permit Stacking Program; and 2) the Pacific Groundfish Trawl Rationalization Program. The landings revenues for these programs totaled more than \$257 million in 2013. Following is a description of these catch share programs and their performance.

**Pacific Sablefish Permit Stacking Program:** This catch share program was implemented in 2001 and allows vessels to stack multiple vessel permits on a single vessel. The goal of this approach is to improve economic efficiency through rationalization of the fixed gear fleet, increase benefit for fishing communities, promote equity, mitigate reallocation effects of previous harvest regulations, promote safety, and improve product quality and value. Results for this program show that in 2013, the number of active vessels, landings, and inflation-adjusted revenue decreased compared with the Baseline period (average of the 3-year period prior to start date). However, inflation-adjusted revenue per vessel increased during this period.

**Pacific Trawl Rationalization Program:** This catch share program was implemented by the PFMC in January 2011. This Program involves individual fishing quotas (IFQs) for non-whiting groundfish and whiting trawlers, and cooperatives for whiting mothership and catcher processor sectors. The objectives of this program are to provide a mechanism for total catch accounting; provide a viable, profitable and efficient groundfish fishery; promote practices that reduce by-catch and discard mortality, and minimize ecological impacts; increase operational flexibility; minimize adverse effects from the IFQ program on fishing communities and other fisheries; promote measurable economic and employment benefits through the seafood catching, processing, distribution elements and support sectors of the industry; provide quality product for the consumer; and increase safety in the fishery.

The economic performance of the Program has been strong - net revenue per active catcher vessel increased 65 percent relative to the pre-catch share period (2009-2010) for the non-whiting groundfish fishery, and 400 percent for the whiting fishery. Meanwhile, motherships experienced a 62 percent increase and catcher-processors experienced a 7 percent decrease in net revenue. Expanded observer coverage and dockside monitoring, which were implemented coincident to the catch share program, coupled with long-term adherence to catch targets and improved stock assessment models have also contributed, to varying degrees, to improved fishery performance. For example, in the first three years of catch shares, the total catch of rebuilding stocks (of which three-- canary rockfish, widow rockfish and petrale sole-- are now declared rebuilt) was 50 percent lower than the previous three years.

## POLICY UPDATES

In April 2015, after reviewing the best available science and hearing from fishery participants and environmental groups, the PFMC closed the Pacific sardine fishery for the 2015-2016 season. The fishery was scheduled to start on July 1, 2015, but the biomass was estimated to be 97,000 metric tons after reaching a peak of approximately one million metric tons in 2006. Although commercial fishing is closed, the PFMC allowed up to 7,000 tons of sardine to account for small amounts taken as incidental catch in other fisheries, live bait harvest, tribal harvest and research. However, if the allocated amount of incidental harvest is reached, those other fisheries will also be shut down.

In June 2015, the PFMC announced that two important West Coast groundfish stocks—canary rockfish and petrale sole—were rebuilt. These stocks had been subject to strict rebuilding plans that severely constrained West Coast fisheries for more than a decade. The canary rockfish was declared overfished in 2000, and a rebuilding plan was put in place in 2001. Under the rebuilding plan, catch quotas were dramatically reduced and large area closures put in place, and the stock was expected to rebuild by 2057. However, the new 2015 canary rockfish assessment showed that the coast-wide canary stock is already rebuilt. Petrale sole was declared overfished in 2010, and a rebuilding plan was put in place in 2011 to rebuild the stock by 2016. The petrale sole harvest

## Pacific Region | Regional Summary

limit was cut by half; fisheries in which petrale sole could be caught were reduced. Area closures were also implemented. The 2015 stock assessment showed that the rebuilding plan was successful, and the stock had increased over the target level.

### COMMERCIAL FISHERIES

In 2014, commercial fishermen in the Pacific Region landed 1.2 billion pounds of finfish and shellfish, earning \$754 million in landings revenue. Crab (\$199 million) and other shellfish (\$166 million) dominated landings revenue (48%), but made up only 7 percent of Pacific Region landings. These species groups commanded ex-vessel prices of \$3.82 and \$5.83 per pound, respectively. Washington had the highest landings revenue in the region (\$326 million) in 2014, followed by California (\$235 million) and Oregon (\$158 million). California had the highest landings (358 million pounds), followed by Oregon (292 million pounds) and Washington (191 million pounds).

#### Key Pacific Region Commercial Species

- Albacore tuna
- Crab
- Flatfish
- Hake
- Other shellfish
- Rockfish
- Sablefish
- Salmon
- Shrimp
- Squid

### Economic Impacts

In this report, the U.S. seafood industry includes the commercial harvest sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.<sup>1</sup> In 2014, the Pacific Region's seafood industry impacts were largest in California, followed by Washington and Oregon. The seafood industry generated the following sales impacts: \$23 billion in California, \$7.3 billion in Washington and \$1.4 billion in Oregon. Income impacts were \$5 billion in California, \$2 billion in Washington and \$0.5 billion in Oregon. Value added impacts were \$8.3 billion in California, \$3 billion in Washington and \$0.7 billion in Oregon. Employment impacts were 143,000 jobs in California, 63,000 jobs in Washington and 20,000 jobs in Oregon.

The importers sector generated the greatest employment impacts in California (63,000 jobs), followed by the retail sector with 58,000 jobs. In Washington, the

retail sector (23,000 jobs) generated the largest employment impacts, followed by the seafood processors and dealers sector (16,000 jobs). In Oregon, the retail sector (10,000 jobs) generated the largest employment impacts, followed by the commercial harvesters sector (5,600 jobs). The importers sector contributed more to the total value-added impacts than any other single sector in both California and Washington.

### Landings Revenue

Landings revenue in the Pacific Region totaled \$754 million in 2014. This was an 82 percent increase (a 55% increase in real terms after adjusting for inflation) from 2005 levels and a 10 percent decrease from 2013. Totaling \$492 million in 2014, shellfish revenue experienced a 99 percent increase (a 69% increase in real terms) from 2005 to 2014, and experienced an 11 percent decrease from 2013 to 2014. Crab (\$199 million) and other shellfish (\$166 million) had the highest landings revenue in the Pacific Region in 2014. Together, they accounted for 48 percent of total landings revenue but only 7 percent of total landings in the Pacific Region.

Between 2005 and 2014, the landings revenue for crab increased 105 percent (74% in real terms) and increased 54 percent (31% in real terms) for other shellfish. From 2005 to 2014, shrimp experienced the largest increase in landings revenue (289% nominal, 230% real). Oregon accounted for almost half (48%) of the region's shrimp landings revenue in 2014, increasing 21 percent from 2013 levels and 325 percent from 2005 levels. The Oregon pink shrimp fishery was certified as a sustainable fishery by the MSC in 2007 and recertified in 2013 as sustainable. The Washington State pink shrimp fishery was certified as sustainable for the first time in 2013.

Landings revenue for squid also increased substantially (130% nominal, 95% real) largely due to favorable ocean conditions and high demand in foreign markets. Only flatfish (-2%) experienced a decline in landings revenue from 2005 to 2014. Between 2013 and 2014, only shrimp (43%) and sablefish (24%) experienced an increase in revenue. Crab (-20%), albacore tuna (-19%) and other shellfish (-16%) experienced the largest decreases in landings revenue during this peri-

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at: [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).



od. Washington had the highest finfish landings revenue (\$88 million), followed by Oregon (\$78 million) and California (\$61 million). Shellfish landings revenue was also dominated by Washington (\$238 million), followed by California (\$174 million) and Oregon (\$80 million).

## Landings

Fishermen in the Pacific Region landed 1.2 billion pounds of finfish and shellfish in 2014. This was a 7 percent decrease from 2005 and a 5 percent year-over-year decrease from 2013. Finfish landings contributed 68 percent of total landings in the Pacific Region (816 million pounds) in 2014. Finfish landed volume decreased 24 percent over the 10-year period (2005 to 2014), and decreased 4 percent from 2013 to 2014. Shellfish landings increased 69 percent from 2005 to 2014, but declined 6 percent from 2013 to 2014 to 390 million pounds. Hake (Pacific whiting) at 575 million pounds, and squid at 228 million pounds were the species or species groups with the largest landings volume in the Pacific region in 2014.

Shrimp landings more than tripled (257%) and squid landings almost doubled (85%) from 2005 to 2014. Sablefish (-30%), flatfish (-24%), and crab (-16%) had the largest landings declines during this period. From 2013 to 2014, only hake, shrimp, and sablefish landings increased, up 14 percent, 30 percent, and 5 percent respectively. Salmon landings declined 35 percent from 2013 to 2014, largely due to the decline in pink salmon landings, which tend to have weak runs in even years. Landings of the high-valued chinook and coho salmon both increased in 2014 compared to 2013, reflecting projected increases in abundance. Crab landings (-40%) and other shellfish landings (-29%) also declined significantly during this period.

## Prices

The ex-vessel prices for the Pacific Region's key species and species groups in 2014 were higher than their 10-year average for nine of the 10 key species (in real terms, prices increased for eight of the 10 key species). Ex-vessel prices for crab (143%, 106% in real terms), followed by hake (100%, 67% in real terms) and sablefish (70%, 45% in real terms) experienced the biggest increases between 2005 and 2014. Compared with the ex-vessel prices in 2013, prices for the Pacific Region's salmon (up

41%) and crab (up 34%) experienced the largest increases. Only prices for hake and albacore tuna (down 17% and 16%, respectively) declined from 2013 to 2014.

## Commercial Fisheries Facts

### Landings revenue

- On average between 2005 and 2014, the key species or species groups accounted for 93 percent of total revenue, generating \$548 million in the Pacific Region.
- On average, landings revenue in the Pacific region was split between shellfish (63%) and finfish (37%).
- Crab had the highest annual average landings revenue in the region from 2005 to 2014 at \$153 million.

### Landings

- Key species or species groups contributed an average of 80 percent annually to total landings between 2005 and 2014, or 903 million pounds.
- On average, landings volume in the Pacific region was split between shellfish (28%) and finfish (72%).
- Hake (whiting), contributed the most to landings in the region, averaging 465 million pounds from 2005 to 2014.

### Prices

- Other shellfish had the highest average annual ex-vessel price per pound (\$4.80) between 2005 to 2014, followed by crab (\$2.50) and sablefish (\$2.19).
- Hake (whiting) had the lowest average annual ex-vessel price per pound (\$0.09) during the period, followed by squid (\$0.28) and flatfish (\$0.45).

## RECREATIONAL FISHERIES

In 2014, almost 1.5 million recreational anglers took 6.4 million fishing trips in the Pacific Region. About 69 percent of these anglers were residents of a regional coastal county. Of the total saltwater fishing trips taken, 53 percent were in the shore sector and another 30 percent were in the private boat sector. The most frequently caught species or species groups in the Pacific Region included rockfishes & scorpionfishes; surfperches; and barracuda, bass & bonito.

## Economic Impacts and Expenditures

The contribution of recreational fishing activities in the Pacific Region<sup>2</sup> are reported in terms of economic impacts at the state level (employment, sales, income

## Pacific Region | Regional Summary

and value-added impacts) and expenditures on fishing trips and durable equipment at the regional level. Employment impacts in California were the highest in the Region, with 22,737 full- and part-time employment impacts generated by recreational fishing activities in the state. Washington (6,180 jobs) and Oregon (3,333 jobs) followed in terms of employment impacts generated by recreational fishing activities.

### Recreational Fishing Facts

#### Participation

- An average of 1.6 million anglers fished in the Pacific Region annually from 2005 to 2014.
- Residents of coastal counties within the Pacific Region accounted for an average of 71 percent of total anglers annually during the 10-year period.

#### Fishing trips

- In the Pacific Region, an average of 6.5 million fishing trips were taken annually from 2005 to 2014.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 1.7 million and 4.1 million fishing trips, respectively, from 2005 to 2014.

#### Harvest and release

- Rockfish and scorpionfish was the most commonly caught key species or species group, averaging 2.5 million fish during the 10-year period.
- Of the 10 commonly caught key species or species groups, six were harvested more of 10 than released during this period.

In addition to employment impacts, the contribution of recreational fishing activities to the Pacific Region's economy can be measured in terms of sales impacts and the contribution of these activities to gross domestic product (value-added impacts). In 2014, sales impacts were highest in California (\$2.7 billion), followed by Washington (\$690 million) and Oregon (\$298 million).

The total saltwater fishing trip and durable equipment expenditures were \$3 billion across the Pacific Region in 2014. Approximately 77 percent of these expenditures were durable equipment purchases. The greatest durable goods expenditures were for boat expenses (\$1.1 billion), followed by fishing tackle (\$546.3 million) and vehicle expenses (\$315.7 million). Fishing trip-related

expenditures by the Pacific Region's non-residents totaled \$65.4 million, of which the greatest portion can be attributed to trips in the for-hire sector (\$48.9 million). Residents of the Pacific Region spent \$627.8 million on trip-related expenses, with the greatest of these expenses related to the private boat sector (\$220.2 million).

### Key Pacific Region Recreational Species

- Albacore and other tunas
- Barracuda, bass and bonito
- Croakers
- Flatfishes
- Greenlings
- Mackerel
- Rockfishes and scorpionfishes
- Salmon
- Sculpins
- Surfperches

### Participation

There were 1.5 million recreational anglers who fished in the Pacific Region in 2014. This was a 3 percent increase from 2005 (1.4 million anglers). These anglers were Pacific Region residents from either a coastal (1 million anglers) or non-coastal county (459,000 anglers). Approximately 69 percent of total anglers in 2014 were residents of a coastal county. Coastal county angler participation in 2014 remained unchanged from 2005 (1 million anglers) and experienced an 11 percent decrease between 2013 and 2014. Non-coastal county angler participation experienced a 12 percent increase from 2005 (409,000 anglers) and experienced a 10 percent decrease from 2013 (511,000 anglers).

### Fishing Trips

Recreational fishermen took 6.4 million fishing trips in the Pacific Region in 2014. This remained unchanged from 2005 and was a 14 percent decrease from 2013. Of the total trips taken in the Pacific Region in 2014, 53 percent of the trips were from the shore sector and 30 percent of the trips were from the private boat sector.

### Harvest and Release

The Pacific Region's species and species groups caught most frequently in 2014 were rockfishes & scorpionfishes (4.5 million fish), surfperches (2.4 million fish) and barracuda, bass & bonito (2.1 million fish). Between 2005 and 2014, five of the Pacific Region's key species or species groups showed decreases in catch totals, with the largest decreases occurring among croakers

<sup>2</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>).

(-73%), salmon (-55%) and mackerel (-40%). Large increases in the number of fish caught between 2005 and 2014 were observed in albacore & other tunas (590%), flatfishes (25%), and greenlings (15%).

## MARINE ECONOMY

Across all sectors of the economy in California, Oregon and Washington, about 17 million full- and part-time employees were employed by about 1.2 million establishments in 2013.<sup>3</sup> Annual payroll totaled \$934 billion. Total employee compensation in the Pacific Region totaled \$1.5 trillion, and the combined gross state product of all states totaled about \$2.8 trillion.<sup>4</sup>

The Commercial Fishing Location Quotient (CFLQ) provides a measure of the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>5</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The national CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

In 2013, the CFLQ for Washington was the highest in the region at 12.13. Washington's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 12.13 times higher than the level of employment in these industries nationwide. The 2013 CFLQ in Oregon was second highest in the region at 4.07.

## Seafood Sales and Processing

From 2005 to 2013, the number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging in the Pacific Region increased 39 percent to 210 firms. The greatest number of these non-employer firms was located in California (157). Annual receipts decreased 11 percent to about \$14 million in 2013 (a 32% decrease in real terms).

From 2005 to 2013, employer establishments en-

gaged in seafood product preparation and packaging decreased 10 percent, to 149 firms. The biggest number of Pacific Region employer firms in this sector was located in Washington (86). The number of employees decreased 5 percent to 9,002. Annual payroll increased 17 percent to about \$410 million in 2013 (a 10% decrease in real terms).

Employer establishments in the wholesale seafood sales sector increased 12 percent from 2005 to 2013, to 455. The largest number of wholesaling establishments was located in California (320). The number of employees decreased 3 percent to 4,859. Annual payroll increased 35 percent to about \$239 million in 2013 (a 4% increase in real terms).

The number of non-employer firms in the retail seafood sector in the Pacific Region increased 27 percent to 259 firms in 2013. The greatest number of these non-employer firms was located in California (218). Annual receipts increased 10 percent to about \$22 million in 2013 (a 16% decrease in real terms). Employer establishments engaged in seafood retail decreased 16 percent from 2005 to 2013, to 210 firms. The biggest number of Pacific Region employer firms in this sector was located in California (155). The number of employees increased 3 percent to 1,532. Annual payroll increased 27 percent to about \$40 million in 2013 (a 3% decrease in real terms).

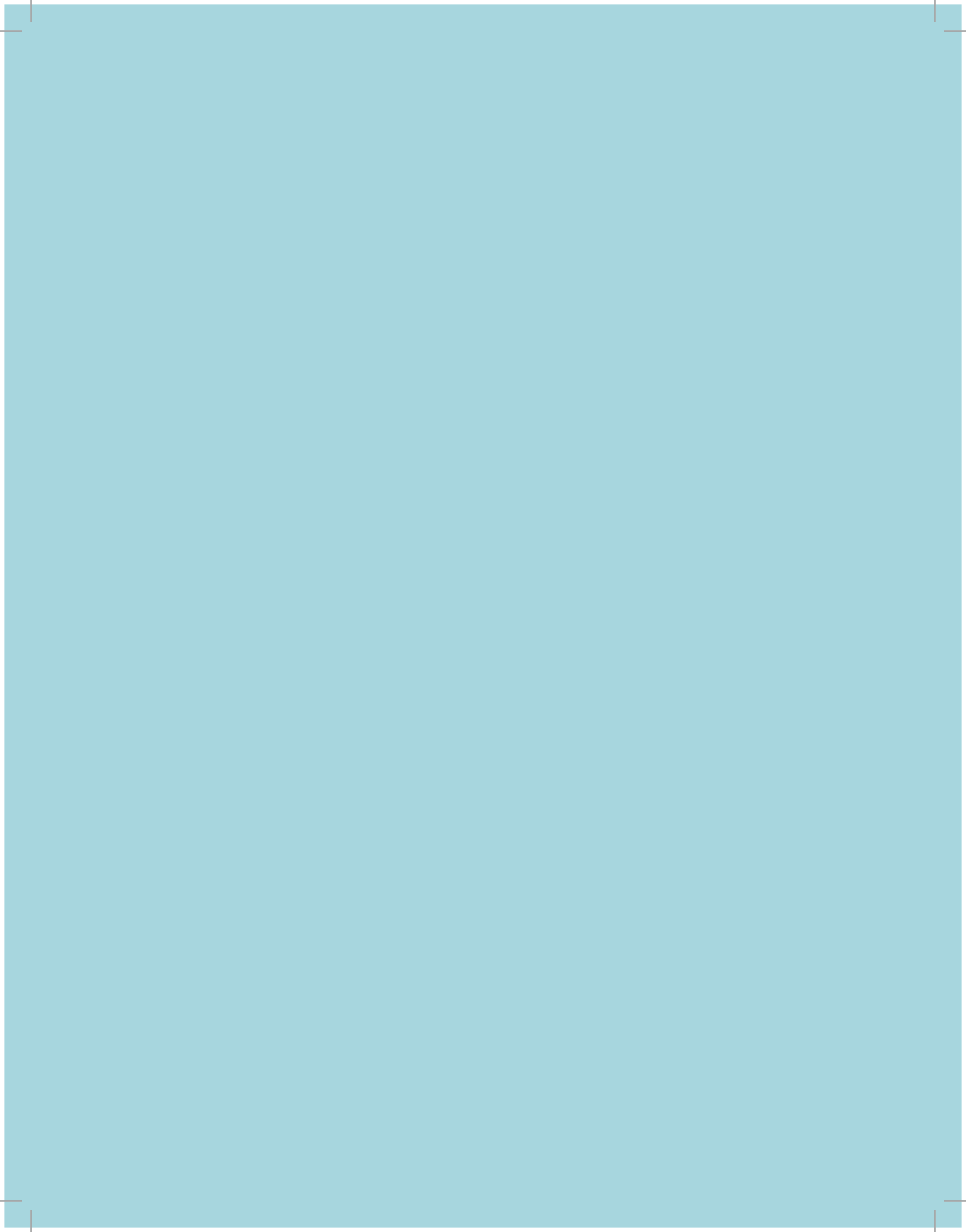
## Transport, Support and Marine Operations

The size of the Transport, Support and Marine Operations sectors in the Pacific Region is difficult to assess because much of the state-level data is suppressed for confidentiality purposes. It is clear, however, that these sectors play an important role in the regional economy. For example, there were 394 establishments classified as marinas, employing 2,832 workers and spending \$95 million on payroll in 2013 in Washington, Oregon, and California combined. The Ship and Boat Building Sector consisted of 283 establishments, employing 19,444 workers and contributing \$891 million in payroll across all three states in the region.

<sup>3</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

<sup>4</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).

<sup>5</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).





# Tables | Pacific Region



## Pacific Region | Commercial Fisheries

### 2014 Economic Impacts of the Pacific Seafood Industry (thousands of dollars)

	Landings Revenue	With Imports				Without Imports			
		#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
California	234,780	143,440	23,195,894	5,017,023	8,305,666	18,178	1,332,882	500,573	688,257
Oregon	157,912	20,051	1,404,355	469,255	665,609	16,619	852,810	356,155	474,845
Washington	326,248	63,382	7,330,457	2,015,266	3,041,830	27,467	1,764,743	730,773	988,672

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	414,584	471,788	459,772	500,447	501,938	566,579	729,785	674,465	833,790	754,081
Finfish & Other	166,922	176,425	176,104	215,784	168,495	202,527	260,625	245,668	278,569	262,294
Shellfish	247,662	295,363	283,668	284,663	333,442	364,052	469,160	428,798	555,222	491,787
<b>Key Species</b>										
Albacore tuna	20,574	23,767	21,612	28,845	27,541	28,780	43,347	45,827	41,930	33,819
Crab	97,127	143,758	121,136	107,107	123,865	132,843	182,085	176,880	249,569	198,694
Flatfish	13,816	12,974	14,462	15,738	14,155	10,511	11,225	11,636	15,479	13,570
Hake (whiting)	29,139	34,425	32,603	58,492	14,104	27,316	52,869	47,054	61,321	58,630
Other shellfish	107,438	116,161	120,569	129,947	142,348	142,227	181,122	150,197	196,121	165,501
Rockfish	6,559	6,848	7,541	9,257	8,974	9,226	9,446	9,421	9,871	9,810
Sablefish	20,366	22,991	20,984	27,279	34,481	35,977	44,873	28,108	19,574	24,272
Salmon	37,188	34,306	33,865	26,992	24,986	48,986	53,456	47,542	76,993	70,431
Shrimp	15,706	12,433	17,298	25,132	16,594	21,941	40,638	40,326	42,614	61,041
Squid	31,516	26,998	29,169	26,585	56,928	71,173	66,557	63,894	73,720	72,412

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	1,301,649	1,169,906	1,109,222	1,091,673	899,043	1,065,499	1,176,780	1,070,065	1,264,760	1,205,691
Finfish & Other	1,070,529	935,523	902,887	906,773	582,120	650,822	756,733	719,517	848,991	815,882
Shellfish	231,120	234,383	206,335	184,900	316,923	414,677	420,047	350,548	415,770	389,809
<b>Key Species</b>										
Albacore tuna	19,649	28,117	25,483	24,507	27,055	25,477	24,284	30,638	28,471	27,596
Crab	61,849	85,301	51,888	45,075	59,158	61,668	66,518	52,860	87,154	52,055
Flatfish	31,495	27,689	33,502	37,409	40,599	33,281	25,557	24,439	28,778	23,844
Hake (whiting)	569,273	558,078	454,533	531,277	253,053	355,216	496,363	347,171	505,614	574,921
Other shellfish	30,907	30,611	29,543	28,557	30,733	28,166	29,318	27,245	39,779	28,407
Rockfish	7,406	6,633	7,447	9,469	10,458	11,038	9,910	10,406	10,794	10,719
Sablefish	13,742	13,718	11,630	12,978	15,822	15,055	14,139	11,580	9,156	9,622
Salmon	27,249	29,172	24,600	19,040	33,742	30,693	41,799	24,307	56,553	36,666
Shrimp	26,069	20,290	26,497	35,799	33,456	46,191	66,686	66,319	71,505	93,098
Squid	123,090	108,561	109,464	85,200	205,643	288,678	267,983	214,988	230,365	227,979

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Albacore tuna	1.05	0.85	0.85	1.18	1.02	1.13	1.78	1.50	1.47	1.23
Crab	1.57	1.69	2.33	2.38	2.09	2.15	2.74	3.35	2.86	3.82
Flatfish	0.44	0.47	0.43	0.42	0.35	0.32	0.44	0.48	0.54	0.57
Hake (whiting)	0.05	0.06	0.07	0.11	0.06	0.08	0.11	0.14	0.12	0.10
Other shellfish	3.48	3.79	4.08	4.55	4.63	5.05	6.18	5.51	4.93	5.83
Rockfish	0.89	1.03	1.01	0.98	0.86	0.84	0.95	0.91	0.91	0.92
Sablefish	1.48	1.68	1.80	2.10	2.18	2.39	3.17	2.43	2.14	2.52
Salmon	1.36	1.18	1.38	1.42	0.74	1.60	1.28	1.96	1.36	1.92
Shrimp	0.60	0.61	0.65	0.70	0.50	0.48	0.61	0.61	0.60	0.66
Squid	0.26	0.25	0.27	0.31	0.28	0.25	0.25	0.30	0.32	0.32

**2014 Economic Impacts of the Pacific Recreational Fishing Expenditures (thousands of dollars, trips)**

	Trips	#Jobs	Sales	Income	Value Added
California	4,401	22,737	2,657,497	1,139,897	1,777,155
Oregon	731	3,333	297,993	143,382	203,335
Washington	1,300	6,180	690,425	287,917	477,561

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-residents	Residents		
For-Hire	48,882	207,820	Fishing Tackle	546,312
Private Boat	10,603	220,241	Other Equipment	274,943
Shore	5,947	199,784	Boat Expenses	1,121,769
Total	65,431	627,846	Vehicle Expenses	315,711
			Second Home Expenses	4,116
			Total Durable Expenditures	2,262,848
Total State Trip and Durable Goods Expenditures				2,956,125

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	1,028	1,257	1,184	1,065	1,136	1,047	1,069	1,181	1,151	1,027
Non-Coastal	409	481	379	385	638	384	390	468	511	459
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	1,437	1,738	1,563	1,450	1,774	1,431	1,459	1,649	1,662	1,486

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	624	635	605	514	492	455	654	647	725	1,082
Private	1,849	1,761	1,828	1,421	1,471	1,432	1,659	1,806	1,912	1,935
Shore	3,962	4,548	3,818	3,846	4,345	3,739	3,792	4,973	4,859	3,415
Total Trips	6,435	6,944	6,251	5,781	6,308	5,626	6,105	7,426	7,496	6,432

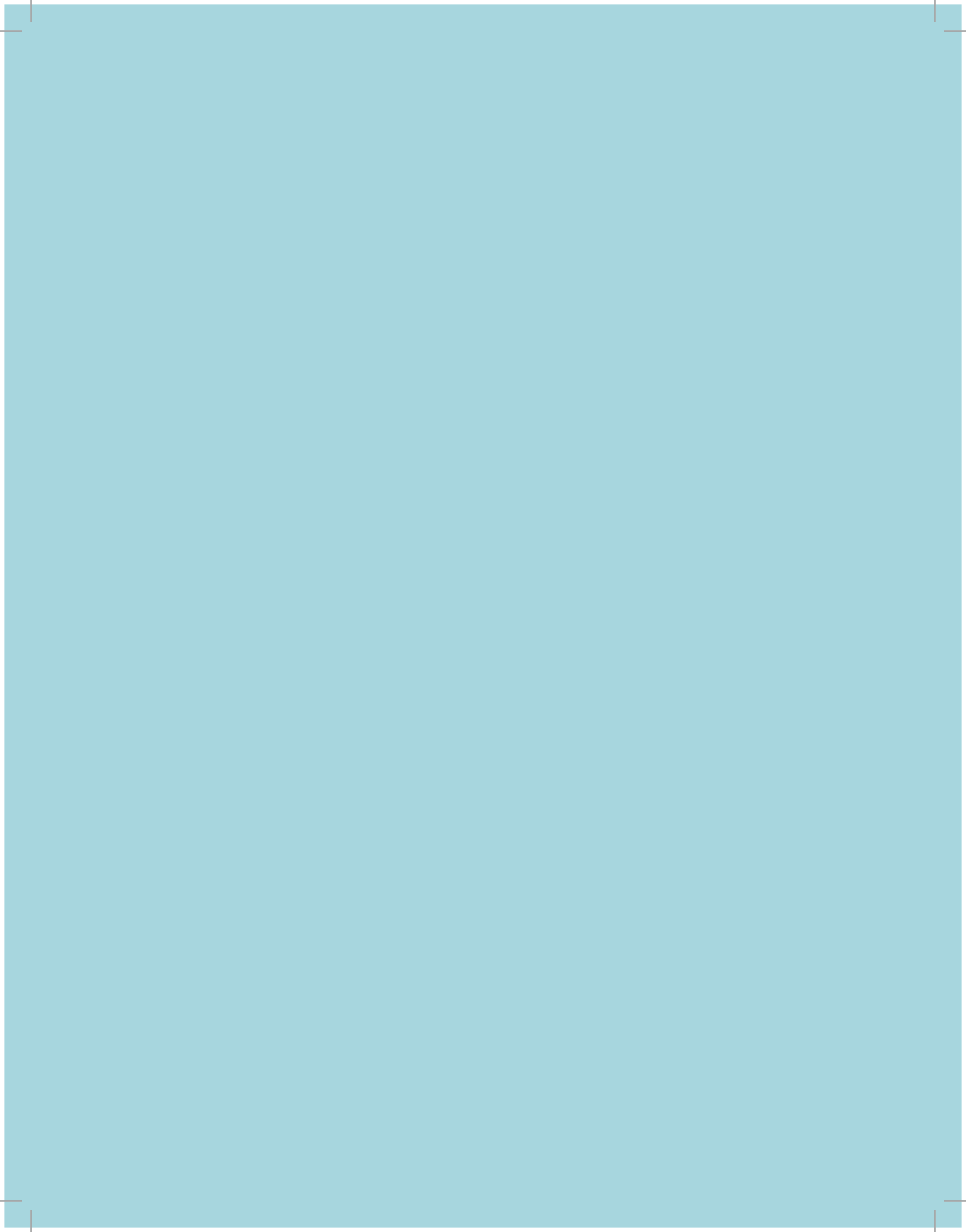
**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Albacore & other tunas	H	18	33	47	27	37	52	24	90	74	112
	R	2	3	7	0	13	2	6	36	53	26
Barracuda, bass & bonito	H	1015	668	537	434	412	373	435	371	215	453
	R	2011	1660	1407	1093	1211	991	738	775	1112	1658
Croakers	H	572	456	427	321	427	173	128	256	173	136
	R	618	553	631	272	362	340	98	231	257	181
Flatfishes	H	560	325	260	344	329	417	641	561	713	994
	R	513	520	338	361	297	277	222	296	459	350
Greenlings	H	268	234	192	169	188	158	227	272	316	350
	R	283	209	153	141	194	197	292	306	283	284
Mackerel	H	1023	1158	823	940	753	479	590	438	246	483
	R	1872	3287	1209	1765	1267	1272	1050	806	656	1260
Rockfishes & scorpionfishes	H	3032	2173	1934	1534	1628	1821	2583	3039	3472	3588
	R	1091	691	475	418	638	520	505	861	1002	949
Salmon <sup>3</sup>	H	432	223	450	104	808	162	384	467	549	193
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpins	H	72	55	49	60	59	53	91	68	70	60
	R	238	222	208	228	200	198	238	229	298	199
Surfperches	H	945	1164	861	832	752	638	1017	1144	1034	1125
	R	1242	1675	861	817	706	452	931	1279	1006	1281

<sup>1</sup> NA = data are not available because out-of-state resident information is collected for individual states, but whether an angler is a resident of a region is not specified.

<sup>2</sup> In this table, '0' = 0-999 fish.

<sup>3</sup> Salmon harvest estimates exclude release mortality.





# Tables | California



## California | Commercial Fisheries

### 2014 Economic Impacts of the California Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	143,440	23,195,894	5,017,023	8,305,666	18,178	1,332,882	500,573	688,257
Commercial Harvesters	4,996	471,324	160,798	235,741	4,996	471,324	160,798	235,741
Seafood Processors & Dealers	5,364	548,555	203,409	269,904	2,082	212,945	78,962	104,774
Importers	62,820	17,280,401	2,769,514	5,267,823	-	-	-	-
Seafood Wholesalers & Distributors	12,643	1,782,354	578,107	807,655	711	100,257	32,518	45,430
Retail	57,617	3,113,261	1,305,196	1,724,543	10,388	548,356	228,295	302,311

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	116,084	129,907	127,580	120,861	159,253	187,263	222,160	243,963	255,444	234,780
Finfish & Other	46,640	43,164	50,363	46,968	46,682	44,291	55,805	55,245	65,075	60,746
Shellfish	69,444	86,743	77,217	73,893	112,571	142,971	166,355	188,718	190,370	174,034
<b>Key Species</b>										
Crab	19,653	46,483	28,626	24,227	32,508	43,016	53,762	88,207	91,851	70,258
Pacific sardine	3,150	5,100	8,218	7,575	5,544	4,366	4,398	4,249	1,510	2,002
Rockfish	4,145	4,630	4,924	5,781	5,330	5,453	5,644	5,170	5,748	5,595
Sablefish	4,295	4,892	4,873	6,224	9,765	11,491	15,121	8,988	7,047	8,942
Salmon	12,804	5,261	7,835	6	NA	1,215	5,096	12,850	22,957	12,124
Sea urchins	6,156	5,145	5,400	6,550	7,806	7,413	8,102	8,320	9,832	9,058
Shrimp	4,338	4,213	4,064	5,696	5,462	4,951	8,598	8,492	9,520	11,778
Spiny lobster	6,039	8,111	6,916	8,008	7,934	11,386	12,972	13,749	13,842	18,239
Squid	31,467	26,959	29,131	26,477	56,877	71,165	66,546	63,886	73,701	72,383
Swordfish	1,896	2,695	3,127	2,365	1,932	2,203	3,350	2,090	2,699	2,920

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	442,353	341,661	384,826	323,884	376,053	439,440	409,837	353,875	363,798	358,451
Finfish & Other	301,993	203,107	258,625	223,912	147,934	120,103	108,131	101,789	89,744	98,674
Shellfish	140,360	138,554	126,200	99,972	228,120	319,336	301,706	252,086	274,054	259,778
<b>Key Species</b>										
Crab	12,028	27,391	12,393	9,845	16,660	23,352	22,206	27,589	33,094	20,826
Pacific sardine	76,324	102,683	178,480	126,945	82,842	73,814	60,993	50,660	15,636	17,106
Rockfish	3,181	3,252	3,136	3,933	3,984	3,949	3,450	3,457	3,862	3,553
Sablefish	3,645	3,617	3,240	3,507	5,089	5,501	5,646	3,916	3,291	3,959
Salmon	4,962	1,184	1,743	1	NA	255	1,133	2,862	4,337	2,558
Sea urchins	11,304	10,664	11,131	10,283	12,205	11,230	11,465	11,443	12,945	11,834
Shrimp	2,944	1,197	2,015	3,011	3,596	4,522	8,217	7,255	9,712	9,872
Spiny lobster	761	886	663	741	706	716	751	876	764	952
Squid	122,887	108,410	109,150	84,071	205,278	288,497	267,890	214,867	230,061	227,781
Swordfish	653	1,187	1,210	1,168	898	815	1,365	887	1,174	1,191

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Crab	1.63	1.70	2.31	2.46	1.95	1.84	2.42	3.20	2.78	3.37
Pacific sardine	0.04	0.05	0.05	0.06	0.07	0.06	0.07	0.08	0.10	0.12
Rockfish	1.30	1.42	1.57	1.47	1.34	1.38	1.64	1.50	1.49	1.57
Sablefish	1.18	1.35	1.50	1.77	1.92	2.09	2.68	2.29	2.14	2.26
Salmon	2.58	4.44	4.50	4.16	NA	4.76	4.50	4.49	5.29	4.74
Sea urchins	0.54	0.48	0.49	0.64	0.64	0.66	0.71	0.73	0.76	0.77
Shrimp	1.47	3.52	2.02	1.89	1.52	1.09	1.05	1.17	0.98	1.19
Spiny lobster	7.93	9.15	10.44	10.80	11.24	15.91	17.27	15.69	18.11	19.16
Squid	0.26	0.25	0.27	0.31	0.28	0.25	0.25	0.30	0.32	0.32
Swordfish	2.90	2.27	2.58	2.03	2.15	2.70	2.46	2.36	2.30	2.45

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of California Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	3,158	399,310	176,688	248,046
	Private Boat	891	140,151	48,872	83,640
	Shore	1,743	244,352	86,110	143,229
Total Durable Expenditures		16,945	1,873,684	828,227	1,302,240
Total State Economic Impacts		22,737	2,657,497	1,139,897	1,777,155

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	43,192	170,457	Fishing Tackle	429,591
Private Boat	5,058	92,881	Other Equipment	213,697
Shore	4,088	168,477	Boat Expenses	682,634
Total	52,337	431,815	Vehicle Expenses	218,172
			Second Home Expenses	0
Total Durable Expenditures				1,544,093
Total State Trip and Durable Goods Expenditures				2,028,245

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	740	991	878	819	888	803	714	921	873	705
Non-Coastal	263	335	226	246	490	241	238	316	352	299
Out-of-State	79	109	65	83	71	69	93	86	95	132
Total Anglers	1,082	1,435	1,169	1,148	1,449	1,113	1,045	1,323	1,320	1,136

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	504	522	489	424	385	357	560	544	609	929
Private	902	896	768	640	676	655	682	799	797	803
Shore	3,216	3,802	3,072	3,100	3,599	2,993	3,046	4,227	4,113	2,669
Total Trips	4,622	5,220	4,329	4,164	4,660	4,005	4,288	5,570	5,519	4,401

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1,4</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Flatfishes	H	478	241	187	276	258	353	575	492	642	924
	R	465	471	292	313	241	231	176	249	411	303
Rockfishes & scorpionfishes	H	2,725	1,891	1,674	1,318	1,383	1,613	2,348	2,780	3,197	3,284
	R	1,058	668	456	402	605	494	483	839	977	919
Greenlings	H	125	104	69	48	64	38	88	118	144	194
	R	179	113	67	53	83	96	178	200	180	196
Salmon <sup>2</sup>	H	144	98	48	0	1	15	50	123	114	75
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpins	H	39	25	19	29	27	21	58	37	40	32
	R	87	74	58	78	50	46	86	77	144	48
Surfperches	H	694	913	610	581	501	387	766	892	782	873
	R	1,083	1,516	702	658	546	292	771	1,119	846	1,121
Albacore & other tunas	H	6	9	22	5	13	20	8	39	19	37
	R	2	3	7	0	13	2	6	36	36	26
Barracuda, bass & bonito <sup>3</sup>	H	1,015	668	537	434	412	373	435	371	215	453
	R	2,011	1,660	1,407	1,093	1,211	991	738	775	1,112	1,658
Mackerel	H	1,023	1,158	823	940	753	479	590	438	246	483
	R	1,872	3,287	1,209	1,765	1,267	1,272	1,050	806	656	1,260
Croakers	H	572	456	427	321	427	173	128	256	173	136
	R	618	553	631	272	362	340	98	231	257	181

<sup>1</sup> In this table, '0' = 0-999 fish and '1' = 1,000-1,499 thousand fish.

<sup>2</sup> Salmon harvest estimates exclude release mortality.

<sup>3</sup> This species may not be equivalent to species with similar names listed in the commercial tables.

<sup>4</sup> NA = not available.

**California's State Economy (% of national total)**

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	860,866 (11.5%)	13,382,470 (11.5%)	588.45 (13.1%)	930.65 (13.1%)	1,760.51 (13.5%)	0.73
2013	874,243 (11.7%)	13,401,863 (11.3%)	742.52 (13.2%)	1,160.08 (13.1%)	2,212.99 (13.3%)	0.6
%Change	1.5	0.1	20.7	19.8	20.4	-17.8

**Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	88	91	121	139	159	184	187	151	157
	Receipts	10,207	8,298	10,842	11,460	10,852	9,695	9,788	9,283	9,866
Seafood sales, retail	Firms	166	163	222	210	202	203	209	236	218
	Receipts	16,892	19,875	19,703	19,892	17,095	19,021	18,006	18,238	18,581

**Seafood Sales & Processing - Employer Establishments (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	48	47	49	45	47	48	48	41	44
	Employees	2,963	2,592	2,229	2,024	2,167	1,820	1,842	1,668	1,871
	Payroll	92,642	78,065	75,886	65,215	69,529	62,480	60,411	52,977	57,603
Seafood sales, wholesale	Establishments	258	252	300	278	289	314	404	275	320
	Employees	3,925	4,063	4,429	3,321	3,183	3,223	3,505	3,441	3,671
	Payroll	134,576	144,758	159,672	132,139	128,813	137,810	149,302	173,959	181,698
Seafood sales, retail	Establishments	180	184	182	161	153	158	157	149	155
	Employees	999	1,031	1,004	932	976	985	1,088	1,043	1,119
	Payroll	18,832	19,900	21,224	20,585	21,785	22,718	25,168	24,221	26,702

**Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	26	22	29	28	30	25	21	22	24
	Employees	1,346	ds	ds	ds	ds	554	395	ds	ds
	Payroll	129,262	ds	ds	ds	ds	30,431	24,708	ds	ds
Deep sea freight transportation	Establishments	54	54	51	43	41	54	51	45	34
	Employees	ds	957	1,643	ds	ds	2,562	2,464	2,431	2,073
	Payroll	ds	84,199	116,628	ds	ds	236,235	256,962	236,423	218,054
Deep sea passenger transportation	Establishments	15	16	13	5	5	3	2	2	4
	Employees	ds	1,552	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	72,119	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	263	268	276	277	276	270	269	251	250
	Employees	2,426	2,457	2,680	2,652	2,514	2,390	2,401	2,237	2,199
	Payroll	71,318	74,778	80,216	85,315	78,890	80,631	82,958	71,777	72,737
Marine cargo handling	Establishments	54	52	56	61	62	63	71	38	64
	Employees	19,303	20,975	22,395	22,086	17,428	18,449	18,812	18,759	ds
	Payroll	1,273,698	1,448,623	1,484,308	1,453,281	1,211,572	1,273,268	1,333,805	1,351,874	ds
Navigational services to shipping	Establishments	37	36	39	40	39	41	45	35	36
	Employees	ds	817	858	815	804	765	760	800	805
	Payroll	ds	63,893	63,610	65,225	61,720	58,899	62,065	61,166	67,665
Port & harbor operations	Establishments	20	20	18	17	19	21	19	59	31
	Employees	ds	582	443	256	345	435	508	ds	651
	Payroll	ds	32,523	30,001	23,316	26,889	37,560	41,688	ds	52,401
Ship & boat building	Establishments	141	132	136	136	123	117	108	120	113
	Employees	10,132	9,801	9,250	11,630	10,483	9,720	9,165	12,681	12,651
	Payroll	410,446	453,255	433,846	477,300	460,239	448,338	434,449	544,819	537,438

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.



# Tables | Oregon



**2014 Economic Impacts of the Oregon Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	20,051	1,404,355	469,255	665,609	16,619	852,810	356,155	474,845
Commercial Harvesters	5,616	295,216	125,258	173,485	5,616	295,216	125,258	173,485
Seafood Processors & Dealers	1,846	156,388	60,062	78,475	1,695	143,565	55,138	72,041
Importers	1,629	448,198	71,832	136,630	-	-	-	-
Seafood Wholesalers & Distributors	750	89,526	30,370	40,734	462	55,134	18,703	25,086
Retail	10,208	415,027	181,732	236,284	8,846	358,895	157,056	204,233

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	88,196	106,093	97,298	103,042	106,959	106,378	148,354	128,222	179,215	157,912
Finfish & Other	53,192	46,326	47,589	56,912	52,749	58,730	76,718	72,327	81,445	78,247
Shellfish	35,005	59,767	49,709	46,130	54,210	47,648	71,636	55,895	97,770	79,665
<b>Key Species</b>										
Albacore tuna	8,815	8,067	9,468	10,666	10,191	12,425	18,766	15,168	16,085	11,028
Crab	26,603	53,810	38,208	29,168	42,413	32,757	44,696	29,189	71,208	47,991
Flatfish	7,281	7,547	7,930	9,163	8,468	6,861	6,780	7,315	9,854	8,651
Hake (whiting)	7,107	7,974	6,501	6,830	3,783	5,414	16,518	14,611	20,405	18,274
Oysters	1,232	1,163	1,847	2,748	4,506	3,317	1,869	1,661	1,798	1,774
Pacific sardine	6,199	3,743	4,551	5,665	5,291	5,252	3,192	8,979	6,299	3,522
Rockfish	1,387	1,564	2,002	2,610	2,500	2,520	2,473	2,661	3,023	3,245
Sablefish	8,657	9,787	9,494	13,737	15,919	15,069	17,351	11,530	7,595	8,076
Salmon	10,437	4,940	4,647	4,166	3,546	7,698	6,737	6,950	12,422	20,131
Shrimp	6,901	4,494	9,365	13,937	6,813	11,006	24,607	24,685	24,153	29,326

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	312,636	282,846	253,543	195,688	199,458	201,974	274,533	296,091	339,589	291,623
Finfish & Other	278,646	236,998	216,134	155,837	154,147	153,588	208,445	237,821	265,454	227,339
Shellfish	33,990	45,848	37,410	39,851	45,311	48,386	66,088	58,270	74,136	64,284
<b>Key Species</b>										
Albacore tuna	8,087	8,534	10,468	8,876	10,082	10,703	9,682	9,938	10,209	8,777
Crab	17,734	33,291	17,007	13,875	21,848	15,817	17,240	8,681	26,016	11,907
Flatfish	16,910	16,385	19,697	23,842	26,047	22,226	15,958	15,322	18,965	15,955
Hake (whiting)	135,503	122,804	81,481	55,511	53,466	57,017	142,092	102,651	160,098	161,589
Oysters	308	255	197	162	1,127	829	467	415	449	443
Pacific sardine	99,450	74,669	90,037	49,298	45,902	44,743	23,479	91,459	57,022	16,938
Rockfish	2,007	1,967	2,905	3,820	4,207	4,533	3,819	3,918	4,745	5,293
Sablefish	5,834	5,838	5,349	6,514	7,219	6,269	5,074	4,739	3,840	3,293
Salmon	4,666	1,810	1,370	1,860	2,311	2,765	2,386	1,918	3,505	6,383
Shrimp	15,784	12,128	19,990	25,400	22,019	31,429	48,198	49,009	47,472	51,728

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Albacore tuna	1.09	0.95	0.90	1.20	1.01	1.16	1.94	1.53	1.58	1.26
Crab	1.50	1.62	2.25	2.10	1.94	2.07	2.59	3.36	2.74	4.03
Flatfish	0.43	0.46	0.40	0.38	0.33	0.31	0.42	0.48	0.52	0.54
Hake (whiting)	0.05	0.06	0.08	0.12	0.07	0.09	0.12	0.14	0.13	0.11
Oysters	4.00	4.56	9.40	16.96	4.00	4.00	4.00	4.00	4.00	4.00
Pacific sardine	0.06	0.05	0.05	0.11	0.12	0.12	0.14	0.10	0.11	0.21
Rockfish	0.69	0.80	0.69	0.68	0.59	0.56	0.65	0.68	0.64	0.61
Sablefish	1.48	1.68	1.78	2.11	2.21	2.40	3.42	2.43	1.98	2.45
Salmon	2.24	2.73	3.39	2.24	1.53	2.78	2.82	3.62	3.54	3.15
Shrimp	0.44	0.37	0.47	0.55	0.31	0.35	0.51	0.50	0.51	0.57

**2014 Economic Impacts of Oregon Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	255	23,975	9,869	13,438
	Private Boat	465	44,970	18,292	27,557
	Shore	140	13,325	5,289	7,979
Total Durable Expenditures		2,473	215,723	109,932	154,361
Total State Economic Impacts		3,333	297,993	143,382	203,335

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	725	13,495	Fishing Tackle	47,888
Private Boat	2,901	37,037	Other Equipment	26,690
Shore	1,141	10,209	Boat Expenses	80,379
Total	4,767	60,741	Vehicle Expenses	64,812
			Second Home Expenses	4,116
			Total Durable Expenditures	223,884
Total State Trip and Durable Goods Expenditures				289,392

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	87	82	86	79	85	82	81	84	89	91
Non-Coastal	123	125	130	120	128	124	122	128	133	136
Out-of-State	14	15	15	14	15	14	14	15	16	16
Total Anglers	224	222	231	213	228	220	217	227	238	243

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	58	56	61	48	56	51	52	57	64	67
Private	382	373	399	353	396	378	370	389	414	431
Shore	233	233	233	233	233	233	233	233	233	233
Total Trips	673	662	693	634	685	662	655	679	711	731

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1,3</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Baitfishes	H	220	220	220	220	220	223	221	220	220	221
	R	124	124	124	124	124	125	125	125	125	125
Flatfishes	H	21	21	22	21	17	14	15	17	18	15
	R	7	7	6	8	9	5	5	6	6	5
Greenlings	H	104	97	95	92	90	90	97	111	132	114
	R	79	74	67	69	72	79	85	83	87	73
Rockfishes	H	400	331	321	307	363	373	290	320	402	411
	R	58	40	38	47	51	64	53	50	66	73
Salmon <sup>2</sup>	H	42	16	68	14	91	23	24	35	45	118
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpins	H	16	14	15	16	16	16	16	15	14	12
	R	60	57	59	59	59	61	61	61	63	60
Sturgeon	H	12	12	12	12	12	12	12	12	12	12
	R	24	24	24	24	24	25	25	25	25	25
Surfperches	H	118	118	118	118	118	118	118	118	118	118
	R	39	39	39	39	39	39	39	39	39	39
Albacore tuna	H	5	12	59	24	43	38	29	63	22	48
	R	0	0	0	0	0	0	0	0	0	0

<sup>1</sup> In this table, '0' = 0-999 fish.<sup>2</sup> Salmon estimates exclude release mortality.<sup>3</sup> NA = not available.

**Oregon's State Economy (% of national total)**

	Establishments	Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	108,571 (1.4%)	1,409,576 (1.2%)	50.02 (1.1%)	80.62 (1.1%)	147.58 (1.1%)	2.87
2013	108,527 (1.4%)	1,396,563 (1.2%)	61.06 (1.1%)	100.37 (1.1%)	204.87 (1.2%)	4.07
%Change	0.0	-0.9	18.1	19.7	28.0	41.8

**Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	9	7	ds	19	15	15	16	14	11
	Receipts	309	54	ds	957	466	510	467	346	319
Seafood sales, retail	Firms	7	11	11	16	12	15	16	11	ds
	Receipts	985	914	1,210	2,101	1,140	1,907	1,896	1,600	ds

**Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	20	21	22	23	20	21	22	18	19
	Employees	762	896	819	850	812	806	805	934	907
	Payroll	19,022	25,881	27,394	27,616	26,202	27,007	32,438	31,970	37,265
Seafood sales, wholesale	Establishments	23	16	18	18	19	22	27	21	19
	Employees	0	0	0	0	0	0	0	180	189
	Payroll	0	0	0	0	0	0	0	7,602	8,065
Seafood sales, retail	Establishments	24	22	23	21	23	21	20	18	20
	Employees	204	306	171	178	151	162	163	126	147
	Payroll	3,464	3,294	3,185	3,370	3,515	3,651	3,613	2,851	4,238

**Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	9	9	13	8	9	8	8	8	7
	Employees	ds	ds	476	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	25,206	ds	ds	ds	ds	ds	ds
Deep sea freight transportation	Establishments	6	6	5	4	3	3	3	3	3
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	0	0	2	0	0	0	0	0	0
	Employees	NA	NA	ds	NA	NA	NA	NA	NA	NA
	Payroll	NA	NA	ds	NA	NA	NA	NA	NA	NA
Marinas	Establishments	40	37	38	37	33	30	33	32	34
	Employees	113	ds	138	106	109	102	102	119	104
	Payroll	3,550	ds	3,754	2,178	2,602	2,290	2,382	3,034	3,148
Marine cargo handling	Establishments	8	9	9	13	13	12	13	5	8
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Navigational services to shipping	Establishments	21	20	17	20	17	18	18	20	15
	Employees	ds	ds	183	200	189	144	152	176	81
	Payroll	ds	ds	11,331	11,808	10,154	9,577	9,592	12,219	6,534
Port & harbor operations	Establishments	0	0	2	1	1	3	3	10	5
	Employees	NA	NA	ds	ds	ds	ds	ds	90	ds
	Payroll	NA	NA	ds	ds	ds	ds	ds	6,512	ds
Ship & boat building	Establishments	43	41	40	41	35	34	34	33	32
	Employees	1,298	1,230	1,441	1,692	1,886	980	1,179	1,504	1,406
	Payroll	45,183	43,416	47,950	74,583	90,446	42,004	55,068	77,718	79,913

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.



# Tables | Washington



## Washington | Commercial Fisheries

### 2014 Economic Impacts of the Washington Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	63,382	7,330,457	2,015,266	3,041,830	27,467	1,764,743	730,773	988,672
Commercial Harvesters	7,941	648,782	277,742	390,461	7,941	648,782	277,742	390,461
Seafood Processors & Dealers	15,720	1,489,810	559,551	740,480	3,020	286,201	107,493	142,251
Importers	13,800	3,796,022	608,385	1,157,194	-	-	-	-
Seafood Wholesalers & Distributors	2,608	334,095	111,935	152,717	967	123,943	41,526	56,655
Retail	23,313	1,061,747	457,653	600,978	15,539	705,817	304,012	399,306

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	193,317	217,030	216,119	232,841	227,773	255,332	329,785	275,585	365,450	326,248
Finfish & Other	50,145	68,201	59,386	68,213	61,115	81,902	98,627	91,409	98,385	88,178
Shellfish	143,172	148,829	156,733	164,628	166,658	173,430	231,159	184,177	267,066	238,070
<b>Key Species</b>										
Clams	48,503	55,786	56,428	64,141	72,646	73,625	88,739	69,412	84,398	81,250
Crab	50,872	43,464	54,302	53,712	48,944	57,070	83,627	59,485	86,510	80,445
Hake (Whiting)	4,937	7,296	7,121	7,249	2,334	4,105	7,183	5,882	7,452	5,431
Halibut	6,512	8,303	8,842	7,525	4,879	5,764	6,740	6,122	4,929	6,984
Mussels	3,729	6,564	3,820	5,293	4,851	4,318	4,740	6,065	9,230	6,830
Oysters	33,697	38,302	37,437	34,794	34,993	30,370	43,021	37,576	75,744	47,234
Sablefish	7,395	8,307	6,608	7,312	8,796	9,402	12,378	7,578	4,902	7,194
Salmon	14,319	24,586	22,026	23,376	22,003	40,622	42,434	28,398	42,375	38,998
Shrimp	4,335	3,602	3,746	5,380	4,139	5,677	7,140	6,986	8,664	19,701
Tuna, albacore	10,643	15,176	10,439	17,225	16,390	14,575	22,253	28,440	24,745	21,177

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	213,502	241,606	194,449	173,176	163,937	189,486	210,282	213,578	273,796	191,142
Finfish & Other	156,902	191,717	151,762	128,208	120,452	142,608	158,113	173,506	206,511	125,566
Shellfish	56,600	49,889	42,687	44,968	43,485	46,878	52,169	40,072	67,285	65,576
<b>Key Species</b>										
Clams	3,621	4,617	3,363	4,070	4,266	3,876	4,023	3,664	3,975	4,305
Crab	32,086	24,619	22,487	21,355	20,651	22,500	27,072	16,590	28,043	19,322
Hake (Whiting)	93,654	120,058	91,272	67,159	36,378	58,900	73,494	38,524	58,696	49,654
Halibut	1,948	2,451	2,428	2,055	1,731	1,371	1,301	1,295	1,065	1,284
Mussels	504	774	475	593	568	589	547	559	731	579
Oysters	12,190	12,306	11,189	10,258	9,386	8,650	9,389	8,143	19,587	9,231
Sablefish	4,240	4,259	3,035	2,954	3,514	3,277	3,410	2,916	2,003	2,335
Salmon	17,926	26,570	21,938	17,641	31,821	28,086	38,706	19,839	49,049	28,140
Shrimp	7,279	6,926	4,455	7,355	7,775	10,153	10,193	10,009	14,259	31,441
Tuna, albacore	10,505	19,133	13,129	14,801	16,112	13,148	13,209	19,275	17,552	18,039

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Clams	13.40	12.08	16.78	15.76	17.03	19.00	22.06	18.95	21.23	18.87
Crab	1.59	1.77	2.41	2.52	2.37	2.54	3.09	3.59	3.08	4.16
Hake (Whiting)	0.05	0.06	0.08	0.11	0.06	0.07	0.10	0.15	0.13	0.11
Halibut	3.34	3.39	3.64	3.66	2.82	4.20	5.18	4.73	4.63	5.44
Mussels	7.40	8.48	8.05	8.93	8.54	7.33	8.66	10.85	12.62	11.79
Oysters	2.76	3.11	3.35	3.39	3.73	3.51	4.58	4.61	3.87	5.12
Sablefish	1.74	1.95	2.18	2.48	2.50	2.87	3.63	2.60	2.45	3.08
Salmon	0.80	0.93	1.00	1.33	0.69	1.45	1.10	1.43	0.86	1.39
Shrimp	0.60	0.52	0.84	0.73	0.53	0.56	0.70	0.70	0.61	0.63
Tuna, albacore	1.01	0.79	0.80	1.16	1.02	1.11	1.68	1.48	1.41	1.17

**2014 Economic Impacts of Washington Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	372	48,497	21,452	31,024
	Private Boat	792	117,045	37,838	69,818
	Shore	205	26,899	9,075	16,078
Total Durable Expenditures		4,811	497,984	219,552	360,641
Total State Economic Impacts		6,180	690,425	287,917	477,561

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	4,965	23,868	Fishing Tackle	68,833
Private Boat	2,644	90,323	Other Equipment	34,556
Shore	718	21,098	Boat Expenses	358,756
Total	8,327	135,290	Vehicle Expenses	32,727
			Second Home Expenses	0
			Total Durable Expenditures	494,871
Total State Trip and Durable Goods Expenditures				638,488

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	201	184	220	167	163	162	274	176	189	231
Non-Coastal	23	21	23	19	20	19	30	24	26	24
Out-of-State	18	17	19	15	16	15	17	19	20	19
Total Anglers	242	222	262	201	199	196	321	219	235	274

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	62	57	55	42	51	47	42	46	52	86
Private	565	492	661	428	399	399	607	618	701	701
Shore	513	513	513	513	513	513	513	513	513	513
Total Trips	1,140	1,062	1,229	983	963	959	1,162	1,177	1,266	1,300

**Harvest (H) & Release (R) of Key Species Species Groups (thousands of fish)<sup>1,4</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Flatfishes	H	61	63	51	47	54	50	51	52	53	55
	R	41	42	40	40	47	41	41	41	42	42
Rockfishes <sup>2</sup>	H	307	282	260	216	245	208	235	259	275	304
	R	33	23	19	16	33	26	22	22	25	30
Greenlings	H	39	33	28	29	34	30	42	43	40	42
	R	25	22	19	19	39	22	29	23	16	15
Sculpins	H	17	16	15	15	16	16	17	16	16	16
	R	91	91	91	91	91	91	91	91	91	91
Sturgeon <sup>3</sup>	H	8	7	8	8	9	NA	NA	NA	NA	NA
	R	30	21	18	12	17	NA	NA	NA	NA	NA
Surfperches	H	133	133	133	133	133	133	133	134	134	134
	R	120	120	120	120	121	121	121	121	121	121
Albacore tuna	H	12	24	25	22	24	32	16	51	55	75
	R	0	0	0	0	0	0	0	0	17	0
Smelt & herring	H	2,486	2,486	2,486	2,486	2,486	2,486	2,486	2,486	2,486	2,486
	R	126	126	126	126	126	126	126	126	126	126
Sharks & Skates	H	1	1	0	1	1	0	0	0	0	0
	R	12	14	9	12	10	3	1	3	2	4
Salmon <sup>3</sup>	H	246	109	334	90	716	124	310	309	390	NA
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

<sup>2</sup> This species may not be equivalent to species with similar names listed in the commercial tables

<sup>3</sup> Data on sturgeon harvest not available for 2010-2013; Salmon harvest estimates exclude release mortality.

<sup>4</sup> NA = not available.

## Washington | Marine Economy

### Washington's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	175,658 (2.3%)	2,316,296 (2%)	94.93 (2.1%)	156.15 (2.2%)	296.73 (2.3%)	14
2013	176,815 (2.4%)	2,444,098 (2.1%)	130.76 (2.3%)	214.39 (2.4%)	407.16 (2.4%)	12.13
%Change	0.7	5.2	27.4	27.2	27.1	-13.4

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	54	53	63	44	47	39	37	42	42
	Receipts	5,568	4,149	4,698	5,167	5,022	4,228	3,859	4,377	4,094
Seafood sales, retail	Firms	31	29	32	33	42	30	34	42	41
	Receipts	1,836	1,727	1,458	1,807	2,462	1,273	2,370	1,871	3,017

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	98	96	98	96	86	93	90	90	86
	Employees	5,743	5,705	5,249	5,893	4,860	5,296	5,387	6,118	6,224
	Payroll	239,962	255,129	275,662	306,213	232,543	254,592	293,112	326,827	315,379
Seafood sales, wholesale	Establishments	126	115	127	107	108	105	107	101	116
	Employees	1,094	1,015	1,086	996	1,103	970	911	1,085	999
	Payroll	42,852	42,934	46,085	48,251	48,044	45,871	45,543	51,508	49,683
Seafood sales, retail	Establishments	47	49	50	44	43	47	44	40	35
	Employees	291	292	244	247	239	282	253	256	266
	Payroll	9,322	8,998	8,001	7,947	8,324	9,098	7,786	8,210	9,069

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	41	43	37	24	24	30	28	28	35
	Employees	1,672	2,353	1,903	2,222	2,245	1,731	1,684	1,557	2,186
	Payroll	122,000	145,144	136,543	168,832	168,783	130,398	132,068	126,401	170,003
Deep sea freight transportation	Establishments	24	23	30	21	25	20	14	12	8
	Employees	378	197	227	263	305	209	ds	ds	200
	Payroll	22,655	14,390	19,692	24,843	28,897	24,711	ds	14,014	14,892
Deep sea passenger transportation	Establishments	3	3	3	4	5	4	2	2	5
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	96	103	114	116	110	117	114	100	110
	Employees	442	466	485	573	570	560	517	479	529
	Payroll	13,556	14,269	15,623	18,931	18,811	18,783	18,364	18,038	18,914
Marine cargo handling	Establishments	30	29	28	25	27	26	32	13	30
	Employees	4,459	3,764	4,913	4,821	2,953	ds	3,910	ds	ds
	Payroll	318,873	303,375	334,601	334,193	239,490	ds	323,286	ds	ds
Navigational services to shipping	Establishments	53	56	61	76	69	79	78	72	73
	Employees	841	942	950	1,213	1,168	1,225	1,207	ds	ds
	Payroll	60,034	72,120	72,912	100,542	102,934	102,766	94,781	ds	ds
Port & harbor operations	Establishments	6	5	6	11	11	9	9	48	28
	Employees	ds	53	129	111	118	74	75	1,509	181
	Payroll	ds	3,436	4,631	6,359	6,437	4,662	4,937	85,042	11,894
Ship & boat building	Establishments	154	164	167	169	162	152	135	141	138
	Employees	7,154	7,669	7,742	8,067	6,710	5,406	5,232	5,294	5,387
	Payroll	307,735	313,230	354,084	402,253	312,240	284,759	276,402	290,400	273,825

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.



# Western Pacific Region

- Hawai'i

Fish auction, Honolulu, Hawai'i  
(photo credit: Min-Yang Lee)



### MANAGEMENT CONTEXT

The U.S. Pacific Islands Region includes the State of Hawai'i, the Territories of American Samoa, Guam, the Commonwealth of the Northern Mariana Islands (CNMI), and the Pacific Remote Island Areas. Federal fisheries in this region are managed by the Western Pacific Fishery Management Council (WPFMC) and NOAA Fisheries under five fishery ecosystem plans (FEPs). These plans focus on place-based rather than species- or fishery-based management.

#### Western Pacific Fishery Ecosystem Plans

1. American Samoa
2. Hawai'i
3. Mariana Archipelago (Guam and the CNMI)
4. Pacific Remote Island Areas
5. Western Pacific Pelagics

Because fishery data are limited in most of these areas, information for the Hawai'i and Western Pacific Pelagics fisheries only is reported here. No catch share programs operate in this region.

**Hawai'i FEP:** NOAA Fisheries, WPFMC and the State of Hawai'i collaborate to manage fisheries across the Hawai'i Archipelago. The major fisheries in Hawai'i include trolling for pelagic species such as tuna, marlin, wahoo and mahimahi; deepwater hook-and-line bottom fishing; and various forms of net fishing that target nearshore pelagic and reef fish species. Under this FEP, the Hancock Seamount groundfish complex is currently overfished. This fishery has been closed since 1986.

**Western Pacific Pelagics FEP:** The management species covered under this FEP include tunas, billfishes, sharks, squids, and an assortment of other species. These species include mahimahi, wahoo, moonfish and pomfret caught by the Hawai'i longline fishery and smaller boats that utilize diverse gears including trolling, handline and traditional fishing methods. Of these species, bigeye tuna, Pacific bluefin tuna and the Central Western Pacific striped marlin stock are considered subject to overfishing. The Central Western Pacific striped marlin stock is also listed as overfished.

In addition to management by the WPFMC and NOAA Fisheries, pelagic fish, such as bigeye and yellowfin tunas, are managed by two regional fishery management organizations (RFMOs). The Western and Central Pacific Fishery Commission have authority to manage pelagic fisheries in the Western and Central Pacific Ocean, while the Inter-American Tropical Tuna Commission (IATTC) manages pelagic fisheries in the Eastern Pacific Ocean. Fish species and fisheries under the purview of both RFMOs migrate across national boundaries and between RFMO areas, requiring coordinated management. Since 2009, the annual bigeye tuna catch limit has been recommended by the WCPFC and implemented by NOAA Fisheries for the U.S. longline fleet in the Western and Central Pacific. The IATTC establishes the harvest limit for bigeye tuna for U.S. longline vessels longer than 24 meters in the Eastern Tropical Pacific.

### POLICY UPDATES

On July 28, 2015, NOAA Fisheries announced that the U.S. pelagic longline vessels fishing in the Western and Central Pacific Ocean (WCPO) for bigeye tuna would no longer be able to retain and land bigeye tuna from August 5, 2015 through the end of the year. This restriction came about because the fishery reached the U.S. longline bigeye catch limit of 3,502 metric tons established by the WCPFC in 2014. The pelagic longline fleet based in Hawai'i accounts for most of the U.S. longline catch of bigeye tuna in the WCPO. Longline limits are among a suite of measures adopted by the WCPFC for the conservation and management of WCPO bigeye. Over-exploitation of bigeye has developed during the past 30 years with increasing catches of juveniles by purse-seine vessels as well as the catch of adults by longline vessels.

### COMMERCIAL FISHERIES

Fishermen in Hawai'i earned \$101 million from their commercial harvest in 2014 and landed more than 33 million pounds of finfish and shellfish. Tunas, a high-value species group, made up 73 percent of the landings revenue and 61 percent of the landed weight.

### Economic Impacts

In this report<sup>1</sup>, the U.S. seafood industry includes the commercial harvest sector; seafood processors and dealers; seafood wholesalers and distributors; import-

ers; and seafood retailers.<sup>1</sup> In 2014, Hawai'i's seafood industry generated \$743 million in sales impacts, \$231 million in income impacts, \$336 million in value-added impacts, and approximately 10,000 full and part-time jobs. The retail sector contributed the most to job impacts (3,924 jobs), income impacts (\$86 million), and value-added impacts (\$112 million), while importers contributed the most to sales (\$273 million). The commercial harvest sector generated 3,551 jobs, \$176 million in sales, \$64 million in income, and \$93 million in value-added impacts.

#### Key Western Pacific Commercial Species

- Lobsters
- Mahimahi
- Marlin
- Moonfish
- Pomfret
- Scad
- Snappers
- Swordfish
- Tunas
- Wahoo

#### Landings Revenue

In 2014, landings revenue for finfish and shellfish totaled \$101 million, a 43 percent increase (21% in real terms) from total revenue earned in 2005. Landings revenue trends for this same period can be understood only after considering the growth of the tuna fishery. Hawai'i accounted for 54 percent of all tuna landings revenue in the U.S. in 2014, earning \$74 million for its catch. From 2005 to 2014, tuna revenue increased \$28 million, increasing 60 percent (36% in real terms). Bigeye tuna dominated Hawai'i's landings revenue in 2014 at \$61 million, an increase of \$25 million from 2005. Bigeye tuna accounted for at least 50 percent of Hawai'i's landings revenue each year from 2005 to 2014.

#### Landings

In 2014, Hawaiian commercial fishermen landed 33 million pounds of finfish and shellfish, a 19 percent increase from 2005 and a 3 percent increase from 2013. Finfish and other catch accounted for nearly 100 percent of total 2014 landings. Tunas contributed more to the Western Pacific's total landings than any other species or group with 20 million pounds landed in 2014. The largest landings increases between 2005 and 2014 were for pomfret (92%), moonfish (85%) and wahoo (29%). Swordfish (-28%), snappers (-15%) and scad (-11%) had the largest landings declines during this period.

#### Commercial Fisheries Facts

##### Landings revenue

- Between 2005 and 2014, the annual landings revenue from the key species or species groups averaged \$84 million, which accounted for 97 percent of total landings revenue generated in Hawai'i.
- Tunas contributed more than any other species or species group (73%), averaging \$62 million in landings revenue from 2005 to 2014.

##### Landings

- Key species or species groups contributed an average of 94 percent annually to total landings between 2005 and 2014.
- Tunas contributed the most to landings in the Region (64%), averaging 18 million pounds from 2005 to 2014.

##### Prices

- Lobsters had the highest average annual ex-vessel price per pound (\$11.25) over the time period, followed by snappers (\$5.04), and tunas (\$3.42).
- Marlin had the lowest average annual ex-vessel price per pound (\$1.36) over the time period, followed by moonfish (\$1.65), and swordfish (\$2.27).

#### Prices

Overall, the 2014 ex-vessel price for five of the key species or species groups were above their 10-year average annual price (four species in real terms). Prices for scad (52%), snappers (31%) and tunas (27%) increased the most from 2005 to 2014. Species or species groups with price declines from 2005 to 2014 included moonfish (-17%), pomfret (-11%) and lobsters (-7%).

#### RECREATIONAL FISHERIES

Recreational anglers who fished in the state of Hawai'i took 1.4 million fishing trips in 2014. Of these trips, 76 percent were shore-based trips. Scads (bigeye and mackerel) was the most caught species group with approximately 898,000 fish caught in 2014. Note that data on angler participation in Hawai'i is unavailable from 2007 through 2014.

#### Economic Impacts and Expenditures

The contribution of recreational fishing activities to the state economy are reported in terms of economic impacts (employment, sales, income and value-added impacts) and expenditures on fishing trips in the state

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).

of Hawai'i.<sup>2</sup> Employment impacts totaled 1,061 full- and part-time jobs generated by recreational fishing activities in the state. Sales impacts from recreational fishing trips totaled \$127 million; income impacts totaled \$44 million; and value-added impacts totaled \$70 million.

Durable goods and fishing-related equipment expenditures by recreational anglers were not available for Hawai'i for 2014. Expenditures for fishing trips across Hawai'i in 2014 totaled \$103.2 million. The greatest trip expenditures were by residents in the shore sector (\$42.1 million).

#### Key Western Pacific Recreational Species

- Blue marlin
- Dolphinfinh
- Goatfishes
- Trevallys and other jacks
- Bigeye and mackerel scad
- Skipjack tuna
- Smallmouth bonefish
- Snappers
- Wahoo
- Yellowfin tuna

#### Fishing Trips

Anglers who fished in Hawai'i took approximately 1.4 million fishing trips in 2014, a 44 percent decrease from the total fishing trips taken in 2005. From 2013 to 2014, there was a 9 percent decrease in the number of trips taken. Information on for-hire fishing trips is not available.

#### Recreational Fishing Facts

##### Fishing trips

- In the Western Pacific, an average of 2.1 million fishing trips were taken annually from 2005 to 2014.
- Shore-based fishing trips accounted for 79 percent of these fishing trips.

##### Harvest and release

- The bigeye and mackerel scad species group was the most commonly caught key species or species group, averaging 804,400 fish caught over the 10-year period.
- All 10 commonly caught key species or species groups were harvested more of 10 than released during this period.

#### Harvest and Release

Of Hawai'i's key species and species groups, scads (bigeye and mackerel, 898,000 fish), goatfishes (480,000 fish) and jacks (trevallys and other jacks, 413,000 fish) were most frequently caught by recreational fishermen.

Of Hawai'i's key species or groups, the following experienced the largest increases in catch totals from 2005 to 2014: smallmouth bonefish (36%), goatfishes (28%) and scads (bigeye and mackerel, 21%). During the same period, the largest decreases were experienced by blue marlin (-89%), dolphinfinh (mahimahi, -49%), and skipjack tuna (-34%).

Between 2013 and 2014, the largest year-over-year increase in catch occurred among jacks (trevallys and other jacks, 56%), smallmouth bonefish (53%), and yellowfin tuna (47%). Large percentage decreases in catch over the same period occurred among blue marlin (-50%) and skipjack tuna (-48%).

#### MARINE ECONOMY

Across the entire economy of Hawai'i<sup>3</sup>, 503,000 full- and part-time employees were employed by 32,000 establishments in 2013. Annual payroll totaled almost \$20 billion, employee compensation totaled about \$41 billion, and gross state product totaled \$75 billion. Hawai'i's level of commercial fishing-related employment continues to be well above the national baseline.<sup>4</sup>

The Commercial Fishing Location Quotient (CFLQ) measures the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>5</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CLFQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CLFQ is greater than 1, then more commercial fishing occurs in this state than the national average.

The (CFLQ) for Hawai'i was 4.44 in 2013. This figure suggests that the level of employment in commercial

<sup>2</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>).

<sup>3</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

<sup>4</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).



fishing-related industries in this state is approximately 4.44 times higher than the level of employment in this industry nationwide.

For this report, the marine economy, a subset of the regional economy, consists of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and non-employer firms (businesses that have no paid employees and are subject to federal income tax); and 2) transport, support and marine operations (employer establishments only). These sectors consist of several different marine-related industries. The following sections discuss the contribution of these industries to the national marine economy in terms of the number of establishments or firms, employees, and total annual payroll or receipts.

### Seafood Sales and Processing

From 2005 to 2013, the number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging in Hawai'i increased 220 percent to 16 firms. Annual receipts increased 101 percent to about \$821,000 (54% in real terms). Two employer establishments were engaged in seafood product preparation and packaging in 2013. Data on the number of employees and payroll was suppressed for confidentiality purposes for this sector in 2013.

Employer establishments in Hawai'i's wholesale seafood sales sector (32) remained unchanged from 2005 to 2013. The number of employees increased 12 percent to 542 in 2013. Annual payroll increased 32 percent to \$20 million (a 2% increase in real terms).

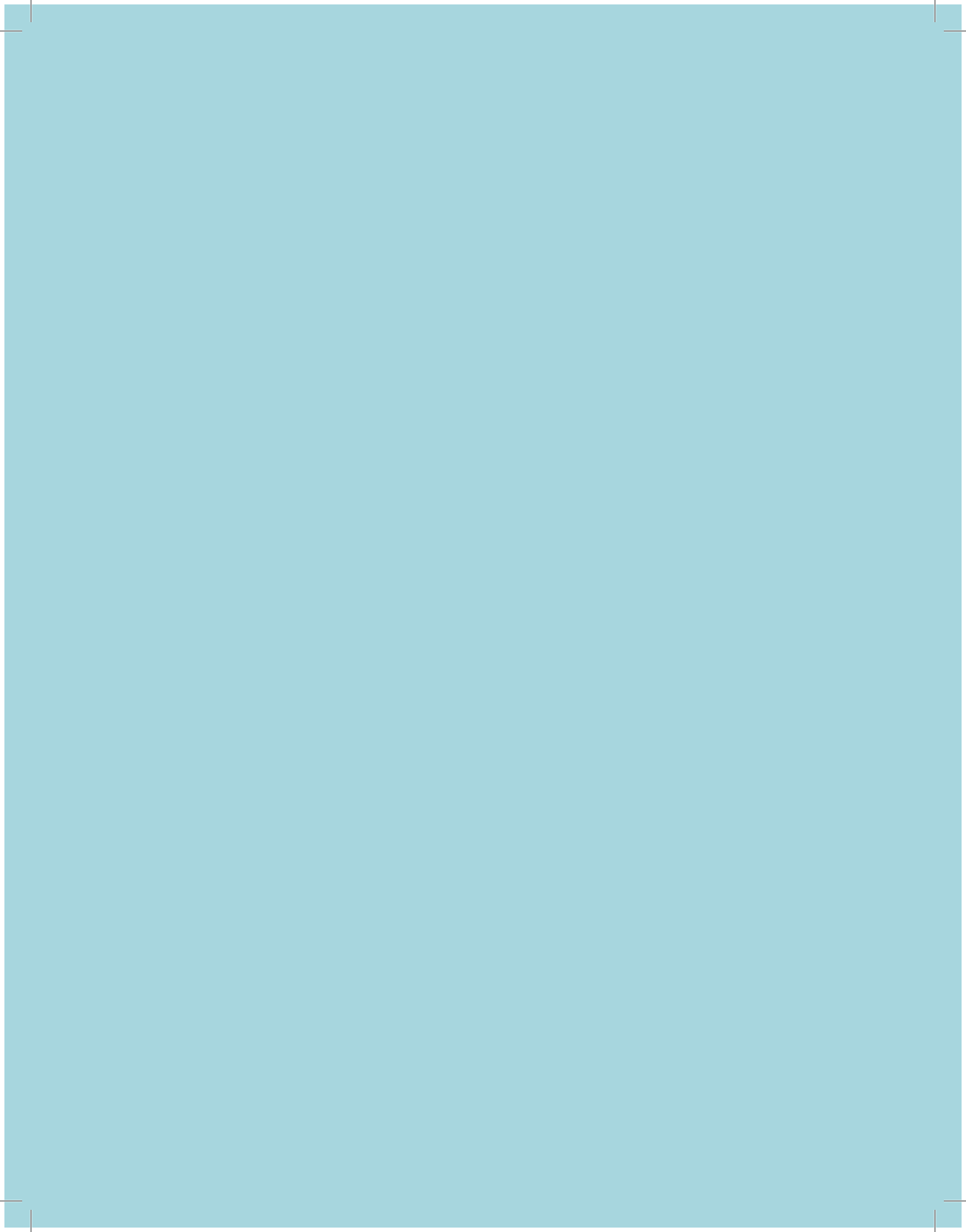
The number of non-employer firms in the seafood retail sales sector in Hawai'i increased 38 percent to 40 firms in 2013. Annual receipts increased 8 percent to about \$3.8 million in 2013 (a 17% decrease in real terms).

From 2005 to 2013, employer establishments in the seafood retail sales sector decreased 14 percent to 25; the number of employees decreased 2 percent to 318; and annual payroll increased 47 percent to \$7.4 million (a 13% increase in real terms).

### Transport, Support and Marine Operations

Data were largely suppressed for confidentiality purposes for the transport, support and marine operations sector in Hawai'i.

<sup>5</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).



# Tables | Hawai'i



**2014 Economic Impacts of the Hawai'i Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	9,546	743,204	230,799	335,792	7,498	402,595	159,473	216,591
Commercial Harvesters	3,551	176,340	64,353	92,505	3,551	176,340	64,353	92,505
Seafood Processors & Dealers	559	48,565	19,224	24,794	411	35,771	14,160	18,262
Importers	992	272,922	43,741	83,199	-	-	-	-
Seafood Wholesalers & Distributors	520	48,890	17,147	22,810	311	29,310	10,280	13,675
Retail	3,924	196,488	86,335	112,484	3,224	161,174	70,680	92,149

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	70,811	66,780	75,690	84,877	71,202	84,044	91,565	112,300	107,979	101,249
Finfish & Other	70,550	66,569	75,425	84,555	70,856	83,698	91,272	111,816	107,168	100,636
Shellfish	261	211	265	322	347	346	292	484	811	612
<b>Key Species</b>										
Lobsters	111	60	93	120	136	117	104	98	95	105
Mahimahi (dolphin)	3,595	3,630	3,483	3,174	2,853	3,303	4,314	5,309	4,130	4,412
Marlin	2,512	2,581	2,028	2,072	2,142	1,756	2,375	2,888	2,802	3,197
Moonfish (opah)	1,897	1,906	2,171	2,198	2,409	2,591	2,853	3,163	3,203	2,910
Pomfret	1,440	1,328	1,461	1,662	1,381	1,549	1,449	2,097	2,576	2,466
Scad	835	999	1,094	889	1,198	1,251	964	1,181	1,147	1,128
Snappers	1,993	1,750	1,690	1,715	1,860	1,681	1,415	1,738	2,003	2,223
Swordfish	7,778	5,237	7,730	7,177	7,336	7,303	6,669	6,693	4,493	5,405
Tunas	46,102	44,630	51,171	60,863	47,710	59,775	66,628	83,298	81,819	73,657
Wahoo	2,251	2,330	2,085	2,225	1,673	1,746	1,806	2,330	2,375	2,800

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	28,139	26,021	28,934	30,652	26,906	28,069	29,289	31,048	32,447	33,474
Finfish & Other	28,092	25,983	28,890	30,599	26,849	28,006	29,240	30,968	32,343	33,386
Shellfish	47	38	45	52	57	62	49	80	104	88
<b>Key Species</b>										
Lobsters	10	6	8	10	11	9	10	8	9	10
Mahimahi (dolphin)	1,439	1,337	1,388	1,250	1,287	1,518	1,423	1,746	1,515	1,689
Marlin	2,190	2,477	1,375	1,952	1,677	1,221	1,826	1,459	1,935	2,318
Moonfish (opah)	1,086	1,093	1,226	1,313	1,884	1,824	1,564	1,549	2,072	2,004
Pomfret	646	584	593	671	627	593	427	731	1,142	1,243
Scad	402	432	461	318	405	460	323	383	361	356
Snappers	434	378	381	378	391	342	269	308	357	369
Swordfish	3,446	2,602	3,643	3,835	3,881	3,153	2,592	2,381	1,674	2,480
Tunas	16,130	14,799	17,594	18,295	14,594	16,706	18,519	20,147	20,900	20,296
Wahoo	817	893	715	849	605	600	564	652	744	1,056

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Lobsters	10.99	9.63	11.84	12.14	12.37	12.36	10.39	11.84	10.71	10.21
Mahimahi (dolphin)	2.5	2.71	2.51	2.54	2.22	2.18	3.03	3.04	2.73	2.61
Marlin	1.15	1.04	1.47	1.06	1.28	1.44	1.3	1.98	1.45	1.38
Moonfish (opah)	1.75	1.74	1.77	1.67	1.28	1.42	1.82	2.04	1.55	1.45
Pomfret	2.23	2.27	2.46	2.48	2.2	2.61	3.39	2.87	2.25	1.98
Scad	2.08	2.31	2.37	2.8	2.95	2.72	2.98	3.08	3.18	3.17
Snappers	4.59	4.62	4.44	4.54	4.76	4.92	5.26	5.65	5.6	6.03
Swordfish	2.26	2.01	2.12	1.87	1.89	2.32	2.57	2.81	2.68	2.18
Tunas	2.86	3.02	2.91	3.33	3.27	3.58	3.6	4.13	3.91	3.63
Wahoo	2.75	2.61	2.92	2.62	2.77	2.91	3.2	3.57	3.19	2.65



**2014 Economic Impacts of Hawai'i Recreational Fishing Expenditures (thousands of dollars)<sup>1</sup>**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	365	43,479	18,605	27,438
	Private Boat	243	35,205	10,045	17,506
	Shore	453	48,756	15,631	25,077
Total Durable Expenditures		NA	NA	NA	NA
Total State Economic Impacts		1,061	127,440	44,281	70,021

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)<sup>1</sup>**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	26,366	2,126	Fishing Tackle	NA
Private Boat	425	31,873	Other Equipment	NA
Shore	252	42,108	Boat Expenses	NA
Total	27,043	76,107	Vehicle Expenses	NA
			Second Home Expenses	NA
			Total Durable Expenditures	NA
Total State Trip and Durable Goods Expenditures				103,150

**Recreational Anglers by Residential Area (thousands of anglers)<sup>2, 3</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	204	173								
Non-Coastal	0	0								
Out-of-State	166	224								
Total Anglers	370	397								

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Private	578	570	475	564	441	484	224	325	297	324
Shore	1,892	2,074	2,102	1,966	1,722	1,907	1,158	1,195	1,216	1,051
Total Trips	2,470	2,644	2,577	2,530	2,163	2,391	1,382	1,520	1,513	1,375

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>4</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue marlin	H	19	3	2	11	3	1	2	3	4	2
	R	0	0	1	0	0	0	0	0	0	0
Dolphinfish (mahimahi)	H	178	220	137	184	103	164	63	163	94	92
	R	1	0	0	0	0	0	0	0	0	0
Goatfishes <sup>5</sup>	H	366	783	267	458	686	235	141	149	826	458
	R	8	11	9	6	6	12	13	13	4	22
Jacks (trevallys and other jacks) <sup>6</sup>	H	251	209	169	197	122	139	98	108	139	151
	R	179	211	131	120	84	126	60	128	125	262
Scads (bigeye and mackerel)	H	726	811	1,089	402	1,102	841	662	608	889	898
	R	14	0	0	0	0	0	0	0	2	0
Skipjack tuna	H	302	201	228	568	230	288	125	197	380	199
	R	1	1	5	2	0	0	0	0	0	0
Smallmouth bonefish	H	25	64	19	50	36	55	13	27	23	29
	R	11	2	13	4	2	13	2	8	9	20
Snappers <sup>7</sup>	H	161	125	84	114	124	295	88	138	128	184
	R	57	35	38	7	19	25	3	13	8	2
Wahoo	H	54	62	57	78	61	40	16	31	36	43
	R	0	0	1	0	0	0	0	0	0	0
Yellowfin tuna	H	231	123	273	461	198	302	141	182	150	219
	R	10	1	2	0	1	1	0	0	0	1

<sup>1</sup> NA = not available.

<sup>2</sup> Participation (number of anglers) data are not available for 2007 through 2014.

<sup>3</sup> Data is not available because all Hawai'i residents are considered coastal county residents.

<sup>4</sup> In this table, '0' = 0 - 999 thousand fish and '1' = 1,000 - 1,499 thousand fish.

<sup>5</sup> Goatfishes include yellowstripe, yellowfin, pfulgers, bandtail, doublebar, diespot, whitesaddle, manybar, blue and 'Goatfish famil/genus'.

<sup>6</sup> Trevallys & other jacks includes bluefin trevally, giant trevally, bigeye trevally, black trevally, African pompano, greater amberjack, island jack, and other species in the jack family.

<sup>7</sup> Snappers include bluestip, blacktail, ruby, longtailed, pink, VonSiebolds, Bingham, green jobfish, ironjaw and smalltooth jobfish.

**Hawai'i's State Economy (% of national total)**

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	32,244 (0.4%)	490,682 (0.4%)	16.16 (0.4%)	32.10 (0.5%)	58.12 (0.4%)	4.91
2013	31,622 (0.4%)	502,530 (0.4%)	19.88 (0.4%)	40.95 (0.5%)	75.09 (0.5%)	4.44
% Change	-2.0	2.4	18.7	21.6	22.6	-9.6

**Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	5	11	10	9	7	11	14	14	16
	Receipts	409	1,011	1,023	1,020	712	741	866	965	821
Seafood sales, retail	Firms	29	31	41	37	35	37	39	42	40
	Receipts	3,487	3,627	4,353	4,394	3,666	4,124	3,558	4,086	3,764

**Seafood Sales & Processing - Employer Establishments (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	3	3	1	1	1	1	1	2	2
	Employees	0	0	0	0	0	0	0	0	0
	Payroll	0	0	0	0	0	0	0	0	0
Seafood sales, wholesale	Establishments	32	33	36	37	38	37	40	33	32
	Employees	485	462	550	695	538	531	538	483	542
	Payroll	15,163	16,786	18,932	20,665	19,347	19,290	19,416	19,413	20,039
Seafood sales, retail	Establishments	29	27	25	25	25	24	25	24	25
	Employees	326	315	393	173	158	177	187	303	318
	Payroll	5,007	5,564	7,209	3,674	3,559	3,533	3,521	6,493	7,366

**Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	13	13	11	5	5	2	2	5	5
	Employees	ds	543	557	478	475	ds	ds	431	ds
	Payroll	ds	36,941	36,635	34,544	34,367	ds	ds	34,538	ds
Deep sea freight transportation	Establishments	0	0	0	1	0	1	1	2	1
	Employees	NA	NA	NA	ds	NA	ds	ds	ds	ds
	Payroll	NA	NA	NA	ds	NA	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	2	2	1	1	1	1	1	1	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	10	9	11	9	10	13	13	9	11
	Employees	181	152	167	156	164	189	208	162	166
	Payroll	3,354	3,719	4,151	4,317	4,368	5,362	5,237	3,779	4,003
Marine cargo handling	Establishments	8	7	8	11	11	14	14	11	10
	Employees	694	ds	1,048	1,098	1,075	1,236	1,278	664	709
	Payroll	53,061	ds	87,770	89,104	87,833	109,059	109,134	54,309	61,651
Navigational services to shipping	Establishments	6	6	8	11	11	11	8	8	9
	Employees	ds	ds	ds	105	120	90	105	97	100
	Payroll	ds	ds	3,340	5,846	5,258	5,113	5,310	5,567	6,518
Port & harbor operations	Establishments	2	2	2	4	3	2	2	2	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	3,218	2,031	ds	ds	ds	ds
Ship & boat building	Establishments	16	14	13	14	13	15	15	18	18
	Employees	ds	545	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	23,134	ds	ds	ds	ds	ds	ds	ds

<sup>1</sup> The US Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

<sup>2</sup> NA = not applicable.

<sup>3</sup> ds = these data are suppressed.

# New England Region

- Connecticut
- Maine
- Massachusetts
- New Hampshire
- Rhode Island



Boats in a harbor, Stonington, Maine  
(photo credit: Capt. Albert Theberge [ret.])



### MANAGEMENT CONTEXT

The New England Region includes Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island. Federal fisheries in this region are managed by the New England Fishery Management Council (NEFMC) and NOAA Fisheries under nine fishery management plans (FMPs). Two of these FMPs, Monkfish and Spiny Dogfish, are developed in conjunction with the Mid-Atlantic Fisheries Management Council (MAFMC). The MAFMC is the lead Council for the Spiny Dogfish FMP; the NEFMC is the lead for the Monkfish FMP.

#### New England Regional FMPs

1. Northeast multi-species
2. Sea scallops
3. Monkfish (with the MAFMC)
4. Atlantic herring
5. Small mesh multi-species
6. Spiny dogfish (with the MAFMC)
7. Red crab
8. Northeast skate complex
9. Atlantic salmon

Twelve of the stocks or stock complexes covered in these FMPs were listed as overfished in 2014: Atlantic cod (two stocks), Atlantic halibut, Atlantic salmon, Atlantic wolf-fish, ocean pout, thorny skate, windowpane flounder, winter flounder, witch flounder and yellowtail flounder (two stocks). Eight stocks or stock complexes are currently subject to overfishing: Atlantic cod (two stocks), windowpane flounder, witch flounder, yellowtail flounder (two stocks), thorny skate and winter skate. Haddock was removed from the overfishing list in 2014.

### CATCH SHARE PROGRAMS

Two catch share programs operate in the New England Region: 1) Northeast Multi-species Sectors; and 2) Northeast General Category Atlantic Sea Scallop Individual Fishing Quota (IFQ) Program. Following is a description of these catch share programs and their performance.

**Northeast Multi-species Sectors:** This catch share program was developed between 2004 and 2006 and included two pilot sectors that operated with an allocation of Georges Bank cod. The program was expanded in 2010 to 17 sectors, and approximately 55 percent of

eligible limited-access permit holders joined a sector. At the same time, annual catch limits were implemented for the first time and sharply reduced the available quota for fishermen. The key performance indicators of this program show that compared with the Baseline period (the 3-year period prior to implementation), the following metrics decreased: 2013 quotas, landings, number of active vessels, and inflation-adjusted revenue for catch share species. On the other hand, inflation-adjusted revenue per vessel increased during this period.

**The Northeast General Category Atlantic Sea Scallop IFQ Program:** This catch share program began in 2010 with two primary objectives: 1) control capacity and mortality in the general category scallop fishery; and 2) allow for better and more timely integration of sea scallop assessment results in management. The key performance indicators of this program show that 2013 inflation-adjusted revenue and revenue per vessel increased. However, landings, quota and the number of active vessels decreased compared with the Baseline period.

### POLICY UPDATES

In June 2015, NOAA Fisheries announced a lobster trap transfer program that applies to Area 2 (Southern New England waters primarily off Rhode Island and Southern Massachusetts), the Outer Cape Cod Area, and Area 3 (offshore fishery from Maine to North Carolina). This program allows qualified vessels to buy and/or sell individual traps up to a specified cap in these areas, giving lobster permit holders more flexibility. Federal lobster permit holders from other areas may also “buy in” to these areas by purchasing traps through this program. The new trap allocations will be effective for the start of the 2016 fishing year on May 2, 2016.

### COMMERCIAL FISHERIES

In 2014, commercial fishermen in New England landed 643 million pounds of finfish and shellfish, earning \$1.2 billion in landings revenue. American lobster (\$564 million) and sea scallop (\$298 million) dominated landings revenue. These species commanded average region-wide ex-vessel prices of \$3.83 and \$12.68 per pound, respectively. Although making up 72 percent of landings revenue, they represented only 27 percent of New England landings.



## Economic Impacts

In this report, the U.S. seafood industry includes the commercial harvest sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.<sup>1</sup> In 2014, the New England Region's seafood industry generated \$8 billion in sales impacts in Massachusetts, \$2.3 billion in sales impacts in Maine, \$1.6 billion in sales impacts in New Hampshire, \$1.1 billion in sales impacts in Rhode Island, and \$429 million in sales impacts in Connecticut. Massachusetts generated the largest impacts across the three other impact categories, generating 98,000 jobs, \$2 billion in income, and \$3.1 billion in value-added impacts. Maine generated the second highest economic impacts (41,000 jobs, \$756 million income and \$1.1 billion in value-added impacts).

### Key New England Region Commercial Species

- American lobster
- Atlantic herring
- Atlantic mackerel
- Bluefin tuna
- Cod and haddock
- Flounders
- Goosefish
- Quahog clam
- Sea scallop
- Squid

The retail sector generated the greatest employment impacts by state, with 59,000 jobs in Massachusetts and 18,000 jobs in Maine. The harvest sector also generated 18,000 jobs in Maine. More sales impacts were generated by importers in Massachusetts than any other sector in any other state in the region at \$4.3 billion. The greatest value-added impacts were also generated by importers in Massachusetts (\$1.3 billion).

## Landings Revenue

Landings revenue in the New England Region totaled \$1.2 billion in 2014. This was a 24 percent increase (a 5% increase in real terms after adjusting for inflation) from 2005 levels and a 3 percent increase from 2013. Landings revenue was highest in Maine (\$549 million), followed by Massachusetts (\$525 million). Shellfish landings revenue totaled \$1 billion in 2014, a 31 percent increase (an 11% increase in real terms) from 2005 and a 5 percent increase from 2013. Shellfish landings revenue was greatest in Maine (\$497 million) and Massachusetts (\$420 million). Finfish landings revenue totaled \$196 million, a 2 percent decrease (a 17% decrease in real terms) from 2005 to 2014 and a 4 percent decrease from 2013. Finfish revenue

was highest in Massachusetts (\$105 million).

American lobster and sea scallop had the highest landings revenue in the New England Region in 2014, with \$564 million and \$298 million, respectively. Together they accounted for 72 percent of total landings revenue in 2014. Between 2005 and 2014, the landings revenue of American lobster increased 38 percent (a 17% increase in real terms), while landings revenue of sea scallop increased 19 percent (a 1% increase in real terms). In both nominal and real terms (after adjusting for inflation), lobster revenues achieved a record high since reporting began in 1950 due to continued record-high landings and higher prices (up 23% in 2014 compared with 2013). The surge in lobster landings increases are largely driven by record high stock abundance and recruitment levels in the Gulf of Maine, which has made up roughly 85 percent of fishery landings in recent years. In contrast, landings revenue of sea scallop decreased 19 percent from 2013 to 2014 despite the fact that its price increased 11%.

## Landings

Fishermen in the New England Region landed 643 million pounds of finfish and shellfish in 2014. This figure was a 6 percent decrease from 2005 and a 1 percent increase from 2013. Finfish landings accounted for 59 percent of total landings in the New England Region (378 million pounds) in 2014. From 2013 to 2014, finfish landings increased 6 percent, while shellfish landings decreased 4 percent from 2013 levels.

Atlantic herring had the highest annual landings (199 million pounds) in the New England Region in 2014. From 2005 to 2014, landings of lobster (71%), Atlantic mackerel (57%), and quahogs (48%) increased significantly. Species or species groups with large decreases in landings during this period included goosefish (-58%), cod and haddock (-50%), flounders (-50%), and sea scallop (-27%). The declines in cod and haddock landings were driven by a 77 percent reduction in the Gulf of Maine cod quota from 2012 levels that was intended to reduce harvest and protect spawning stock. These measures were deemed necessary following the 2014 stock assessment that found Gulf of Maine cod to be severely depleted at just 3 to 4 percent of a sustainable abundance level. Sea scallop landings declined over this

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at: [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).

10-year period primarily due to a 35 percent reduction in the catch limit that was implemented in 2012 to protect young sea scallops and prevent localized overfishing.

**Commercial Fisheries Facts**

**Landings revenue**

- On average, from 2005 to 2014 the key species or species groups accounted for 84 percent of total revenue, generating \$858 million annually in the New England Region.
- American lobster had higher landings revenues than any other species or species group, averaging \$387 million in landings revenue from 2005 to 2014.

**Landings**

- Key species or species groups contributed an average of 71 percent annually to total landings between 2005 to 2014, averaging 456 million pounds.
- Atlantic herring contributed the most to landings in the region, averaging 190 million pounds from 2005 to 2014.

**Prices**

- Sea scallop had the highest average annual ex-vessel price per pound from 2005 to 2014 (\$8.67).
- Atlantic herring had the lowest average annual ex-vessel price per pound from 2005 to 2014 (\$0.19).

Species or species groups with large increases in landings between 2013 and 2014 include squid (97%), bluefin tuna (86%), cod and haddock (68%), and Atlantic mackerel (43%). Cod and haddock landing gains were driven strictly by haddock, which increased 143 percent; 2014 cod landings increased 4 percent compared with 2013 levels.

**Prices**

The ex-vessel prices for New England’s key species and species groups in 2014 were higher than their 10-year average only for five of the key species (three of the species in real terms). From 2005 to 2014, prices for sea scallop, the most highly valued among New England’s key species/species group, had the largest ex-vessel price increase (62%, 38% in real terms), followed by Atlantic herring (56%, 27% in real terms), the lowest value species in the region. Compared with ex-vessel prices in 2013, Atlantic mackerel (32%) and American lobster (24%) had the

largest increases. The 24 percent gain in lobster ex-vessel prices has been attributed to the lobsters shedding their shells on a more predictable schedule (unlike 2012 when lobsters shed their shells early, leading to an excess of supply and depressed prices). This price increase is also attributable to dealer’s success in building markets to absorb the increased supply of the past 3 years effectively.

**RECREATIONAL FISHERIES**

In 2014, almost 1.2 million recreational anglers took 6.7 million fishing trips in the New England Region. Residents of a New England coastal county made up 92 percent of these anglers. Of the total fishing trips taken, 48 percent were from the private boat sector and another 44 percent were from the shore sector. The most frequently caught species or species groups in New England included porgies (scup) and Atlantic mackerel.

**Key New England Recreational Species**

- Atlantic cod
- Atlantic mackerel
- Bluefin tuna
- Bluefish
- Little tunny
- Scup
- Striped bass
- Summer flounder
- Winter flounder
- Tautog

**Economic Impacts and Expenditures**

The contribution of recreational fishing activities in the New England Region<sup>2</sup> are reported in terms of economic impacts at the state level (employment, sales, income and value-added impacts) and expenditures on fishing trips and durable equipment at the regional level. Employment impacts in Massachusetts were the highest in the region with approximately 14,264 full- and part-time jobs generated by recreational fishing activities in the state. Rhode Island (4,439 jobs) and Connecticut (2,993 jobs) followed in terms of employment impacts.

In addition to jobs, the contribution of recreational fishing activities to the New England Region’s economy can be measured in terms of sales impacts and the contribution of these activities to gross domestic product (value-added impacts). In 2014, sales impacts were the highest in Massachusetts (\$1.4 billion), followed by Rhode Island (\$0.4 billion). Value added impacts were the highest in Massachusetts (\$1 billion in value-added impacts), followed by Rhode Island (\$0.3 billion).

<sup>2</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/publications/marine-angler-expenditures/marine-angler-2011>).

The total saltwater fishing trip and durable equipment expenditures were \$2.2 across the New England Region in 2014. Approximately 82 percent of these expenditures were related to durable equipment purchases. The largest expenditures on durable goods were for boat expenses (\$1.1 billion), followed by fishing tackle (\$426.4 million), and other equipment (\$156.2 million). Fishing trip-related expenditures by non-residents totaled \$191.5 million, of which the greatest portion can be attributed to trips in the shore sector (\$89.9 million). Residents of the New England Region spent \$201.9 million on trip-related expenses, with the greatest of these expenses related to the private boat sector (\$118.7 million).

### Participation

There were 1.2 million recreational anglers who fished in the New England Region in 2014, a 22 percent decrease from 2005 (1.5 million anglers). These anglers were New England Region residents from either a coastal (1.1 million anglers) or non-coastal county (98,000 anglers). About 92 percent of total anglers in 2014 were residents of a coastal county. Coastal county angler participation in 2014 decreased 20 percent compared with 2005 (1.3 million anglers) and increased 4 percent between 2013 and 2014. Non-coastal county angler participation decreased 42 percent from 2005 (169,000 anglers) and decreased 2 percent from 2013 (100,000 anglers).

### Fishing Trips

Recreational fishermen took 6.7 million fishing trips in the New England Region in 2014. This was a 28 percent decrease from 2005 and a 6 percent increase from 2013. Approximately 48 percent of the saltwater trips came in the private boat sector. The other most popular mode of fishing was shore with 44 percent of trips in 2014.

### Harvest and Release

The New England Region's species and species groups caught most frequently in 2014 were porgies (scup) (6.4 million fish), Atlantic mackerel (4.7 million fish), and bluefish (3.6 million fish). Between 2005 and 2014, five of the New England Region's key species or species groups showed decreases in catch totals, with the largest decreases occurring among striped bass (-70%), bluefin tuna (-60%) and Atlantic cod (-42%). Large increases

in the number of fish caught between 2005 and 2014 were observed in little tunny (693%), wrasses (tautog) (201%) and winter flounder (80%).

#### Recreational Fishing Facts

##### Participation

- An average of 1.4 million anglers fished in the New England Region annually from 2005 to 2014.
- Coastal county residents made up 89 percent of total anglers in this region from 2005 to 2014.

##### Fishing Trips

- In the New England Region, an average of 7.6 million fishing trips were taken annually from 2005 to 2014.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 4 million and 3.2 million fishing trips, respectively, from 2005 to 2014.

##### Harvest and Release

- Striped bass was the most commonly caught key species or species group, averaging 6.3 million fish per year from 2005 to 2014, followed by porgies (scups) with 5.5 million fish.

## MARINE ECONOMY

Across all sectors of the economy in the New England Region approximately 6 million full- and part-time workers were employed by approximately 366,000 establishments in 2013.<sup>3</sup> Annual payroll totaled \$326 billion. Total employee compensation in the New England Region totaled \$487 billion and the combined gross state product of all states totaled about \$865 billion.<sup>4</sup>

The Commercial Fishing Location Quotient (CFLQ) provides a measure of the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>5</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

<sup>3</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

<sup>4</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).

<sup>5</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).

CFLQ values were available only for two of the five states in the New England region, Maine and Rhode Island. Both states show a higher concentration of fishing-related industries than the national economy as a whole. In 2013, the CFLQ for Maine was the highest in the region at 18.29. Maine's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 18.29 times higher than the level of employment in these industries nationwide. The 2013 CFLQ in Rhode Island was second highest in the region at 3.2.

### Seafood Sales and Processing

From 2005 to 2013, the number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging in the New England Region increased 6 percent to 103 firms. The greatest number of these nonemployer firms were located in Maine (36). Annual receipts decreased 4 percent to about \$10 million in 2013 (a 26% decrease in real terms). Employer establishments engaged in seafood product preparation and packaging decreased 19 percent from 2005 to 2013, to 79 firms. The biggest number of New England Region employer firms in this sector was located in Massachusetts (40). The number of employees decreased 42 percent to 2,356. Annual payroll decreased 27 percent to about \$113 million in 2013 (a 44% decrease in real terms).

From 2005 to 2013, employer establishments in the wholesale seafood sales sector decreased 10 percent to 349. The largest number of wholesaling establishments was located in Maine (150). The number of employees increased 17 percent to 3,723. Annual payroll increased 48 percent to about \$172 million in 2013 (a 14% increase in real terms).

The number of non-employer firms in the retail seafood sector in the New England Region decreased 2 percent to 157 firms in 2013, relative to 2005. The greatest number of these non-employer firms was located in Massachusetts (51). Annual receipts decreased 29 percent to about \$14 million in 2013 (a 46% decrease in real terms). Employer establishments engaged in seafood retail decreased 5 percent from 2005 to 2013, to 234 firms. The biggest number of New England Region employer firms in this

sector was located in Massachusetts (114). The number of employees increased 5 percent to 1,327. Annual payroll increased 12 percent to about \$36 million in 2013 (a 14% decrease in real terms).

### Transport, Support and Marine Operations

The size of the Transport, Support and Marine Operations sectors in the New England region is difficult to assess because so much of the state-level data is suppressed for confidentiality purposes. It is clear, however, that these sectors play an important role in the regional economy. For example, there were 493 establishments classified as marinas, employing 3,343 workers and spending \$168 million on payroll in 2013 across all five states in the region. In addition, the Ship and Boat Building Sector consisted of 167 establishments employing 1,231 workers and contributing \$58 million in payroll in Massachusetts and Rhode Island alone.



# Tables | New England Region



## New England Region | Commercial Fisheries

### 2014 Economic Impacts of the New England Seafood Industry (thousands of dollars)

	Landings Revenue	With Imports				Without Imports			
		#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Connecticut	14,145	2,763	429,184	90,981	151,035	851	49,989	17,133	23,886
Maine	548,943	41,314	2,303,292	755,955	1,094,928	39,198	1,993,580	689,391	985,557
Massachusetts	525,124	97,761	7,954,047	2,045,415	3,132,490	59,347	2,210,111	811,881	1,107,546
New Hampshire	26,833	11,217	1,582,868	359,000	578,673	2,338	129,290	47,844	65,427
Rhode Island	86,211	10,174	1,096,821	273,316	428,503	5,370	305,502	110,683	154,995

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	970,516	1,132,841	895,381	808,816	787,206	960,090	1,103,010	1,192,900	1,163,328	1,201,257
Finfish & Other	200,751	329,541	178,614	190,211	176,889	190,224	212,523	243,964	204,722	196,224
Shellfish	769,765	803,300	716,768	618,605	610,317	769,867	890,487	948,937	958,606	1,005,032
<b>Key Species</b>										
American lobster	408,719	395,289	359,783	317,909	305,195	397,768	417,931	425,562	458,779	563,616
Atlantic herring	20,085	NA	18,770	20,507	24,459	20,692	24,759	28,545	31,388	28,130
Atlantic mackerel	2,923	14,491	6,000	5,265	7,892	3,459	295	3,480	1,738	3,173
Bluefin tuna	3,864	1,715	2,077	2,993	4,448	8,470	9,258	8,394	3,649	6,114
Cod & haddock	39,824	31,856	39,326	47,166	38,745	49,710	48,775	29,972	16,350	20,805
Flounders	42,339	37,757	33,650	30,501	27,282	27,680	30,837	35,138	32,054	31,353
Goosefish	34,408	26,603	21,209	19,945	14,321	14,064	19,792	19,693	13,576	14,095
Quahog clam	6,707	28,356	30,026	8,901	9,002	9,713	8,314	9,276	9,383	10,147
Sea scallop	250,762	264,226	237,299	203,124	209,168	265,493	352,632	389,501	366,007	297,523
Squid	20,206	25,850	17,711	19,848	16,696	14,788	22,887	18,187	15,547	21,407

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	684,292	748,637	584,849	602,950	648,988	580,145	612,952	665,778	634,766	643,138
Finfish & Other	461,038	496,743	371,353	396,942	422,726	334,641	357,753	381,476	357,666	378,303
Shellfish	223,254	251,894	213,496	206,009	226,263	245,503	255,199	284,302	277,100	264,836
<b>Key Species</b>										
American lobster	86,224	94,347	79,435	86,229	99,199	116,024	125,167	148,906	149,116	147,179
Atlantic herring	212,389	240,626	158,077	167,709	210,786	140,789	174,338	190,532	203,763	198,807
Atlantic mackerel	8,223	99,752	50,760	38,359	39,398	16,904	913	9,680	9,049	12,942
Bluefin tuna	837	274	300	447	772	1,201	1,085	915	523	971
Cod & haddock	30,500	19,785	24,856	33,122	32,470	39,261	30,108	14,800	9,072	15,199
Flounders	30,290	19,530	16,089	15,411	16,229	14,526	17,902	18,340	16,295	15,179
Goosefish	34,873	26,146	19,968	17,757	14,256	12,378	14,700	16,422	14,321	14,547
Quahog clam	1,088	6,195	4,630	1,468	1,628	1,790	1,513	1,570	1,594	1,607
Sea scallop	32,038	41,229	35,390	28,867	31,604	32,884	35,285	39,209	32,103	23,468
Squid	26,748	43,652	26,421	28,615	28,014	21,722	27,907	16,153	14,575	28,779

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	4.74	4.19	4.53	3.69	3.08	3.43	3.34	2.86	3.08	3.83
Atlantic herring	0.09	0.68	0.12	0.12	0.12	0.15	0.14	0.15	0.15	0.14
Atlantic mackerel	0.36	0.15	0.12	0.14	0.20	0.20	0.32	0.36	0.19	0.25
Bluefin tuna	4.62	6.26	6.93	6.69	5.76	7.05	8.54	9.18	6.98	6.29
Cod & haddock	1.31	1.61	1.58	1.42	1.19	1.27	1.62	2.03	1.80	1.37
Flounders	1.40	1.93	2.09	1.98	1.68	1.91	1.72	1.92	1.97	2.07
Goosefish	0.99	1.02	1.06	1.12	1.00	1.14	1.35	1.20	0.95	0.97
Quahog clam	6.16	4.58	6.49	6.06	5.53	5.43	5.50	5.91	5.89	6.31
Sea scallop	7.83	6.41	6.71	7.04	6.62	8.07	9.99	9.93	11.4	12.68
Squid	0.76	0.59	0.67	0.69	0.60	0.68	0.82	1.13	1.07	0.74

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of the New England Recreational Fishing Expenditures (thousands of dollars, trips)**

	Trips	#Jobs	Sales	Income	Value Added
Connecticut	1,364	2,993	289,927	137,757	215,821
Maine	539	1,051	84,955	35,676	55,515
Massachusetts	3,397	14,264	1,391,996	688,503	996,280
New Hampshire	252	563	52,693	25,375	35,185
Rhode Island	1,099	4,439	421,355	199,243	300,928

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	70,202	34,229	Fishing Tackle	426,408
Private Boat	31,426	118,676	Other Equipment	156,233
Shore	89,881	48,945	Boat Expenses	1,109,629
Total	191,507	201,851	Vehicle Expenses	149,153
			Second Home Expenses	2,418
			Total Durable Expenditures	1,843,841
Total State Trip and Durable Goods Expenditures				2,237,199

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	1,348	1,408	1,408	1,389	1,222	1,317	1,156	1,172	1,043	1,080
Non-Coastal	169	188	205	187	165	168	132	145	100	98
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	1,517	1,596	1,613	1,576	1,387	1,485	1,288	1,317	1,143	1,178

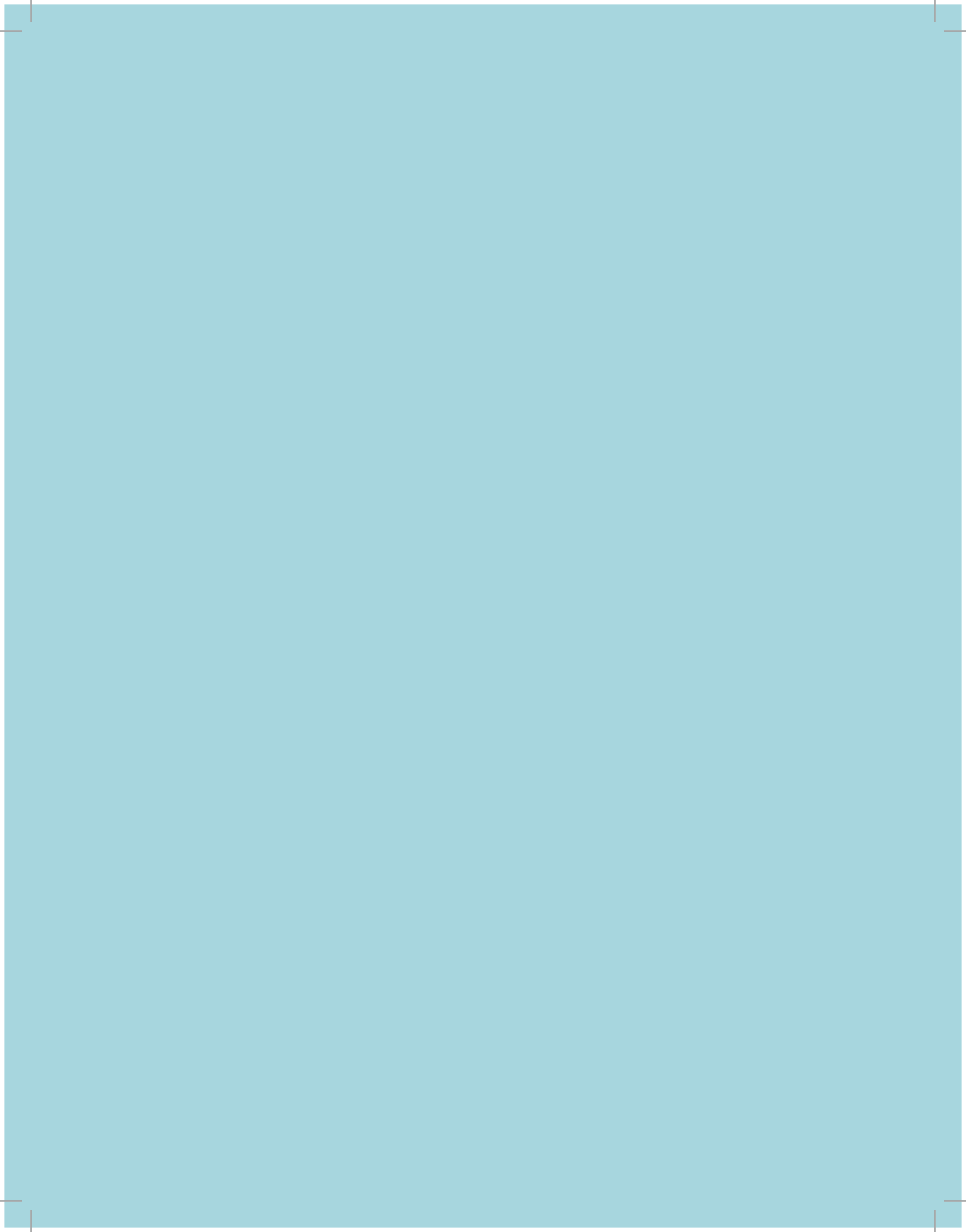
**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	418	457	518	511	463	321	367	345	516	486
Private	5,060	4,651	4,820	4,893	3,375	3,967	3,161	3,132	3,458	3,225
Shore	3,719	4,107	3,951	3,735	3,322	2,925	2,531	2,687	2,312	2,940
Total Trips	9,197	9,215	9,289	9,139	7,160	7,213	6,059	6,164	6,286	6,651

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic cod	H	485	203	305	384	390	509	532	336	392	264
	R	1,108	722	964	954	833	1,071	915	471	641	667
Atlantic mackerel	H	2,940	4,180	1,885	3,357	2,463	3,472	5,336	3,277	3,707	3,263
	R	62	559	116	453	344	381	536	484	279	1,421
Bluefin tuna	H	12	3	11	9	8	1	2	10	0	8
	R	8	7	10	1	5	0	5	4	0	0
Bluefish	H	1,200	1,647	1,512	1,460	673	1,184	658	1,502	1,685	873
	R	3,013	3,639	2,906	2,995	1,436	1,846	1,931	1,950	1,957	2,754
Little tunny	H	0	1	5	0	1	2	0	10	1	9
	R	55	26	65	16	17	20	44	103	14	427
Porgies (scup)	H	1,595	1,426	3,048	1,944	1,498	2,411	2,287	2,952	3,790	3,172
	R	2,194	2,638	2,802	4,048	3,277	3,586	2,376	3,530	3,084	3,263
Striped bass	H	700	593	597	602	548	527	458	531	701	495
	R	9,943	14,094	8,367	7,714	4,164	2,769	2,040	1,780	3,801	2,649
Summer flounder	H	589	642	426	584	167	198	267	242	429	418
	R	1,419	2,850	1,044	2,112	908	818	1,252	937	1,457	1,393
Winter flounder	H	43	50	52	180	113	104	100	55	43	97
	R	42	46	44	70	102	86	60	28	24	56
Wrasses (tautog)	H	269	362	569	304	197	358	79	323	291	459
	R	594	638	1,426	515	396	562	384	909	935	2,135

<sup>1</sup> NA = data are not available because out-of-state resident information is collected for individual states but does not specify whether an angler resides in a region.  
<sup>2</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.





# Tables | Connecticut



## Connecticut | Commercial Fisheries

### 2014 Economic Impacts of the Connecticut Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	2,763	429,184	90,981	151,035	851	49,989	17,133	23,886
Commercial Harvesters	425	25,083	6,880	10,600	425	25,083	6,880	10,600
Seafood Processors & Dealers	116	11,979	4,575	5,914	53	5,429	2,073	2,680
Importers	1,169	321,504	51,527	98,008	-	-	-	-
Seafood Wholesalers & Distributors	173	27,531	9,011	12,108	17	2,636	863	1,159
Retail	879	43,087	18,988	24,405	357	16,840	7,317	9,446

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	37,570	36,892	42,053	17,206	15,007	17,626	20,032	21,132	14,632	14,145
Finfish & Other	5,097	3,732	3,421	3,987	3,172	5,284	4,863	5,529	5,172	4,478
Shellfish	32,474	33,161	38,632	13,219	11,835	12,342	15,170	15,603	9,460	9,667
<b>Key Species</b>										
American lobster	3,821	4,031	3,222	2,102	1,763	1,894	943	1,057	577	609
Eastern oyster	NA	2,206	5,142	NA	NA	NA	NA	NA	NA	NA
Flounders	1,170	1,027	881	802	736	889	1,027	996	1,086	1,009
Goosefish	658	346	512	551	591	564	976	1,040	1,022	510
Hake	2,432	1,628	1,232	1,619	1,149	1,417	1,705	1,468	1,416	1,692
Quahog clam	NA	18,135	20,531	NA	NA	NA	NA	NA	NA	NA
Scups or Porgies	263	302	311	383	196	272	408	837	705	573
Sea scallop	9,761	7,229	8,605	10,032	8,952	9,458	13,007	12,005	7,219	7,219
Snails (conchs)	233	533	312	35	NA	NA	NA	NA	NA	NA
Squid, loligo	1,224	954	744	546	260	473	694	1,861	1,257	1,354

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	13,628	11,750	10,050	7,131	6,568	6,698	7,403	8,940	7,957	7,523
Finfish & Other	6,548	5,807	3,931	4,552	4,248	4,485	5,282	5,823	5,926	5,277
Shellfish	7,080	5,943	6,119	2,578	2,320	2,213	2,121	3,117	2,030	2,246
<b>Key Species</b>										
American lobster	714	793	569	426	412	442	199	248	127	127
Eastern oyster	NA	77	193	NA	NA	NA	NA	NA	NA	NA
Flounders	582	458	345	283	308	332	420	350	426	313
Goosefish	524	496	460	424	546	358	630	765	967	493
Hake	3,735	2,632	1,839	2,465	2,194	2,151	2,199	2,032	1,821	2,207
Quahog clam	NA	2,665	3,067	NA	NA	NA	NA	NA	NA	NA
Scups or Porgies	328	298	256	282	204	324	644	907	1,195	811
Sea scallop	1,272	1,104	1,313	1,407	1,386	1,260	1,318	1,231	640	609
Snails (conchs)	50	101	117	47	NA	NA	NA	NA	NA	NA
Squid, loligo	1,537	1,157	811	523	256	366	498	1,518	1,098	1,318

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	5.35	5.08	5.67	4.93	4.27	4.29	4.74	4.26	4.53	4.78
Eastern oyster	NA	28.61	26.64	NA	NA	NA	NA	NA	NA	NA
Flounders	2.01	2.25	2.55	2.84	2.39	2.68	2.44	2.85	2.55	3.23
Goosefish	1.26	0.7	1.11	1.3	1.08	1.58	1.55	1.36	1.06	1.04
Hake	0.65	0.62	0.67	0.66	0.52	0.66	0.78	0.72	0.78	0.77
Quahog clam	NA	6.8	6.69	NA	NA	NA	NA	NA	NA	NA
Scups or Porgies	0.8	1.01	1.22	1.36	0.96	0.84	0.63	0.92	0.59	0.71
Sea scallop	7.67	6.55	6.55	7.13	6.46	7.51	9.87	9.75	11.29	11.85
Snails (conchs)	4.66	5.28	2.66	0.75	NA	NA	NA	NA	NA	NA
Squid, loligo	0.8	0.82	0.92	1.04	1.01	1.29	1.39	1.23	1.15	1.03

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of Connecticut Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	180	17,294	7,611	10,003
	Private Boat	202	23,309	10,318	16,364
	Shore	69	6,176	2,748	4,196
Total Durable Expenditures		2,542	243,148	117,080	185,258
Total State Economic Impacts		2,993	289,927	137,757	215,821

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	3,211	6,472	Fishing Tackle	53,085
Private Boat	2,918	22,065	Other Equipment	14,291
Shore	491	5,233	Boat Expenses	156,489
Total	6,620	33,771	Vehicle Expenses	11,359
			Second Home Expenses	0
			Total Durable Expenditures	235,225
Total State Trip and Durable Goods Expenditures				275,616

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	323	336	302	381	438	402	420	397	198	209
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	77	44	61	123	93	112	98	67	43	64
Total Anglers	400	380	363	504	531	514	518	464	241	273

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	35	50	64	74	43	41	46	26	64	62
Private	1,174	868	1,097	1,292	711	871	863	825	830	865
Shore	485	571	559	609	665	614	399	475	316	437
Total Trips	1,694	1,489	1,720	1,975	1,419	1,526	1,308	1,326	1,210	1,364

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic cod	H	0	0	0	0	0	0	0	1	0	0
	R	0	0	0	0	0	0	0	0	0	0
Bluefish	H	247	507	450	623	262	591	307	480	894	299
	R	576	1,167	888	1,144	295	715	997	679	726	426
Hickory shad	H	54	63	35	0	0	1	16	39	8	73
	R	32	144	4	5	0	0	0	0	1	67
Little tunny	H	0	0	0	0	0	1	0	0	0	1
	R	0	0	1	0	9	8	14	57	0	13
Porgies (scup)	H	508	532	925	549	289	1,088	933	868	930	561
	R	753	740	1,006	974	1,204	1,192	539	1,049	1,212	1,402
Striped bass	H	141	115	119	108	61	93	63	65	143	87
	R	1,762	987	985	3,105	1,161	671	612	265	778	304
Summer flounder	H	157	138	112	146	45	35	47	63	270	120
	R	779	1,111	297	991	428	373	345	306	867	638
White perch	H	0	0	0	7	60	0	0	10	0	14
	R	0	15	18	52	72	0	0	48	2	7
Winter flounder	H	4	0	0	0	12	14	19	9	0	1
	R	0	21	15	0	7	12	0	7	4	1
Wrasses (tautog)	H	36	201	353	167	86	116	26	194	105	290
	R	149	108	745	250	112	257	36	599	455	1,590

<sup>1</sup> NA = data are not available because out-of-state resident information is collected for individual states but does not specify whether an angler resides in a region.

<sup>2</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## Connecticut | Marine Economy

### Connecticut's State Economy (% of national total)<sup>1,2</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>3</sup>
2005	93,561 (1.2%)	1,529,827 (1.3%)	75.61 (1.7%)	111.25 (1.6%)	208.15 (1.6%)	ds
2013	88,498 (1.2%)	1,473,605 (1.2%)	85.90 (1.5%)	129.12 (1.5%)	246.90 (1.5%)	ds
%Change	-5.7	-3.8	12.0	13.8	15.7	NA

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	7	11	ds	18	17	17	14	13	25
	Receipts	551	3,206	ds	2,375	2,550	1,518	1,066	882	3,058
Seafood sales, retail	Firms	24	15	26	25	23	25	21	21	20
	Receipts	3,313	2,915	4,436	3,247	2,142	2,473	2,165	1,388	1,543

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	3	4	3	3	2	2	2	1	1
	Employees	113	119	0	59	0	0	0	0	0
	Payroll	3,656	4,242	0	1,040	0	0	0	0	0
Seafood sales, wholesale	Establishments	17	19	20	24	25	23	24	16	17
	Employees	0	0	183	185	212	216	212	187	178
	Payroll	0	0	8,347	8,551	8,842	9,219	9,224	8,237	7,920
Seafood sales, retail	Establishments	39	35	36	35	36	39	37	37	36
	Employees	187	196	177	203	205	204	171	233	218
	Payroll	5,028	4,937	5,252	5,248	5,551	5,563	4,824	6,349	6,344

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	5	4	4	5	5	6	5	10	9
	Employees	ds	ds	ds	ds	ds	ds	95	256	ds
	Payroll	ds	ds	ds	ds	ds	8,148	7,856	32,789	ds
Deep sea freight transportation	Establishments	11	14	14	12	12	10	11	14	11
	Employees	310	235	228	243	222	225	225	297	184
	Payroll	36,766	47,845	48,110	46,595	45,045	29,407	41,302	37,711	28,513
Deep sea passenger transportation	Establishments	2	1	2	1	1	1	1	1	0
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	NA
Marinas	Establishments	117	119	124	125	126	129	128	130	130
	Employees	994	1,024	1,224	1,352	1,261	1,284	1,283	1,257	1,265
	Payroll	42,754	44,829	50,809	60,016	58,065	58,877	59,851	60,803	63,211
Marine cargo handling	Establishments	3	3	5	4	3	3	3	0	1
	Employees	ds	ds	ds	ds	ds	ds	ds	NA	ds
	Payroll	ds	ds	5,925	ds	ds	ds	ds	NA	ds
Navigational services to shipping	Establishments	8	9	6	6	6	6	5	2	2
	Employees	45	69	ds	ds	5	ds	5	ds	ds
	Payroll	1,768	2,423	432	338	696	242	898	ds	ds
Port & harbor operations	Establishments	4	4	4	8	8	6	5	4	5
	Employees	ds	ds	ds	179	166	122	34	ds	ds
	Payroll	ds	ds	ds	6,136	5,787	2,162	848	1,414	ds
Ship & boat building	Establishments	17	17	22	15	13	12	11	8	7
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds

<sup>1</sup> ds = these data are suppressed.

<sup>2</sup> NA = not applicable.

<sup>3</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.



# Tables | Maine



**2014 Economic Impacts of the Maine Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	41,314	2,303,292	755,955	1,094,928	39,198	1,993,580	689,391	985,557
Commercial Harvesters	18,452	1,053,447	288,754	471,743	18,452	1,053,447	288,754	471,743
Seafood Processors & Dealers	3,141	218,238	87,620	111,958	2,809	195,179	78,362	100,129
Importers	876	241,044	38,632	73,481	-	-	-	-
Seafood Wholesalers & Distributors	1,296	123,009	44,125	57,417	1,100	104,416	37,455	48,739
Retail	17,548	667,555	296,825	380,329	16,836	640,538	284,819	364,946

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	392,122	391,293	344,022	308,233	292,315	380,435	411,983	450,926	476,423	548,943
Finfish & Other	47,141	38,552	36,833	36,695	30,367	30,196	43,816	77,546	72,551	51,819
Shellfish	344,982	352,742	307,189	271,538	261,948	350,240	368,168	373,380	403,872	497,125
<b>Key Species</b>										
American lobster	317,948	305,443	280,634	245,146	237,519	318,304	334,577	341,861	370,207	459,600
Atlantic herring	56	10,729	9,173	8,396	7,867	8,643	14,404	14,490	15,514	16,333
Bloodworms	6,039	5,177	6,051	5,913	6,196	5,893	5,847	5,191	5,644	6,094
Blue mussel	2,625	2,716	1,934	1,627	2,203	2,071	1,969	1,919	2,341	2,153
Cod & haddock	5,177	3,982	3,728	5,257	1,752	1,528	1,666	1,362	976	1,272
Goosefish	6,232	3,238	2,402	1,478	526	393	578	1,059	773	566
Ocean quahog clam	3,607	3,919	3,194	2,195	1,821	1,721	2,117	1,737	1,378	1,238
Pollock	3,106	2,309	2,160	2,321	2,047	1,503	1,929	2,527	2,562	2,878
Sea urchins	5,142	4,741	4,367	5,410	5,866	5,490	5,113	5,024	5,781	5,325
Softshell clam	14,081	26,940	12,574	12,826	11,686	12,960	15,852	15,655	18,102	20,247

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	214,514	216,657	186,324	186,696	188,388	200,876	249,496	263,421	266,413	260,358
Finfish & Other	121,278	117,637	93,742	94,641	82,505	79,375	122,944	121,322	119,490	127,912
Shellfish	93,236	99,020	92,582	92,056	105,883	121,501	126,552	142,099	146,923	132,447
<b>Key Species</b>										
American lobster	68,730	75,346	63,959	69,863	81,179	96,246	104,923	127,237	127,756	124,366
Atlantic herring	558	97,843	74,817	67,731	64,606	57,557	97,116	92,506	98,859	104,242
Bloodworms	456	462	549	537	574	534	526	457	470	448
Blue mussel	3,357	3,435	2,643	2,289	2,760	2,582	2,810	2,399	2,282	2,270
Cod & haddock	4,045	2,448	2,345	2,455	1,401	876	842	549	418	688
Goosefish	7,130	3,669	2,376	1,178	603	404	533	1,075	874	633
Ocean quahog clam	1,001	1,214	1,011	669	556	549	645	698	557	438
Pollock	5,260	3,678	4,245	4,064	3,040	1,640	2,325	2,666	2,227	2,319
Sea urchins	3,517	3,372	2,761	2,900	3,487	2,592	2,407	1,904	1,988	1,981
Softshell clam	1,857	3,918	1,948	1,998	1,902	2,077	2,365	2,257	2,297	2,085

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	5.45	4.63	4.88	3.83	3.17	3.54	3.34	2.77	2.94	3.70
Atlantic herring	0.12	0.13	0.14	0.14	0.13	0.16	0.16	0.16	0.16	0.16
Bloodworms	15.59	12.79	12.26	12.01	11.68	11.80	11.66	11.69	12.18	13.59
Blue mussel	0.92	0.90	0.81	0.78	0.86	0.86	0.73	0.82	1.04	0.95
Cod & haddock	1.51	1.86	1.77	2.34	1.35	1.87	2.07	2.56	2.37	1.85
Goosefish	1.03	1.01	1.12	1.37	0.94	1.04	1.14	1.01	0.90	0.89
Ocean quahog clam	4.24	3.69	3.52	3.58	3.54	3.35	3.44	2.56	2.51	2.82
Pollock	0.70	0.72	0.57	0.62	0.73	0.98	0.87	0.98	1.17	1.24
Sea urchins	1.72	1.61	1.76	2.04	1.82	2.27	2.23	2.72	2.95	2.69
Softshell clam	8.93	7.85	7.18	7.00	6.65	6.68	7.02	7.14	8.00	9.71

**2014 Economic Impacts of Maine Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	113	9,801	3,936	5,459
	Private Boat	50	4,617	1,731	2,824
	Shore	219	19,179	6,756	11,028
Total Durable Expenditures		669	51,358	23,253	36,204
Total State Economic Impacts		1,051	84,955	35,676	55,515

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	5,304	1,044	Fishing Tackle	17,302
Private Boat	1,136	3,619	Other Equipment	6,073
Shore	13,482	1,667	Boat Expenses	27,937
Total	19,921	6,330	Vehicle Expenses	272
			Second Home Expenses	0
			Total Durable Expenditures	51,584
Total State Trip and Durable Goods Expenditures				77,835

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	190	182	174	121	117	122	85	116	102	79
Non-Coastal	20	22	13	9	12	9	7	6	4	5
Out-of-State	173	285	260	180	324	159	107	126	129	129
Total Anglers	383	489	447	310	453	290	199	248	235	213

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	40	31	33	25	26	23	22	20	29	24
Private	519	548	460	408	334	327	265	212	313	188
Shore	524	497	531	421	544	366	240	405	254	327
Total Trips	1,083	1,076	1,024	854	904	716	527	637	596	539

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American Shad	H	0	1	0	0	1	0	0	0	0	1
	R	0	7	4	5	18	9	5	18	1	0
Atlantic cod	H	29	14	19	41	45	15	40	26	61	22
	R	35	49	72	50	36	45	100	80	75	50
Atlantic mackerel	H	607	450	806	837	1,110	1,093	1,544	1,028	704	706
	R	29	104	80	265	194	178	304	163	59	1,166
Blue shark	H	0	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	1	0	9	2	13	10
Bluefin tuna	H	0	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	0	0	0	0	0	0
Bluefish	H	38	8	50	30	3	14	0	4	19	0
	R	49	50	74	55	26	9	8	126	22	0
Haddock	H	6	9	12	20	10	4	12	4	6	3
	R	2	4	11	2	1	4	4	8	46	55
Pollock	H	28	67	51	67	62	58	57	50	140	136
	R	32	23	24	135	34	105	135	89	296	177
Striped bass	H	83	75	53	59	62	18	18	11	23	21
	R	2,985	4,001	1,116	465	264	193	143	214	423	277
Winter flounder	H	0	0	0	0	0	0	0	0	0	0
	R	0	1	0	1	5	0	0	0	1	3

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## Maine | Marine Economy

### Maine's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	41,933 (0.6%)	497,387 (0.4%)	15.87 (0.4%)	26.51 (0.4%)	46.05 (0.4%)	11.59
2013	40,257 (0.5%)	487,313 (0.4%)	18.74 (0.3%)	31.36 (0.4%)	54.61 (0.3%)	18.29
%Change	-4.2	-2.1	15.3	15.5	15.7	57.8

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	52	54	65	64	63	59	51	51	36
	Receipts	5,082	6,463	7,177	4,261	6,605	4,480	3,077	3,294	2,757
Seafood sales, retail	Firms	51	45	55	46	48	47	48	46	49
	Receipts	7,331	7,115	5,905	4,035	4,882	5,835	4,608	4,492	4,200

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	27	27	27	29	25	27	28	29	28
	Employees	614	616	536	490	545	594	500	492	376
	Payroll	12,349	12,304	9,351	9,288	10,427	12,851	10,353	12,011	11,797
Seafood sales, wholesale	Establishments	177	167	170	168	164	164	152	136	150
	Employees	1,152	996	1,015	1,210	1,126	1,153	1,109	1,047	1,340
	Payroll	30,513	32,192	32,005	36,185	37,687	39,915	38,412	40,734	46,782
Seafood sales, retail	Establishments	49	55	50	45	49	51	51	48	51
	Employees	184	179	181	148	152	176	177	215	243
	Payroll	4,678	4,753	4,635	4,148	4,481	5,126	5,108	6,902	7,618

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	3	3	3	5	4	4	4	3	3
	Employees	ds	ds	ds	ds	22	28	ds	ds	ds
	Payroll	ds	ds	ds	1,058	1,037	1,067	1,105	ds	ds
Deep sea freight transportation	Establishments	1	1	0	1	1	1	0	0	0
	Employees	ds	ds	NA	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	NA	ds	ds	ds	NA	NA	NA
Deep sea passenger transportation	Establishments	1	1	2	1	1	1	1	0	0
	Employees	ds	ds	ds	ds	ds	ds	ds	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	NA	NA
Marinas	Establishments	84	84	86	87	89	86	84	80	79
	Employees	411	417	464	411	376	395	349	428	403
	Payroll	14,215	15,353	18,600	15,206	14,654	14,699	15,426	17,102	17,476
Marine cargo handling	Establishments	3	3	3	3	3	2	2	1	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Navigational services to shipping	Establishments	16	12	15	15	14	13	13	13	14
	Employees	88	93	105	138	93	68	63	65	86
	Payroll	5,890	6,260	6,737	6,148	5,369	4,928	4,776	4,730	5,660
Port & harbor operations	Establishments	1	1	2	2	1	1	1	6	3
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	2
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	130
Ship & boat building	Establishments	92	89	94	90	82	75	76	76	79
	Employees	ds	6,808	6,751	6,930	ds	ds	ds	ds	ds
	Payroll	ds	320,288	345,036	354,899	ds	ds	ds	ds	ds

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.



# Tables | Massachusetts



## Massachusetts | Commercial Fisheries

### 2014 Economic Impacts of the Massachusetts Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	97,761	7,954,047	2,045,415	3,132,490	59,347	2,210,111	811,881	1,107,546
Commercial Harvesters	12,327	961,081	303,624	446,524	12,327	961,081	303,624	446,524
Seafood Processors & Dealers	7,871	1,010,662	385,325	500,989	1,698	218,072	83,142	108,099
Importers	15,688	4,315,461	691,635	1,315,541	-	-	-	-
Seafood Wholesalers & Distributors	3,198	503,131	164,415	223,086	1,074	169,044	55,241	74,953
Retail	58,676	1,163,712	500,416	646,349	44,247	861,915	369,875	477,969

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	427,332	586,320	420,004	399,822	400,473	478,691	571,583	616,466	565,739	525,124
Finfish & Other	117,003	252,456	109,370	121,913	114,361	126,582	132,765	126,638	94,572	105,399
Shellfish	310,330	333,863	310,634	277,909	286,112	352,109	438,818	489,828	471,167	419,726
<b>Key Species</b>										
American lobster	49,563	55,901	51,258	45,418	42,731	50,330	53,302	53,357	61,662	68,369
Atlantic herring	69	NA	8,265	11,342	15,062	10,251	8,802	11,529	10,750	9,490
Atlantic mackerel	NA	10,320	4,736	4,265	4,528	1,487	137	654	1,223	2,503
Clams, all other	19,010	14,045	15,680	15,255	16,745	17,966	19,154	37,294	28,311	26,272
Cod & haddock	31,954	25,397	32,043	38,696	33,684	45,210	43,397	26,123	14,083	18,558
Eastern oyster	2,738	4,864	4,559	5,496	6,432	8,225	9,066	12,071	13,896	19,559
Flounders	28,815	24,569	22,095	20,924	19,645	19,975	22,025	25,054	20,612	19,113
Goosefish	21,485	17,712	14,380	14,035	9,902	9,922	13,431	13,596	8,870	10,030
Ocean quahog clam	NA	8,297	10,100	9,575	10,710	8,981	7,995	NA	10,229	9,814
Sea scallop	226,949	234,796	218,292	189,891	197,280	252,253	330,944	364,864	334,205	272,002

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	337,304	396,910	304,774	326,632	356,105	283,025	264,991	296,037	262,256	274,187
Finfish & Other	267,311	304,970	227,566	256,000	279,330	201,161	180,134	193,949	164,379	183,645
Shellfish	69,993	91,940	77,208	70,633	76,775	81,864	84,857	102,088	97,877	90,542
<b>Key Species</b>										
American lobster	9,880	12,100	10,145	10,600	11,782	12,760	13,373	14,485	15,260	15,321
Atlantic herring	700	119,547	73,268	94,266	133,531	71,922	66,970	81,781	74,992	78,048
Atlantic mackerel	NA	89,535	46,240	35,406	30,199	12,156	515	4,131	7,279	10,859
Clams, all other	19,881	7,071	4,135	4,376	6,552	10,242	13,352	35,053	22,495	20,704
Cod & haddock	24,539	15,833	20,298	28,537	28,515	36,461	27,164	13,164	8,123	14,040
Eastern oyster	105	87	123	138	159	215	231	310	329	467
Flounders	22,115	13,170	10,977	11,609	12,405	11,158	13,692	14,247	11,517	10,324
Goosefish	21,849	17,495	13,597	12,680	10,015	8,887	10,143	11,583	9,498	10,528
Ocean quahog clam	NA	16,830	20,158	18,126	18,691	15,646	12,479	NA	14,476	13,422
Sea scallop	29,045	36,666	32,540	27,011	29,782	31,156	33,092	36,725	29,287	21,388

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	5.02	4.62	5.05	4.28	3.63	3.94	3.99	3.68	4.04	4.46
Atlantic herring	0.10	1.25	0.11	0.12	0.11	0.14	0.13	0.14	0.14	0.12
Atlantic mackerel	NA	0.12	0.10	0.12	0.15	0.12	0.27	0.16	0.17	0.23
Clams, all other	0.96	1.99	3.79	3.49	2.56	1.75	1.43	1.06	1.26	1.27
Cod & haddock	1.30	1.60	1.58	1.36	1.18	1.24	1.60	1.98	1.73	1.32
Eastern oyster	26.09	56.10	37.00	39.77	40.36	38.30	39.25	38.96	42.28	41.92
Flounders	1.30	1.87	2.01	1.80	1.58	1.79	1.61	1.76	1.79	1.85
Goosefish	0.98	1.01	1.06	1.11	0.99	1.12	1.32	1.17	0.93	0.95
Ocean quahog clam	NA	0.49	0.50	0.53	0.57	0.57	0.64	NA	0.71	0.73
Sea scallop	7.81	6.40	6.71	7.03	6.62	8.10	10.00	9.93	11.41	12.72

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of Massachusetts Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	975	108,633	53,594	69,226
	Private Boat	822	94,960	42,961	63,177
	Shore	1,319	141,008	59,423	91,145
Total Durable Expenditures		11,148	1,047,395	532,525	772,732
Total State Economic Impacts		14,264	1,391,996	688,503	996,280

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	44,891	20,788	Fishing Tackle	253,036
Private Boat	19,728	77,468	Other Equipment	103,991
Shore	70,423	38,212	Boat Expenses	683,894
Total	135,042	136,469	Vehicle Expenses	113,868
			Second Home Expenses	1,452
			Total Durable Expenditures	1,156,240
Total State Trip and Durable Goods Expenditures				1,427,751

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	585	623	664	655	489	586	490	502	546	582
Non-Coastal	135	151	179	170	144	152	115	130	77	82
Out-of-State	391	484	465	469	421	433	293	309	275	532
Total Anglers	1,111	1,258	1,308	1,294	1,054	1,171	898	941	898	1,196

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	236	231	233	255	240	154	189	204	259	243
Private	2,336	2,411	2,440	2,338	1,760	2,148	1,319	1,471	1,621	1,568
Shore	1,739	1,938	1,947	1,929	1,451	1,186	1,305	1,151	1,058	1,586
Total Trips	4,311	4,580	4,620	4,522	3,451	3,488	2,813	2,826	2,938	3,397

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic bonito	H	30	13	4	7	4	1	5	5	0	17
	R	9	38	12	9	1	3	0	0	1	8
Atlantic cod	H	387	119	232	260	213	412	360	229	216	185
	R	932	423	658	671	581	884	542	240	411	479
Atlantic mackerel	H	1,926	3,603	951	2,024	471	2,083	1,649	1,133	2,273	1,926
	R	17	423	27	152	68	185	43	160	177	225
Bluefish	H	549	652	683	519	344	474	225	336	448	437
	R	1,813	1,843	1,240	1,302	953	1,029	598	714	580	2,213
Haddock	H	247	121	293	233	155	144	52	90	104	114
	R	62	63	56	158	36	33	12	68	310	403
Porgies (scup)	H	657	424	1,770	762	1,069	925	786	1,587	2,042	1,635
	R	751	1,096	1,183	1,688	1,741	1,858	1,174	1,805	1,257	1,283
Striped bass	H	341	314	316	378	345	340	256	379	298	278
	R	3,989	7,810	5,331	3,649	2,282	1,671	972	990	1,690	1,827
Summer flounder	H	267	239	138	233	50	45	58	76	32	113
	R	358	610	135	273	96	215	183	250	63	337
Winter flounder	H	38	43	41	169	87	86	69	46	43	92
	R	41	21	19	62	84	68	58	18	16	46
Wrasses (tautog)	H	72	80	91	34	25	45	33	25	58	101
	R	126	332	414	78	96	118	210	96	231	423

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## Massachusetts | Marine Economy

### Massachusetts's State Economy (% of national total)<sup>1,2</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>3</sup>
2005	175,291 (2.3%)	2,996,347 (2.6%)	140.58 (3.1%)	199.47 (2.8%)	344.14 (2.6%)	9.54
2013	172,533 (2.3%)	3,062,689 (2.6%)	178.30 (3.2%)	257.95 (2.9%)	441.47 (2.6%)	ds
%Change	-1.6	2.2	21.2	22.7	22.0	NA

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	28	36	24	26	22	27	36	25	28
	Receipts	2,266	2,525	908	1,250	1,943	2,082	2,433	1,699	1,857
Seafood sales, retail	Firms	59	62	57	64	64	61	66	65	51
	Receipts	5,528	4,905	4,421	7,982	7,686	6,287	7,640	5,213	3,842

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	50	47	52	44	44	44	44	39	40
	Employees	2,671	2,607	2,684	2,355	2,396	2,159	2,214	1,638	1,755
	Payroll	115,704	120,912	113,580	109,747	119,282	107,635	112,399	74,541	87,153
Seafood sales, wholesale	Establishments	151	139	160	141	144	149	141	140	142
	Employees	1,836	1,706	1,803	1,442	1,542	1,591	2,013	1,841	1,910
	Payroll	76,070	77,106	81,863	68,898	70,864	83,467	94,105	100,801	104,637
Seafood sales, retail	Establishments	116	115	126	118	115	112	106	114	114
	Employees	677	692	737	549	542	584	576	576	708
	Payroll	17,725	18,165	19,267	15,017	15,261	16,495	16,037	15,776	18,304

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	10	12	14	14	12	12	10	14	8
	Employees	ds	623	283	169	166	ds	ds	ds	22
	Payroll	ds	38,421	18,620	11,701	10,011	ds	ds	3,266	1,352
Deep sea freight transportation	Establishments	10	11	12	8	10	8	7	9	8
	Employees	ds	509	ds	361	ds	313	381	ds	ds
	Payroll	ds	38,982	ds	38,908	35,473	36,069	38,797	ds	ds
Deep sea passenger transportation	Establishments	4	4	1	0	1	0	0	0	0
	Employees	ds	ds	ds	NA	ds	NA	NA	NA	NA
	Payroll	ds	ds	ds	NA	ds	NA	NA	NA	NA
Marinas	Establishments	139	141	173	175	177	175	176	172	178
	Employees	973	1,064	1,154	1,138	1,188	1,150	1,125	977	1,054
	Payroll	43,103	45,894	51,705	53,694	56,663	57,002	58,251	48,657	55,053
Marine cargo handling	Establishments	5	4	5	3	2	2	2	4	3
	Employees	ds	ds	69	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	2,867	2,271	ds	ds	ds	ds	ds
Navigational services to shipping	Establishments	6	11	9	8	11	9	9	8	11
	Employees	ds	ds	65	75	71	150	139	120	94
	Payroll	ds	ds	4,540	4,355	4,342	9,413	6,980	5,965	6,578
Port & harbor operations	Establishments	3	4	3	4	4	8	6	5	3
	Employees	ds	ds	69	63	66	86	95	35	ds
	Payroll	ds	ds	647	1,289	1,323	2,662	3,035	1,519	ds
Ship & boat building	Establishments	50	47	49	43	38	37	37	40	41
	Employees	588	ds	588	603	579	535	445	446	463
	Payroll	20,050	ds	26,445	28,402	20,685	20,196	22,066	23,195	23,615

<sup>1</sup> ds = these data are suppressed.

<sup>2</sup> NA = not applicable.

<sup>3</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

# Tables | New Hampshire





## New Hampshire | Commercial Fisheries

### 2014 Economic Impacts of the New Hampshire Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	11,217	1,582,868	359,000	578,673	2,338	129,290	47,844	65,427
Commercial Harvesters	807	47,062	13,301	20,656	807	47,062	13,301	20,656
Seafood Processors & Dealers	1,219	131,333	51,606	66,542	185	19,952	7,840	10,109
Importers	4,104	1,128,980	180,941	344,163	-	-	-	-
Seafood Wholesalers & Distributors	747	94,713	33,387	43,936	72	9,109	3,211	4,226
Retail	4,339	180,781	79,765	103,375	1,274	53,167	23,492	30,436

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	22,084	18,970	17,021	17,471	17,754	20,599	23,483	23,241	20,163	26,833
Finfish & Other	6,840	5,122	4,151	4,824	5,569	5,122	6,147	5,579	2,908	2,938
Shellfish	15,244	13,848	12,870	12,647	12,186	15,477	17,336	17,662	17,256	23,895
<b>Key Species</b>										
American lobster	14,377	12,582	12,517	12,267	11,919	14,836	16,343	17,169	16,601	23,251
Atlantic cod	1,913	1,732	1,972	2,311	2,587	2,187	2,500	1,750	546	572
Atlantic herring	NA	3	147	134	271	375	208	349	216	NA
Goosefish	1,484	783	375	290	280	212	207	153	186	NA
Haddock	136	128	123	89	68	29	35	95	22	18
Hake	279	165	244	167	215	237	445	474	374	NA
Pollock	1,138	1,502	902	1,093	1,283	839	1,355	1,224	1,135	860
Sea scallop	527	126	30	16	4	3	26	143	287	350
Shrimp	340	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spiny dogfish	NA	76	NA	419	557	293	451	420	96	NA

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	21,281	10,295	8,430	10,464	13,886	11,809	12,315	12,148	8,254	9,691
Finfish & Other	18,081	7,463	5,174	7,180	10,093	7,026	7,144	7,546	3,995	4,311
Shellfish	3,200	2,832	3,256	3,284	3,793	4,783	5,171	4,603	4,259	5,380
<b>Key Species</b>										
American lobster	2,556	2,357	2,469	2,567	2,985	3,648	3,919	4,229	3,818	4,939
Atlantic cod	1,293	1,024	1,168	1,479	1,984	1,227	1,286	726	230	264
Atlantic herring	NA	22	936	1,198	3,120	2,830	1,514	2,391	1,579	NA
Goosefish	1,226	621	325	250	250	172	153	126	162	NA
Haddock	99	73	61	53	45	18	19	45	10	10
Hake	372	157	313	222	423	322	587	1,135	393	NA
Pollock	1,997	2,566	2,025	2,456	2,017	1,042	1,732	1,049	983	629
Sea scallop	76	21	4	2	1	NA	3	12	25	27
Shrimp	567	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spiny dogfish	NA	242	NA	1,370	2,073	1,214	1,646	1,789	515	NA

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	5.62	5.34	5.07	4.78	3.99	4.07	4.17	4.06	4.35	4.71
Atlantic cod	1.48	1.69	1.69	1.56	1.30	1.78	1.94	2.41	2.38	2.17
Atlantic herring	NA	0.12	0.16	0.11	0.09	0.13	0.14	0.15	0.14	NA
Goosefish	1.21	1.26	1.15	1.16	1.12	1.23	1.36	1.21	1.15	NA
Haddock	1.38	1.76	2.01	1.70	1.52	1.57	1.91	2.13	2.16	1.74
Hake	0.75	1.05	0.78	0.75	0.51	0.74	0.76	0.42	0.95	NA
Pollock	0.57	0.59	0.45	0.45	0.64	0.81	0.78	1.17	1.15	1.37
Sea scallop	6.89	5.92	8.26	7.68	7.22	8.84	10.35	11.68	11.54	12.85
Shrimp	0.60	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spiny dogfish	NA	0.32	NA	0.31	0.27	0.24	0.27	0.23	0.19	NA

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of New Hampshire Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	219	21,860	10,242	13,184
	Private Boat	44	4,592	2,107	3,066
	Shore	10	948	389	604
Total Durable Expenditures		290	25,293	12,637	18,331
Total State Economic Impacts		563	52,693	25,375	35,185

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	9,080	4,540	Fishing Tackle	11,589
Private Boat	348	4,622	Other Equipment	3,553
Shore	534	257	Boat Expenses	13,780
Total	9,961	9,418	Vehicle Expenses	1,352
			Second Home Expenses	0
			Total Durable Expenditures	30,274
Total State Trip and Durable Goods Expenditures				49,653

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	105	90	97	63	67	46	56	58	68	50
Non-Coastal	14	15	13	8	9	7	10	9	19	11
Out-of-State	84	82	63	46	58	33	30	54	66	58
Total Anglers	203	187	173	117	134	86	96	121	153	119

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	53	92	114	90	98	62	71	55	116	105
Private	238	182	233	139	147	90	178	163	107	113
Shore	214	227	155	103	155	92	48	81	89	34
Total Trips	505	501	502	332	400	244	297	299	312	252

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic cod	H	68	66	53	81	128	80	128	64	115	45
	R	138	248	234	232	209	130	259	150	155	133
Atlantic mackerel	H	407	115	128	496	882	295	2,143	1,116	708	628
	R	16	32	9	36	82	18	189	160	14	30
Bluefin tuna	H	0	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	0	0	2	0	0	0
Bluefish	H	21	9	34	6	0	2	2	9	0	1
	R	49	24	18	3	2	0	1	4	0	1
Bottomfish, unidentified	H	0	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	0	0	0	0	0	0
Haddock	H	102	167	97	90	100	48	76	74	71	76
	R	38	109	43	18	28	11	20	114	257	425
Pollock	H	60	77	70	52	39	52	100	65	119	101
	R	35	46	17	20	49	75	105	147	238	154
Striped bass	H	25	13	7	6	9	6	32	14	18	6
	R	573	461	257	78	58	51	98	64	84	78
Winter flounder	H	1	7	10	10	10	2	12	0	0	4
	R	1	3	7	6	5	5	2	1	3	5

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## New Hampshire | Marine Economy

### New Hampshire's State Economy (% of national total)<sup>1,2</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>3</sup>
2005	39,224 (0.5%)	562,398 (0.5%)	21.03 (0.5%)	31.97 (0.5%)	56.12 (0.4%)	ds
2013	37,185 (0.5%)	551,793 (0.5%)	24.91 (0.4%)	38.93 (0.4%)	68.70 (0.4%)	ds
%Change	-5.5	-1.9	15.6	17.9	18.3	NA

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>1</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	4	4	5	ds	ds	3	7	7	6
	Receipts	842	1,087	927	ds	ds	687	856	1,166	1,239
Seafood sales, retail	Firms	11	10	11	17	14	11	11	12	15
	Receipts	1,330	1,496	1,540	1,894	1,870	1,502	2,152	2,096	1,861

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	10	10	7	7	8	8	8	8	7
	Employees	418	0	0	0	115	292	231	229	225
	Payroll	16,275	0	0	0	3,234	10,971	12,010	12,181	13,751
Seafood sales, wholesale	Establishments	10	9	8	8	8	8	7	8	9
	Employees	0	0	92	101	88	80	84	99	113
	Payroll	0	0	3,360	4,142	4,268	4,171	4,123	5,738	4,562
Seafood sales, retail	Establishments	12	15	15	14	14	12	16	9	9
	Employees	79	78	93	83	95	102	88	48	45
	Payroll	2,053	2,201	2,077	2,011	2,299	2,296	1,934	870	966

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	1	1	1	0	0	0	0	1	0
	Employees	ds	ds	ds	NA	NA	NA	NA	ds	NA
	Payroll	ds	ds	ds	NA	NA	NA	NA	ds	NA
Deep sea freight transportation	Establishments	2	2	1	1	1	1	1	1	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	0	0	0	0	0	0	0	0	0
	Employees	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Payroll	NA	NA	NA	NA	NA	NA	NA	NA	NA
Marinas	Establishments	38	35	35	37	37	35	34	31	35
	Employees	194	ds	171	173	146	135	139	131	155
	Payroll	8,871	ds	7,774	8,114	7,022	6,920	7,090	6,927	8,031
Marine cargo handling	Establishments	0	0	1	0	0	0	0	0	0
	Employees	NA	NA	ds	NA	NA	NA	NA	NA	NA
	Payroll	NA	NA	ds	NA	NA	NA	NA	NA	NA
Navigational services to shipping	Establishments	4	4	2	2	2	2	2	3	3
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Port & harbor operations	Establishments	0	0	0	0	0	0	0	2	2
	Employees	NA	NA	NA	NA	NA	NA	NA	ds	ds
	Payroll	NA	NA	NA	NA	NA	NA	NA	ds	ds
Ship & boat building	Establishments	6	6	8	9	8	7	7	7	7
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds

<sup>1</sup> ds = these data are suppressed.

<sup>2</sup> NA = not applicable.

<sup>3</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

# Tables | Rhode Island



**2014 Economic Impacts of the Rhode Island Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	10,174	1,096,821	273,316	428,503	5,370	305,502	110,683	154,995
Commercial Harvesters	2,402	148,791	45,084	70,192	2,402	148,791	45,084	70,192
Seafood Processors & Dealers	515	53,555	20,753	26,968	336	34,998	13,562	17,624
Importers	2,348	645,992	103,532	196,927	-	-	-	-
Seafood Wholesalers & Distributors	523	62,480	22,138	29,129	137	16,327	5,785	7,612
Retail	4,386	186,004	81,808	105,287	2,495	105,386	46,253	59,568

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	91,408	99,365	72,282	66,085	61,657	62,739	75,929	81,136	86,371	86,211
Finfish & Other	24,672	29,680	24,839	22,792	23,421	23,040	24,934	28,671	29,519	31,591
Shellfish	66,736	69,685	47,443	43,293	38,236	39,698	50,995	52,464	56,852	54,620
<b>Key Species</b>										
All other flounders	1,734	3,503	3,585	2,171	1,455	593	806	1,024	2,124	2,696
American lobster	23,009	17,333	12,151	12,976	11,264	12,404	12,765	12,119	9,732	11,788
Atlantic herring	1,075	2,947	982	631	1,260	1,423	1,343	2,174	4,907	2,304
Atlantic mackerel	2,888	4,138	1,182	882	3,301	1,886	100	2,804	339	309
Goosefish	4,549	4,525	3,540	3,590	3,022	2,973	4,600	3,844	2,725	2,990
Quahog clam	3,438	3,529	4,010	3,273	2,849	3,293	3,920	5,169	5,033	5,122
Scups or porgies	2,319	2,927	2,767	2,324	2,640	2,833	3,312	3,904	3,666	4,100
Sea scallop	13,268	20,822	8,963	2,170	2,342	2,156	6,834	9,191	18,639	10,286
Squid	16,973	22,601	15,339	17,687	15,249	12,590	20,380	12,744	13,208	17,715
Summer flounder	5,866	5,093	4,346	4,485	4,502	5,534	6,408	6,937	6,751	7,295

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	97,565	113,025	75,271	72,027	84,041	77,738	78,747	85,232	89,886	91,379
Finfish & Other	47,820	60,867	40,940	34,570	46,549	42,595	42,250	52,837	63,875	57,158
Shellfish	49,745	52,158	34,331	37,458	37,492	35,143	36,498	32,396	26,011	34,221
<b>Key Species</b>										
All other flounders	1,315	1,850	1,871	1,144	1,027	358	615	663	1,367	1,857
American lobster	4,344	3,752	2,293	2,772	2,840	2,929	2,754	2,706	2,156	2,425
Atlantic herring	11,605	23,150	7,537	4,504	9,528	8,479	8,729	13,839	28,330	16,505
Atlantic mackerel	8,075	10,143	4,242	2,385	9,057	4,356	162	5,497	714	539
Goosefish	4,143	3,864	3,209	3,225	2,841	2,556	3,242	2,873	2,818	2,892
Quahog clam	642	385	610	556	511	599	666	903	818	768
Scups or porgies	3,424	3,643	3,932	2,151	3,619	4,299	6,335	6,309	7,346	6,932
Sea scallop	1,612	3,283	1,357	310	356	267	690	944	1,646	842
Squid	22,135	39,617	23,718	26,417	26,452	19,799	25,996	11,689	12,609	24,936
Summer flounder	2,925	2,123	1,516	1,473	1,794	2,289	2,824	2,409	2,193	2,055

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
All other flounders	1.32	1.89	1.92	1.90	1.42	1.66	1.31	1.54	1.55	1.45
American lobster	5.30	4.62	5.30	4.68	3.97	4.24	4.64	4.48	4.51	4.86
Atlantic herring	0.09	0.13	0.13	0.14	0.13	0.17	0.15	0.16	0.17	0.14
Atlantic mackerel	0.36	0.41	0.28	0.37	0.36	0.43	0.62	0.51	0.47	0.57
Goosefish	1.10	1.17	1.10	1.11	1.06	1.16	1.42	1.34	0.97	1.03
Quahog clam	5.35	9.16	6.57	5.88	5.58	5.50	5.89	5.72	6.15	6.67
Scups or porgies	0.68	0.80	0.70	1.08	0.73	0.66	0.52	0.62	0.50	0.59
Sea scallop	8.23	6.34	6.61	7.00	6.58	8.07	9.90	9.73	11.32	12.22
Squid	0.77	0.57	0.65	0.67	0.58	0.64	0.78	1.09	1.05	0.71
Summer flounder	2.01	2.40	2.87	3.04	2.51	2.42	2.27	2.88	3.08	3.55



**2014 Economic Impacts of Rhode Island Recreational Fishing Expenditures (thousands of dollars)**

	#Jobs	Sales	Income	Value Added	
Trip Impacts by Fishing Mode	For-Hire	140	14,507	6,835	8,873
	Private Boat	173	17,470	7,334	10,846
	Shore	80	7,990	3,402	5,014
Total Durable Expenditures	4,046	381,388	181,672	276,195	
Total State Economic Impacts	4,439	421,355	199,243	300,928	

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	7,716	1,385	Fishing Tackle	91,396
Private Boat	7,296	10,902	Other Equipment	28,325
Shore	4,951	3,576	Boat Expenses	227,529
Total	19,963	15,863	Vehicle Expenses	22,302
			Second Home Expenses	966
			Total Durable Expenditures	370,518
Total State Trip and Durable Goods Expenditures				406,344

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	145	177	171	169	111	161	105	99	129	160
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	241	291	229	297	209	225	190	169	255	304
Total Anglers	386	468	400	466	320	386	295	268	384	464

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	54	53	74	67	56	41	39	40	48	52
Private	793	642	590	716	423	531	536	461	587	491
Shore	757	874	759	673	507	667	539	575	595	556
Total Trips	1,604	1,569	1,423	1,456	986	1,239	1,114	1,076	1,230	1,099

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic bonito	H	1	0	5	0	0	0	0	0	4	1
	R	0	0	4	1	0	0	0	0	5	6
Atlantic cod	H	1	4	1	2	4	2	4	16	0	12
	R	3	2	0	1	7	12	14	1	0	5
Black seabass	H	86	41	44	52	36	161	50	102	75	214
	R	64	161	117	128	133	212	221	767	678	859
Bluefish	H	345	471	295	282	64	103	124	673	324	136
	R	526	555	686	491	160	93	327	427	629	114
Porgies (scup)	H	430	470	353	633	140	398	568	497	818	976
	R	690	802	613	1,386	332	536	663	675	615	578
Striped bass	H	110	76	102	51	71	70	89	62	219	103
	R	634	835	678	417	399	183	215	247	826	163
Summer flounder	H	165	264	176	204	72	118	162	103	127	185
	R	280	1,129	612	848	383	230	724	381	527	417
Winter flounder	H	0	0	1	1	4	2	0	0	0	0
	R	0	0	3	1	1	1	0	2	0	1
Wrasses (tautog)	H	161	81	125	103	86	197	20	104	128	68
	R	319	198	267	187	188	187	138	214	249	122
Yellowfin tuna	H	1	0	0	0	0	0	0	0	6	1
	R	2	0	0	0	0	0	0	0	0	0

<sup>1</sup> NA = not applicable because all Rhode Island residents are considered coastal county residents.

<sup>2</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## Rhode Island | Marine Economy

### Rhode Island's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	30,331 (0.4%)	442,291 (0.4%)	15.76 (0.4%)	24.99 (0.4%)	45.25 (0.3%)	3.7
2013	28,026 (0.4%)	408,489 (0.3%)	17.78 (0.3%)	29.48 (0.3%)	53.30 (0.3%)	3.2
%Change	-8.2	-8.3	11.4	15.2	15.1	-13.5

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	6	8	8	7	9	6	9	10	8
	Receipts	2,024	1,662	2,291	1,376	1,045	907	1,168	1,441	1,393
Seafood sales, retail	Firms	16	24	23	19	16	17	25	20	22
	Receipts	2,215	3,266	3,536	2,748	2,821	2,769	3,033	2,536	2,501

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	7	7	6	8	7	5	4	3	3
	Employees	270	231	196	270	275	193	178	0	0
	Payroll	5,549	6,137	6,876	6,354	5,821	6,096	5,544	0	0
Seafood sales, wholesale	Establishments	32	36	35	29	34	32	34	32	31
	Employees	206	188	224	226	202	204	230	278	182
	Payroll	9,851	10,209	11,447	10,505	9,534	9,815	10,264	13,064	8,412
Seafood sales, retail	Establishments	31	28	27	23	24	26	23	24	24
	Employees	140	0	109	94	127	113	109	111	113
	Payroll	2,447	0	2,207	2,027	2,398	2,309	2,232	2,388	2,610

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	1	1	1	2	1	1	2	1	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Deep sea freight transportation	Establishments	2	2	2	2	2	2	2	2	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	0	0	1	1	1	1	1	1	2
	Employees	NA	NA	ds	ds	ds	ds	ds	ds	ds
	Payroll	NA	NA	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	66	63	68	73	70	72	71	67	71
	Employees	408	457	463	476	459	428	460	424	466
	Payroll	15,843	18,748	22,029	23,204	21,372	22,227	22,618	20,811	24,214
Marine cargo handling	Establishments	1	2	2	5	5	5	5	4	4
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Navigational services to shipping	Establishments	8	7	7	8	8	8	8	7	7
	Employees	ds	ds	ds	ds	ds	ds	107	ds	ds
	Payroll	ds	ds	ds	5,904	3,728	3,955	4,002	3,272	ds
Port & harbor operations	Establishments	2	2	2	2	1	1	1	5	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	36	38	37	39	33	29	30	37	33
	Employees	ds	1,325	1,374	1,342	1,085	954	916	717	768
	Payroll	ds	52,682	55,788	54,225	41,246	40,004	33,316	32,070	34,483

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.

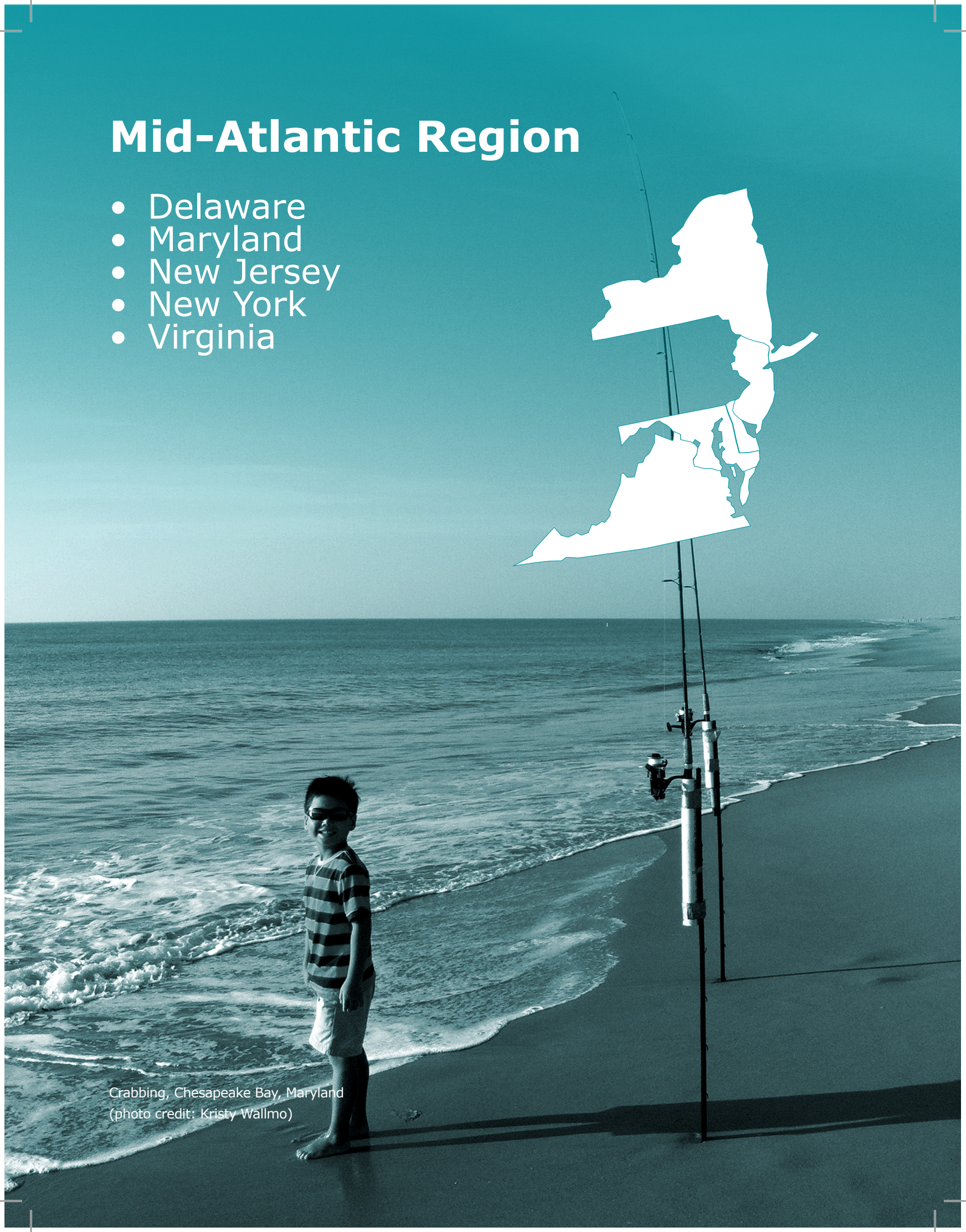


# Mid-Atlantic Region

- Delaware
- Maryland
- New Jersey
- New York
- Virginia



Crabbing, Chesapeake Bay, Maryland  
(photo credit: Kristy Wallmo)





### MANAGEMENT CONTEXT

The Mid-Atlantic Region includes Delaware, Maryland, New Jersey, New York and Virginia. Federal fisheries in this region are managed by the Mid-Atlantic Fishery Management Council (MAFMC) and NOAA Fisheries under seven fishery management plans (FMPs). Two of these FMPs are developed in conjunction with the New England Fishery Management Council (NEFMC). The MAFMC is the lead council for the Spiny Dogfish FMP; the NEFMC is the lead for the Monkfish FMP.

#### Mid-Atlantic Region FMPs

1. Atlantic mackerel squids and butterfish
2. Atlantic bluefish
3. Spiny dogfish (with the NEFMC)
4. Summer flounder, scup and black sea bass
5. Surfclam and ocean quahog
6. Golden tilefish
7. Monkfish (with the NEFMC)

None of the stocks or stock complexes covered in these FMPs were listed as overfished or experiencing overfishing in 2014.

### CATCH SHARE PROGRAMS

Two catch share programs operate in the Mid-Atlantic: 1) Atlantic Surfclam and Ocean Quahog Individual Transferable Quota (ITQ) Program; and 2) Golden Tilefish Individual Fishing Quota (IFQ) Program. Following is a description of these catch share programs and their performance. Because the surfclam and ocean quahog fisheries are prosecuted as independent fisheries despite being in the same ITQ program, they are discussed separately.

**The Atlantic Surfclam ITQ Program** was implemented in 1990 to conserve the surfclam resource and stabilize harvest rates; simplify regulatory requirements to minimize public and private management costs; promote economic efficiency by bringing harvest capacity in line with processing and biological capacity; and create a management approach that is flexible and adaptive to short-term events or circumstances. The key performance indicators of this program show that compared with the Baseline period (the 3-year period prior to implementation), 2013 quota and inflation-adjusted revenue per

vessel increased. However, landings, the number of active vessels, and inflation-adjusted total revenue decreased.

**The Atlantic Ocean Quahog ITQ Program** was implemented in 1990 to conserve the quahog resource and stabilize harvest rates; simplify regulatory requirements to minimize public and private management costs; promote economic efficiency by bringing harvest capacity in line with processing and biological capacity; and create a management approach that is flexible and adaptive to short-term events or circumstances. The key performance indicators of this program show that relative to the Baseline period (the 3-year period prior to implementation), 2013 inflation-adjusted revenue per vessel increased. However, quota, landings, number of active vessels, and inflation-adjusted total revenue decreased.

**The Golden Tilefish IFQ Program** was implemented in 2009 to reduce over-capacity and eliminate problems associated with the race to fish golden tilefish. This IFQ program is unique because many key events occurred outside the traditional management process. Prior to the implementation of the IFQ program, fishermen crafted internal agreements that promoted cooperation. Their cooperative operations helped fishing businesses stay viable under new regulations, which laid the foundation for implementing the IFQ program. The key performance indicators of this program show that relative to the Baseline period (the 3-year period prior to implementation), 2013 quota, landings, inflation-adjusted revenue, and inflation-adjusted revenue per vessel increased. However, the number of active vessels decreased.

### POLICY UPDATES

In June 2015, the MAFMC approved an amendment to the mackerel, squid and butterfish FMP to protect deep sea corals from the impacts of bottom-tending fishing gear in the Mid-Atlantic. If approved by the Secretary of Commerce, the amendment will create "deep sea coral zones" in areas where corals have been observed or where they are likely to occur. Within these zones, fishermen will not be allowed to use any type of bottom-tending fishing gear, such as trawls, dredges, bottom longlines and traps. In total, the areas proposed for deep sea coral zone designation encompass more than 38,000 square miles.

The measures approved by the MAFMC include the designation of fifteen “discrete coral zones,” which are areas of known or highly likely coral presence. Most of these areas are located around underwater canyons or slope areas along the continental shelf edge. In addition, the MAFMC voted to establish a “broad coral zone” encompassing a much larger area beginning around the 450-meter depth contour and extending out to the 200-mile limit of the U.S. exclusive economic zone (EEZ).

The MAFMC approved an exemption from gear restrictions for the red crab fishery. This exemption would apply indefinitely in the broad zones and for at least two years in the discrete zones. The MAFMC also approved a provision that would allow vessel transit through or across all deep sea coral zones with a requirement that the vessel’s fishing gear be stowed during transit. The amendment would also require the use of Vessel Monitoring Systems for all Illex squid moratorium vessels regardless of whether fishing activity is occurring within or outside any proposed deep sea coral zones.

### COMMERCIAL FISHERIES

In 2014, commercial fishermen in the Mid-Atlantic Region landed 591 million pounds of fin fish and shellfish, earning \$471 million in landings revenue. Landings revenue was dominated by sea scallop (\$126 million) and blue crab (\$91 million). These species commanded ex-vessel prices of \$12.28 and \$1.68 per pound, respectively, and made up 46 percent of total landings revenue in the Mid-Atlantic Region. Virginia (\$168 million) and New Jersey (\$152 million) had the highest landings revenue in the region in 2014. Delaware had the lowest landings revenue (\$7 million). In terms of pounds landed, Virginia (388 million pounds) had the highest landings, followed by New Jersey (124 million pounds). Delaware had the lowest landings at 4 million pounds.

#### Key Mid-Atlantic Region Commercial Species

- American lobster
- Atlantic surfclam
- Blue crab
- Eastern oyster
- Menhaden
- Quahog clam
- Sea scallop
- Squid
- Striped bass
- Summer flounder

### Economic Impacts

In this report, the U.S. seafood industry includes the commercial harvest sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.<sup>1</sup> In 2014, the Mid-Atlantic Region’s seafood industry generated \$6.9 billion in sales impacts in New Jersey, \$6.9 billion in sales impacts in New York, \$1.5 billion in sales impacts in Maryland, \$1.3 billion in sales impacts in Virginia, and \$73 million in sales impacts in Delaware. The largest job impacts were generated in New York (57,000 jobs) and New Jersey (44,000 jobs). The largest income (\$1.5 billion) and value-added (\$2.5 billion) impacts were generated in New Jersey. The smallest impacts were generated in Delaware with 500 jobs, \$14 million in income, and \$24 million in value-added impacts.

The sector that generated the greatest employment impacts by state was the retail sector with 29,000 jobs in New York. More sales impacts were generated by importers in New York than any other sector in any another state in the region at \$5.3 billion. The greatest value-added impacts were also generated by importers in New York (\$1.6 billion).

### Landings Revenue

Landings revenue in the Mid-Atlantic Region totaled \$471 million in 2014. This was a 7 percent increase (a 9% decrease in real terms after adjusting for inflation) from 2005 levels and an 8 percent increase from 2013. Virginia (\$168 million) and New Jersey (\$152 million) had the highest landings revenue in the region, while Delaware had the lowest (\$7 million). Totaling \$353 million in 2014, shellfish revenue experienced a 4 percent increase (an 11% decrease in real terms) from 2005 to 2014 and a 14 percent increase from 2013 to 2014. New Jersey earned the most from shellfish (\$127 million), followed by Virginia (\$114 million) and Maryland (\$73 million). Virginia and New Jersey earned the most from finfish landings revenue, \$55 million and \$25 million, respectively.

Sea scallop (\$126 million) and blue crab (\$91 million) had the highest landings revenue in the Mid-Atlantic Region in 2014. From 2005 to 2014, species or species groups with large increases in landings revenue included oysters (696%, 577% in real terms), striped bass (38%, 18% in real terms), and quahog clam (67%,

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).



## Mid-Atlantic Region | Regional Summary

42% in real terms). Key species or species groups for which landings revenues increased between 2013 and 2014 included oysters (43%), sea scallop (25%), and blue crab (5%); all other species experienced landings revenue declines. Surging production in Virginia from aquaculture operations accounted for the majority of oyster landings revenue growth. Notably large decreases in landings revenue between 2005 and 2014 were experienced by Atlantic surfclam (-53%, -60% in real terms), American lobster (-45%, -53% in real terms), and sea scallop (-31%, -41% in real terms). Species or species groups with large decreases in landings revenue between 2013 and 2014 included squid (-31%), summer flounder (-23%), and striped bass (-21%).

### Landings

Fishermen in the Mid-Atlantic Region landed 591 million pounds of finfish and shellfish in 2014. This was a 17 percent decrease from 2005 levels and a 2 percent increase from 2013. Virginia (388 million pounds) and New Jersey (124 million pounds) had the highest landings while Delaware had the lowest (4 million pounds). Finfish landings contributed 77 percent of total landings in the Mid-Atlantic Region (454 million pounds) in 2014. Finfish landings experienced a 12 percent decrease from 2005 to 2014 and a 2 percent increase from 2013. Shellfish landings experienced a 28 percent decrease from 2005 to 2014 and were virtually unchanged from 2013 levels.

Menhaden had the highest annual landings (378 million pounds) in the Mid-Atlantic in 2014 and accounted for 64 percent of total landings in the region. From 2005 to 2014, species or species groups with large increases in landings included oysters (339%) and quahog clam (24%). Species or species groups with large increases in landings between 2013 and 2014 included oysters (22%) and sea scallop (16%). Sea scallop (-58%), Atlantic surfclam (-58%), American lobster (-49%), and summer flounder (-41%) experienced sizable declines in landings between 2005 and 2014. Sea scallop landings declined during this 10-year period primarily due to a 35 percent reduction in the catch limit that was implemented in 2012 to protect young sea scallops and prevent localized overfishing. Species or species groups with large decreases in landings from 2013 and 2014 include squid (-44%) and summer flounder (-38%).

### Commercial Fisheries Facts

#### Landings Revenue

- On average between 2005 and 2014, the key species or species groups accounted for 84 percent of total revenue, generating \$389 million in the Mid-Atlantic Region.
- Sea scallop had higher landings revenues than any other species or species group, averaging \$158 million in landings revenue from 2005 to 2014.

#### Landings

- Key species or species groups contributed an average of 85 percent annually to total landings between 2005 and 2014, with an annual average of 600 million pounds.
- Menhaden contributed the most to landings in the region, averaging 431 million pounds from 2005 to 2014.

#### Prices

- Sea scallop had the highest average annual ex-vessel price per pound from 2005 to 2014: \$8.40.
- Menhaden had the lowest average annual ex-vessel price per pound from 2005 to 2014: \$0.07.

### Prices

The ex-vessel prices for all Mid-Atlantic key species and species groups in 2014 (seven of the species in real terms) were higher than their 10-year average. Ex-vessel prices for oysters (81%, 54% in real terms), blue crab (68%, 42% in real terms), and sea scallop (66%, 41% in real terms) increased the most between 2005 and 2014. Relative to ex-vessel prices in 2013, summer flounder (24%) and squid (23%) had the greatest increases.

### RECREATIONAL FISHERIES

In 2014, 2.2 million recreational anglers took 14.3 million fishing trips in the Mid-Atlantic Region. About 94 percent of these anglers were residents of a regional coastal county. Of the total fishing trips taken, 53 percent of them were taken from the private boat sector and another 38 percent from the shore sector. Summer flounder was the most frequently caught species or species group with 17.6 million fish caught in 2014. This figure represented 29 percent of total fish caught in the Region.

### Economic Impacts and Expenditures

The contribution of recreational fishing activities<sup>2</sup> in the

Mid-Atlantic Region are reported in terms of economic impacts at the state level (employment, sales, income and value-added impacts) and expenditures on fishing trips and durable equipment at the regional level. Employment impacts in New Jersey were the highest in the region with approximately 19,962 full- and part-time jobs generated by recreational fishing activities in the state. New York (9,561 jobs) and Maryland (7,721 jobs) followed in terms of employment impacts.

**Key Mid-Atlantic Region Recreational Species**

- Atlantic croaker
- Bluefish
- Black seabass
- Scup
- Spot
- Striped bass
- Summer flounder
- Tautog
- Winter flounder
- Weakfish drum

In addition to jobs, the contribution of recreational fishing activities to the Mid-Atlantic Region’s economy can be measured in terms of sales impacts and the contribution of these activities to gross domestic product (value-added impacts). In 2014, sales impacts were the highest in New Jersey (\$2 billion in sales impacts), followed by New York (\$1 billion). Value-added impacts were the highest in New Jersey (\$1.5 billion in value added impacts), followed by New York (\$0.7 billion).

The total saltwater fishing trip and durable equipment expenditures were \$4 billion across the Mid-Atlantic Region in 2014. Approximately 80 percent of these expenditures were related to durable equipment purchases. The largest durable goods expenditures were for boat expenses (\$1.9 billion), followed by fishing tackle (\$841.1 million) and other equipment (\$285.8 million). Fishing trip-related expenditures by the Mid-Atlantic Region’s non-residents totaled \$266.6 million, of which the greatest portion can be attributed to trips in the private boat sector (\$117.1 million). Residents of the Mid-Atlantic Region spent \$530.2 million on trip-related expenses with the greatest of these expenses related to the private boat sector (\$308 million).

**Participation**

There were 2.2 million recreational anglers who fished in the Mid-Atlantic Region in 2014. This was a 31 percent decrease from 2005 (3.3 million anglers). These anglers

were Mid-Atlantic Region residents from either a coastal (2.1 million anglers) or non-coastal county (130,000 anglers). About 94 percent of total anglers in 2014 were residents of a coastal county. Coastal county angler participation in 2014 decreased 30 percent from 2005 (3 million anglers) and increased 1 percent between 2013 and 2014. Non-coastal county angler participation decreased 48 percent from 2005 (252,000 anglers) and decreased 6 percent from 2013 (138,000 anglers).

**Recreational Fishing Facts**

**Participation**

- An average of 2.7 million anglers fished in the Mid-Atlantic Region annually from 2005 to 2014.
- Residents of coastal counties within the Mid-Atlantic Region accounted for an average of 93 percent of total anglers annually during the 10-year period.

**Fishing trips**

- In the Mid-Atlantic Region, an average of 18 million fishing trips were taken annually from 2005 to 2014.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 10.1 million and 6.7 million fishing trips, respectively, from 2005 to 2014.

**Harvest and Release**

- Summer flounder was the most commonly caught key species or species group, averaging 19.3 million fish over the 10-year period. Croaker (16.1 million fish) and spot (9 million fish) were the next most frequently caught.
- Of the 10 commonly caught key species or species groups, nine were released more of 10 than harvested during this period.

**Fishing Trips**

Recreational fishermen took 14.3 million fishing trips in the Mid-Atlantic Region in 2014. This was a 31 percent decrease from 2005 and a 1 percent increase from 2013. Approximately 53 percent of the saltwater trips were from the private boat sector. The other most popular mode of fishing was shore with 38 percent of trips in 2014.

**Harvest and Release**

The Mid-Atlantic Region’s species and species groups caught most frequently in 2014 were summer flounder (17.6 million fish), drum (Atlantic croaker, 10.8 million

<sup>2</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>).

## Mid-Atlantic Region | Regional Summary

fish), and drum (spot, 7.4 million fish). Between 2005 and 2014, nine of the Mid-Atlantic Region's key species or species groups showed decreases in catch totals, with the largest decreases occurring among weakfish drum (-92%), winter flounder (-84%), and drum (Atlantic croaker, -52%). Increases in the number of fish caught between 2005 and 2014 were observed in wrasses (tautog, 104%).

### MARINE ECONOMY

Across all sectors of the economy in the Mid-Atlantic Region,<sup>3</sup> about 17 million full- and part-time employees were employed by about 1.1 million establishments in 2013. Annual payroll totaled \$945 billion. Combined employee compensation in the Mid-Atlantic Region totaled \$1.5 trillion. The combined gross state product of all states totaled about \$2.7 trillion.<sup>4</sup>

The Commercial Fishing Location Quotient (CFLQ) provides a measure of the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>5</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The national CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

In 2013, the CFLQ for New Jersey was the highest in the region at 1.02. New Jersey's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 1.02 times higher than the level of employment in these industries nationwide. The 2013 CFLQ in Virginia was second highest in the Region at 0.68.

### Seafood Sales and Processing

The number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging in the Mid-Atlantic Region increased 59 percent to 331 firms in 2013, relative to 2005. The greatest number of these non-employer firms was located in New York (150). Annual receipts increased 83 percent to about \$22 million in 2013 (a 41% increase in real terms). Employer

establishments engaged in seafood product preparation and packaging decreased 34 percent from 2005 to 2013, to 65 firms. The biggest number of Mid-Atlantic Region employer firms in this sector was located in Virginia (18). The number of employees decreased 46 percent to 2,041. Annual payroll decreased 18 percent to about \$89 million in 2013 (a 37% decrease in real terms).

Employer establishments in the wholesale seafood sales sector decreased 4 percent from 2005 to 2013, to 481. The largest number of wholesaling establishments was located in New York (264). The number of employees decreased 11 percent to 3,821. Annual payroll increased 2 percent to about \$170 million in 2013 (a 21% decrease in real terms).

The number of non-employer firms in the retail seafood sector in the Mid-Atlantic Region decreased 3 percent to 468 firms in 2013, relative to 2005. The greatest number of these non-employer firms was located in New York (197). Annual receipts decreased 25 percent to about \$38 million in 2013 (a 43% decrease in real terms). Employer establishments engaged in seafood retail decreased 4 percent from 2005 to 2013, to 672 firms. The biggest number of Mid-Atlantic Region employer firms in this sector was located in New York (399). The number of employees increased 2 percent to 3,103. Annual payroll increased 32 percent to about \$77 million in 2013 (a 1% increase in real terms).

### Transport, Support and Marine Operations

The size of the Transport, Support and Marine Operations sectors in the Mid-Atlantic Region is difficult to assess because much of the state-level data is suppressed for confidentiality purposes. It is clear, however, that these sectors play an important role in the regional economy. For example, there were 932 establishments classified as marinas, employing 4,926 workers and spending \$203 million on payroll in 2013 across all five states in the region. The Navigational Services to Shipping sector included 88 establishments, employment of 1,423 workers, and payroll of \$117 million across all Mid-Atlantic states. In addition, the Marine Cargo Handling sector consisted of 20 establishments employing 6,912 workers and contributing \$539 million in payroll in New Jersey alone.

<sup>3</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

<sup>4</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).

<sup>5</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).

# Tables | Mid-Atlantic Region





## Mid-Atlantic Region | Commercial Fisheries

### 2014 Economic Impacts of the Mid-Atlantic Seafood Industry (thousands of dollars)

	Landings Revenue	With Imports				Without Imports			
		#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Delaware	6,587	456	72,919	13,996	23,878	285	32,257	6,832	10,956
Maryland	90,252	14,636	1,461,779	378,307	577,856	8,332	433,330	159,546	217,284
New Jersey	151,930	44,433	6,862,897	1,529,212	2,486,353	7,291	580,593	192,946	277,011
New York	53,848	56,735	6,858,434	1,466,405	2,426,360	4,302	197,521	68,630	95,997
Virginia	168,239	17,253	1,256,929	396,372	568,765	14,618	798,612	304,860	412,727

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	440,045	374,180	423,232	452,636	435,847	521,140	552,315	510,297	435,977	470,855
Finfish & Other	101,499	106,388	103,874	91,455	101,902	111,551	119,981	131,010	125,391	117,824
Shellfish	338,547	267,793	319,358	361,181	333,946	409,589	432,334	379,287	310,585	353,031
<b>Key Species</b>										
American lobster	6,696	9,105	8,744	7,213	5,989	6,265	4,692	5,271	4,063	3,703
Atlantic surfclam	27,084	27,241	32,479	30,019	26,426	19,940	18,737	16,501	13,688	12,850
Blue crab	71,073	55,628	69,498	80,912	80,019	127,737	101,630	101,942	86,787	90,710
Eastern oyster	6,703	6,343	9,039	11,205	9,356	12,038	13,043	20,231	37,230	53,379
Menhaden	28,188	25,104	29,918	24,457	28,581	40,315	39,666	40,043	33,780	33,177
Quahog clam	20,773	20,230	23,601	35,853	23,022	28,880	27,607	29,502	35,902	34,733
Sea scallop	181,327	121,121	147,053	165,916	161,814	184,288	227,443	168,921	100,411	125,945
Squid	9,163	7,937	7,443	7,724	7,158	12,031	20,646	17,819	12,078	8,306
Striped Bass	11,335	9,958	10,993	10,671	11,459	9,450	10,520	14,622	19,792	15,679
Summer flounder	13,615	13,432	10,855	9,693	9,980	12,849	15,614	17,194	17,131	13,232

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	708,724	690,884	749,980	687,788	694,960	812,857	797,355	759,928	582,307	591,201
Finfish & Other	517,880	510,978	556,720	482,151	490,235	578,845	575,446	568,905	445,270	454,444
Shellfish	190,843	179,906	193,259	205,638	204,725	234,012	221,909	191,022	137,037	136,756
<b>Key Species</b>										
American lobster	1,585	1,772	1,604	1,520	1,576	1,549	1,086	1,271	980	811
Atlantic surfclam	50,921	46,631	53,952	48,099	41,692	30,946	30,272	26,535	22,788	21,430
Blue crab	70,983	61,862	65,070	67,975	76,097	119,286	104,414	88,964	55,424	53,969
Eastern oyster	1,202	962	2,388	1,778	1,438	1,770	2,038	2,749	4,311	5,274
Menhaden	412,672	400,662	472,086	397,537	395,469	499,578	496,829	492,532	366,343	377,518
Quahog clam	3,735	3,568	4,115	5,246	3,255	3,685	3,551	3,730	4,586	4,617
Sea scallop	24,526	18,747	22,793	24,355	25,646	23,998	23,385	17,627	8,855	10,256
Squid	12,260	10,520	8,607	8,241	8,310	26,822	33,333	26,069	14,549	8,151
Striped Bass	5,706	4,741	5,477	5,693	5,852	5,582	5,461	5,589	4,709	4,762
Summer flounder	8,360	6,608	4,725	4,260	5,137	6,384	8,672	7,795	8,010	4,970

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	4.22	5.14	5.45	4.75	3.80	4.04	4.32	4.15	4.14	4.57
Atlantic surfclam	0.53	0.58	0.60	0.62	0.63	0.64	0.62	0.62	0.60	0.60
Blue crab	1.00	0.90	1.07	1.19	1.05	1.07	0.97	1.15	1.57	1.68
Eastern oyster	5.58	6.60	3.79	6.30	6.51	6.80	6.40	7.36	8.64	10.12
Menhaden	0.07	0.06	0.06	0.06	0.07	0.08	0.08	0.08	0.09	0.09
Quahog clam	5.56	5.67	5.74	6.83	7.07	7.84	7.77	7.91	7.83	7.52
Sea scallop	7.39	6.46	6.45	6.81	6.31	7.68	9.73	9.58	11.34	12.28
Squid	0.75	0.75	0.86	0.94	0.86	0.45	0.62	0.68	0.83	1.02
Striped Bass	1.99	2.10	2.01	1.87	1.96	1.69	1.93	2.62	4.20	3.29
Summer flounder	1.63	2.03	2.30	2.28	1.94	2.01	1.80	2.21	2.14	2.66

**2014 Economic Impacts of the Mid-Atlantic Recreational Fishing Expenditures (thousands of dollars, trips)**

	Trips	#Jobs	Sales	Income	Value Added
Delaware	868	1,562	142,279	61,959	98,343
Maryland	2,473	7,721	726,850	338,785	513,107
New Jersey	4,869	19,962	2,036,835	956,242	1,456,978
New York	3,955	9,561	976,928	466,515	718,728
Virginia	2,182	5,218	473,659	212,615	335,482

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	76,521	109,651	Fishing Tackle	841,101
Private Boat	117,073	307,983	Other Equipment	285,788
Shore	72,962	112,595	Boat Expenses	1,898,082
Total	266,556	530,229	Vehicle Expenses	194,767
			Second Home Expenses	15,083
			Total Durable Expenditures	3,234,821
Total State Trip and Durable Goods Expenditures				4,031,606

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	3,002	2,876	3,234	2,823	2,437	2,598	2,244	2,092	2,081	2,111
Non-Coastal	252	224	212	197	186	177	146	175	138	130
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	3,254	3,100	3,446	3,020	2,623	2,775	2,390	2,267	2,219	2,241

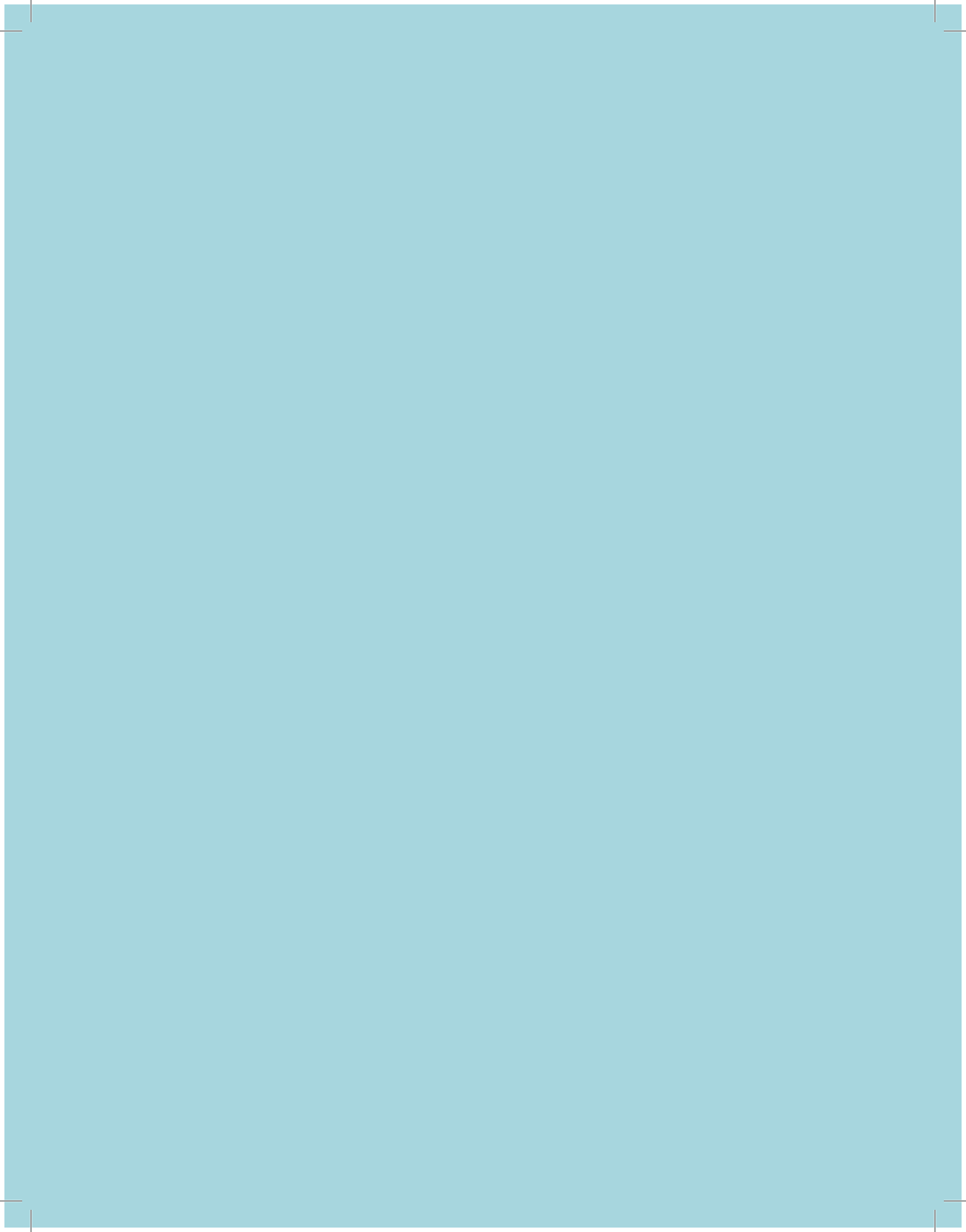
**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	1,270	1,338	1,690	1,145	1,110	874	1,050	952	1,365	1,259
Private	11,900	11,862	12,371	11,566	9,709	9,367	8,512	7,676	6,852	7,633
Shore	7,667	7,370	8,125	8,004	6,196	6,346	6,412	5,806	6,000	5,455
Total Trips	20,837	20,570	22,186	20,715	17,015	16,587	15,974	14,434	14,217	14,347

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black seabass	H	996	1,118	1,302	927	1,334	1,317	533	1,134	786	999
	R	5,412	5,737	6,404	8,475	6,273	6,459	3,204	7,666	5,113	4,832
Bluefish	H	4,671	3,902	4,946	3,517	2,934	2,558	2,467	2,640	2,167	3,215
	R	6,641	5,697	8,013	7,212	4,457	3,937	4,243	4,269	2,461	4,036
Drum (Atlantic croaker)	H	10,494	9,252	8,582	9,980	7,308	6,020	3,992	4,789	6,581	5,218
	R	12,242	7,419	11,026	12,910	9,404	6,232	5,389	8,429	10,520	5,623
Drum (spot)	H	4,769	6,659	11,997	6,557	4,347	3,699	4,032	2,850	5,815	5,520
	R	4,755	2,885	3,940	4,491	2,238	2,573	2,609	2,642	5,802	1,833
Drum (weakfish)	H	1,103	555	333	372	38	14	7	158	48	20
	R	1,969	2,051	1,037	1,987	178	458	467	957	212	215
Porgies (scup)	H	993	2,005	1,698	1,544	1,637	2,736	770	713	1,242	1,178
	R	2,254	3,543	2,501	3,172	2,292	2,413	1,041	1,628	1,967	1,732
Striped bass	H	1,602	2,027	1,776	1,682	1,388	1,406	1,655	949	1,421	1,287
	R	8,032	9,227	7,729	4,789	3,802	3,468	3,781	3,411	4,737	4,632
Summer flounder	H	3,337	3,197	2,544	1,723	1,563	1,227	1,511	1,967	2,060	1,996
	R	20,358	14,547	16,577	18,432	21,371	21,400	18,467	13,317	12,160	15,602
Winter flounder	H	133	325	107	44	76	55	93	44	6	38
	R	221	189	41	32	136	103	126	36	33	20
Wrasses (tautog)	H	279	678	727	669	693	762	351	166	237	511
	R	859	2,006	2,201	1,978	1,912	2,317	1,529	1,109	1,221	1,810

<sup>1</sup> NA = data are not available because out-of-state resident information is collected for individual states but does not specify whether an angler resides in a region.



# Tables | Delaware



## Delaware | Commercial Fisheries

### 2014 Economic Impacts of the Delaware Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	456	72,919	13,996	23,878	285	32,257	6,832	10,956
Commercial Harvesters	139	12,069	2,872	3,889	139	12,069	2,872	3,889
Seafood Processors & Dealers	30	5,322	936	1,800	26	4,673	822	1,581
Importers	125	34,479	5,526	10,511	-	-	-	-
Seafood Wholesalers & Distributors	38	5,120	1,947	2,321	18	2,361	898	1,070
Retail	123	15,930	2,716	5,357	101	13,155	2,240	4,417

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	6,113	5,692	7,931	6,900	7,543	7,845	7,092	8,464	7,422	6,587
Finfish & Other	1,273	1,330	1,300	1,100	1,068	1,074	1,329	1,220	1,794	1,526
Shellfish	4,840	4,361	6,631	5,801	6,475	6,772	5,763	7,244	5,627	5,061
<b>Key Species</b>										
American eel	100	275	292	190	134	206	274	159	244	171
Black sea bass	157	190	198	156	25	8	2	-	2	NA
Blue crab	3,429	2,961	5,329	4,605	5,435	5,957	4,819	6,664	4,576	3,762
Eastern oyster	485	459	490	410	334	404	347	345	407	420
Quahog clam	220	193	181	127	117	110	143	123	177	131
Sea scallop	102	99	NA	256	173	NA	NA	NA	NA	NA
Spot	98	7	57	40	49	50	66	16	64	104
Striped bass	494	380	300	403	327	400	412	470	766	498
Weakfish	82	32	31	18	5	4	2	56	16	8
Whelks	NA	601	540	352	389	272	361	83	414	626

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	4,851	4,380	5,346	4,706	5,011	5,214	4,921	5,640	4,048	3,606
Finfish & Other	1,470	1,156	1,102	817	1,154	851	1,157	935	1,265	1,344
Shellfish	3,381	3,224	4,244	3,890	3,857	4,363	3,764	4,705	2,783	2,262
<b>Key Species</b>										
American eel	110	120	131	80	60	69	91	54	83	56
Black sea bass	73	87	73	61	6	3	4	-	4	NA
Blue crab	2,924	2,856	3,799	3,508	3,414	4,110	3,502	4,571	2,488	1,893
Eastern oyster	84	75	80	67	67	71	62	60	71	73
Quahog clam	69	60	44	36	31	30	39	32	43	40
Sea scallop	13	16	NA	38	25	NA	NA	NA	NA	NA
Spot	155	8	62	32	61	60	82	18	73	107
Striped bass	174	137	143	189	184	185	185	190	187	167
Weakfish	71	18	25	11	3	2	1	29	9	4
Whelks	NA	203	288	217	313	138	131	29	156	229

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American eel	0.91	2.28	2.22	2.38	2.24	3.00	3.03	2.93	2.94	3.06
Black sea bass	2.15	2.18	2.73	2.57	4.31	2.63	0.50	0.85	0.50	NA
Blue crab	1.17	1.04	1.40	1.31	1.59	1.45	1.38	1.46	1.84	1.99
Eastern oyster	5.76	6.10	6.14	6.09	4.97	5.67	5.56	5.76	5.71	5.71
Quahog clam	3.18	3.22	4.09	3.57	3.79	3.69	3.72	3.84	4.07	3.24
Sea scallop	8.08	6.27	NA	6.81	6.80	NA	NA	NA	NA	NA
Spot	0.63	0.97	0.92	1.24	0.81	0.84	0.81	0.89	0.88	0.97
Striped bass	2.84	2.78	2.09	2.13	1.77	2.16	2.22	2.47	4.09	2.99
Weakfish	1.16	1.76	1.27	1.75	1.93	1.56	2.01	1.95	1.85	1.93
Whelks	NA	2.96	1.88	1.62	1.24	1.97	2.76	2.89	2.66	2.73

<sup>1</sup> NA = these data are confidential thus not disclosable.



**2014 Economic Impacts of Delaware Recreational Fishing Expenditures (thousands of dollars)**

	#Jobs	Sales	Income	Value Added	
Trip Impacts by Fishing Mode	For-Hire	87	8,589	3,457	4,852
	Private Boat	139	13,778	4,546	7,433
	Shore	271	23,570	8,159	13,324
Total Durable Expenditures	1,065	96,342	45,797	72,734	
Total State Economic Impacts	1,562	142,279	61,959	98,343	

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire			Fishing Tackle	36,125
	4,383	1,220	Other Equipment	12,117
Private Boat			Boat Expenses	69,440
	5,064	8,881	Vehicle Expenses	6,697
Shore			Second Home Expenses	0
	13,881	7,201	Total Durable Expenditures	124,379
Total	23,328	17,302		
Total State Trip and Durable Goods Expenditures				165,009

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	120	137	150	134	114	128	129	111	82	93
Non-Coastal	--	--	--	--	--	--	--	--	--	--
Out-of-State	191	205	224	182	173	165	190	151	97	146
Total Anglers	311	342	374	316	287	293	319	262	179	239

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	42	62	71	56	44	21	18	21	37	41
Private	553	595	721	528	487	408	511	481	349	363
Shore	431	427	459	444	379	391	397	374	378	464
Total Trips	1,026	1,084	1,251	1,028	910	820	926	876	764	868

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic mackerel	H	0	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	2	0	0	0	0	0
Black seabass	H	68	114	93	22	37	22	43	40	37	24
	R	276	328	584	464	293	232	211	205	249	228
Bluefish	H	128	97	154	69	98	32	46	35	24	127
	R	190	289	539	167	167	58	128	118	70	325
Drum (Atlantic croaker)	H	825	764	359	370	452	76	92	88	232	413
	R	675	937	672	602	537	229	88	447	770	665
Drum (weakfish)	H	19	11	4	4	6	0	0	5	7	3
	R	105	95	23	61	4	12	6	85	23	22
Striped bass	H	20	20	8	27	20	16	18	25	19	9
	R	251	248	248	261	145	65	110	110	84	185
Summer flounder	H	73	88	108	35	87	53	66	45	58	93
	R	795	445	1,072	604	964	618	616	253	238	292
White perch	H	36	69	34	40	64	187	112	70	119	106
	R	105	194	190	243	121	397	272	187	369	65
Wrasses (tautog)	H	61	111	100	102	120	57	45	47	39	50
	R	233	193	267	164	224	196	88	107	99	76
Yellowfin tuna	H	4	6	0	1	0	0	0	0	1	1
	R	0	0	0	0	0	0	0	0	0	0

<sup>1</sup> Data is not available because all Delaware residents are considered coastal county residents.

<sup>2</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## Delaware | Marine Economy

### Delaware's State Economy (% of national total)<sup>1,2</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>3</sup>
2005	25,319 (0.3%)	392,840 (0.3%)	16.88 (0.4%)	24.18 (0.3%)	52.90 (0.4%)	ds
2013	24,151 (0.3%)	382,128 (0.3%)	19.54 (0.3%)	27.97 (0.3%)	60.82 (0.4%)	ds
%Change	-4.8	-2.8	13.6	13.6	13.0	NA

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>1</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	3	3	ds	3	ds	ds	ds	ds	ds
	Receipts	64	214	ds	27	ds	ds	ds	ds	ds
Seafood sales, retail	Firms	12	9	12	9	10	9	9	11	8
	Receipts	1,523	835	1,025	418	813	1,107	1,226	1,333	520

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	1	1	1	1	1	1	1	1	1
	Employees	0	0	0	0	0	0	0	0	0
	Payroll	0	0	0	0	0	0	0	0	0
Seafood sales, wholesale	Establishments	3	3	3	6	7	7	7	7	9
	Employees	0	9	0	0	0	0	0	0	0
	Payroll	0	337	0	0	0	0	0	0	3,020
Seafood sales, retail	Establishments	14	17	19	18	16	15	18	16	17
	Employees	138	135	105	0	50	47	49	0	60
	Payroll	3,264	3,133	2,997	1,498	1,348	1,414	1,493	1,545	1,396

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	3	3	3	2	2	1	0	0	0
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Deep sea freight transportation	Establishments	1	0	0	4	4	5	2	1	1
	Employees	ds	NA	NA	ds	ds	120	ds	ds	ds
	Payroll	ds	NA	NA	ds	ds	10,768	ds	ds	ds
Deep sea passenger transportation	Establishments	1	0	0	0	0	1	0	0	2
	Employees	ds	NA	NA	NA	NA	ds	NA	NA	ds
	Payroll	ds	NA	NA	NA	NA	ds	NA	NA	ds
Marinas	Establishments	16	18	17	19	16	19	17	18	19
	Employees	ds	ds	88	65	ds	65	ds	67	64
	Payroll	ds	ds	2,540	1,738	1,877	2,342	3,106	1,963	2,196
Marine cargo handling	Establishments	4	4	3	3	3	3	3	2	3
	Employees	ds	597	527	629	ds	434	511	ds	565
	Payroll	ds	18,812	19,027	19,204	16,952	16,835	19,203	ds	20,698
Navigational services to shipping	Establishments	9	8	8	9	8	8	8	8	8
	Employees	ds	75	76	79	85	76	78	ds	82
	Payroll	ds	4,783	4,961	5,360	5,672	5,176	5,096	3,111	5,330
Port & harbor operations	Establishments	2	3	2	2	2	3	3	4	3
	Employees	ds	ds	ds	ds	ds	29	44	ds	ds
	Payroll	ds	ds	ds	ds	ds	1,182	1,512	ds	ds
Ship & boat building	Establishments	1	1	1	2	2	2	3	4	4
	Employees	ds	ds	ds	ds	ds	ds	ds	50	61
	Payroll	ds	ds	ds	ds	ds	ds	ds	2,313	2,516

<sup>1</sup> ds = these data are suppressed.

<sup>2</sup> NA = not applicable.

<sup>3</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

# Tables | Maryland



## Maryland | Commercial Fisheries

### 2014 Economic Impacts of the Maryland Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	14,636	1,461,779	378,307	577,856	8,332	433,330	159,546	217,284
Commercial Harvesters	3,328	159,232	45,362	70,821	3,328	159,232	45,362	70,821
Seafood Processors & Dealers	1,643	144,864	56,452	72,087	755	66,604	25,955	33,144
Importers	2,906	799,247	128,095	243,645	-	-	-	-
Seafood Wholesalers & Distributors	711	93,248	31,697	42,088	239	31,312	10,644	14,133
Retail	6,048	265,188	116,701	149,214	4,010	176,181	77,585	99,186

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	63,754	53,597	65,329	73,196	75,893	103,825	82,567	85,069	75,860	90,252
Finfish & Other	10,766	9,844	12,170	11,090	11,615	12,835	13,061	15,648	17,182	17,632
Shellfish	52,988	43,753	53,158	62,106	64,278	90,990	69,506	69,421	58,678	72,619
<b>Key Species</b>										
Atlantic croaker	543	359	335	442	415	482	482	663	450	306
Black sea bass	724	118	454	445	451	590	507	421	702	818
Blue crab	39,962	31,141	41,690	50,115	52,049	79,055	60,326	60,467	49,956	53,581
Clams or bivalves	4,784	4,889	5,074	5,436	4,403	5,400	4,173	2,259	362	1,253
Eastern oyster	3,435	1,238	3,146	2,277	3,849	4,385	3,691	5,710	7,357	15,687
Menhaden	1,514	650	1,379	915	884	729	685	1,669	861	1,221
Sea scallop	4,549	6,201	2,809	3,758	3,160	1,188	551	202	8	1,328
Striped bass	4,259	4,591	5,333	5,232	5,180	5,425	5,623	6,933	9,931	7,912
Summer flounder	677	550	546	578	551	541	463	380	519	633
White perch	848	569	619	776	942	1,154	1,493	1,430	1,029	1,331

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	67,489	51,212	61,585	63,534	66,819	101,739	76,258	75,416	43,374	49,382
Finfish & Other	25,000	12,564	21,618	18,626	19,968	27,109	18,452	27,195	16,835	20,900
Shellfish	42,489	38,648	39,967	44,908	46,850	74,630	57,805	48,221	26,539	28,482
<b>Key Species</b>										
Atlantic croaker	1,389	738	576	778	550	589	804	1,041	855	522
Black sea bass	337	43	171	159	126	203	167	141	219	303
Blue crab	34,914	29,446	30,778	34,872	38,801	66,262	51,163	43,737	24,179	24,754
Clams or bivalves	6,112	7,756	7,947	8,600	6,292	6,971	5,412	2,962	609	1,955
Eastern oyster	738	274	317	249	498	432	356	618	788	1,196
Menhaden	15,806	5,192	13,751	9,615	9,419	15,467	8,016	16,383	7,298	7,440
Sea scallop	591	931	450	569	521	153	58	20	1	110
Striped bass	2,349	2,485	2,640	2,655	2,812	2,510	2,343	2,541	2,018	2,305
Summer flounder	338	248	229	208	214	261	259	165	178	259
White perch	1,524	688	973	858	1,301	1,700	2,059	1,956	1,244	1,488

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic croaker	0.39	0.49	0.58	0.57	0.75	0.82	0.60	0.64	0.53	0.59
Black sea bass	2.15	2.73	2.66	2.79	3.59	2.90	3.04	2.99	3.20	2.70
Blue crab	1.14	1.06	1.35	1.44	1.34	1.19	1.18	1.38	2.07	2.16
Clams or bivalves	0.78	0.63	0.64	0.63	0.70	0.77	0.77	0.76	0.59	0.64
Eastern oyster	4.66	4.52	9.92	9.13	7.73	10.15	10.37	9.24	9.34	13.11
Menhaden	0.10	0.13	0.10	0.10	0.09	0.05	0.09	0.10	0.12	0.16
Sea scallop	7.70	6.66	6.25	6.60	6.06	7.77	9.53	10.23	12.27	12.11
Striped bass	1.81	1.85	2.02	1.97	1.84	2.16	2.40	2.73	4.92	3.43
Summer flounder	2.01	2.22	2.39	2.78	2.58	2.07	1.78	2.30	2.92	2.45
White perch	0.56	0.83	0.64	0.90	0.72	0.68	0.73	0.73	0.83	0.89

**2014 Economic Impacts of Maryland Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	831	75,757	33,500	46,788
	Private Boat	507	52,192	20,599	32,056
	Shore	500	47,883	18,359	29,524
Total Durable Expenditures		5,883	551,018	266,327	404,739
Total State Economic Impacts		7,721	726,850	338,785	513,107

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	36,022	14,890	Fishing Tackle	134,739
Private Boat	11,806	46,056	Other Equipment	62,083
Shore	15,909	25,910	Boat Expenses	375,272
Total	63,737	86,856	Vehicle Expenses	46,786
			Second Home Expenses	3,304
			Total Durable Expenditures	622,183
Total State Trip and Durable Goods Expenditures				772,776

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	620	733	850	643	514	552	415	374	404	413
Non-Coastal	49	84	78	50	43	54	49	40	36	41
Out-of-State	425	447	528	507	327	462	372	258	329	338
Total Anglers	1,094	1,264	1,456	1,200	884	1,068	836	672	769	792

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	212	239	270	195	203	140	161	151	154	211
Private	1,924	1,836	2,352	1,891	1,608	1,643	1,453	1,281	1,576	1,388
Shore	1,019	1,145	1,082	1,273	1,082	1,150	1,206	817	1,005	874
Total Trips	3,155	3,220	3,704	3,359	2,893	2,933	2,820	2,249	2,735	2,473

**Harvest (H) & Release (R) of Key Species Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black seabass	H	91	121	39	27	33	36	47	33	30	68
	R	562	645	577	674	454	670	353	289	350	501
Bluefish	H	167	421	675	551	591	273	259	114	54	159
	R	236	778	1,172	1,631	671	162	409	139	258	142
Drum (Atlantic croaker)	H	784	755	873	620	1,335	1,137	554	979	1,139	1,080
	R	1,137	1,784	1,258	2,127	1,138	1,011	366	1,731	2,937	1,146
Drum (spot)	H	1,789	2,896	3,615	1,892	2,064	1,164	913	766	936	1,254
	R	2,136	1,355	1,619	1,738	632	1,155	296	920	2,622	566
Drum (weakfish)	H	534	669	765	415	502	457	445	262	478	583
	R	3,855	3,711	3,065	1,339	1,424	1,509	1,127	2,207	2,387	2,415
Striped bass	H	117	37	103	58	65	26	15	22	53	79
	R	362	252	1,018	923	816	1,226	472	214	279	631
Summer flounder	H	32	1	7	2	4	5	0	11	2	1
	R	61	47	63	38	8	163	18	25	10	5
White perch	H	2,410	2,561	2,890	1,511	551	2,613	1,572	1,534	2,258	808
	R	5,837	3,953	5,424	3,853	1,137	2,891	2,348	4,143	6,295	2,164
Wrasses (tautog)	H	29	15	43	19	39	57	12	6	4	0
	R	148	186	178	151	133	361	75	110	53	2
Yellowfin tuna	H	6	8	4	0	5	1	0	0	2	10
	R	0	0	0	0	2	0	0	0	4	1

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.



## Maryland | Marine Economy

### Maryland's State Economy (% of national total)<sup>1,2</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>3</sup>
2005	138,481 (1.8%)	2,167,999 (1.9%)	88.96 (2%)	150.15 (2.1%)	264.73 (2%)	0.73
2013	135,421 (1.8%)	2,182,260 (1.8%)	108.76 (1.9%)	187.55 (2.1%)	339.41 (2%)	ds
%Change	-2.3	0.7	18.2	19.9	22	NA

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	57	55	56	56	42	43	55	67	49
	Receipts	2,727	2,751	3,940	3,310	2,268	2,138	2,374	3,030	3,158
Seafood sales, retail	Firms	78	73	99	84	94	85	86	96	95
	Receipts	6,976	7,755	10,493	9,010	8,819	6,177	7,396	6,454	6,147

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	23	19	22	22	19	18	17	16	16
	Employees	1,141	1,053	1,296	1,003	245	273	264	266	309
	Payroll	24,986	28,852	32,386	39,328	13,049	12,652	12,773	13,587	12,455
Seafood sales, wholesale	Establishments	59	59	62	60	61	63	57	60	58
	Employees	709	694	978	851	777	795	775	724	636
	Payroll	30,148	32,943	50,353	42,296	39,055	39,067	38,971	34,194	30,119
Seafood sales, retail	Establishments	95	97	102	94	87	87	88	87	87
	Employees	576	617	613	590	485	526	562	575	574
	Payroll	13,019	14,190	14,777	11,510	11,499	11,810	12,883	13,027	13,623

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>1,2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	10	10	8	6	7	8	6	4	4
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	538
Deep sea freight transportation	Establishments	16	14	14	13	15	15	16	14	10
	Employees	316	ds	244	250	255	390	329	245	139
	Payroll	14,131	ds	14,905	19,765	20,722	24,185	25,071	17,938	10,041
Deep sea passenger transportation	Establishments	1	1	1	3	2	1	0	0	1
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	ds
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	ds
Marinas	Establishments	185	179	183	179	176	175	172	159	170
	Employees	1,228	1,260	1,326	1,383	1,289	1,275	1,294	1,276	1,328
	Payroll	36,590	40,866	48,752	45,965	45,483	43,508	43,330	43,531	45,540
Marine cargo handling	Establishments	12	13	15	15	16	17	17	6	12
	Employees	1,639	1,659	1,791	1,572	1,599	2,742	1,924	ds	1,519
	Payroll	81,219	73,367	85,328	48,382	46,727	95,182	86,680	ds	60,500
Navigational services to shipping	Establishments	9	9	8	9	11	10	11	10	11
	Employees	ds	ds	157	92	77	84	84	ds	245
	Payroll	ds	ds	4,882	3,968	3,807	4,015	4,259	ds	17,066
Port & harbor operations	Establishments	11	11	8	3	4	5	5	22	16
	Employees	ds	ds	323	ds	ds	ds	ds	1,875	962
	Payroll	ds	ds	13,427	ds	ds	ds	ds	93,001	44,436
Ship & boat building	Establishments	57	55	48	46	38	35	35	34	31
	Employees	ds	1,119	874	677	416	ds	633	378	371
	Payroll	ds	33,463	29,500	22,363	16,238	ds	36,675	14,619	16,822

<sup>1</sup> ds = these data are suppressed.

<sup>2</sup> NA = not applicable.

<sup>3</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

# Tables | New Jersey



## New Jersey | Commercial Fisheries

### 2014 Economic Impacts of the New Jersey Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	44,433	6,862,897	1,529,212	2,486,353	7,291	580,593	192,946	277,011
Commercial Harvesters	2,596	302,784	79,547	129,021	2,596	302,784	79,547	129,021
Seafood Processors & Dealers	6,254	578,414	219,057	285,913	666	61,578	23,321	30,438
Importers	17,469	4,805,451	770,165	1,464,912	-	-	-	-
Seafood Wholesalers & Distributors	2,706	430,305	138,300	188,061	192	30,464	9,791	13,314
Retail	15,408	745,944	322,144	418,446	3,837	185,767	80,287	104,237

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	158,746	146,346	151,509	168,508	151,539	178,572	220,377	187,707	132,860	151,930
Finfish & Other	22,585	33,683	24,234	19,936	24,074	23,031	26,808	28,639	25,951	25,117
Shellfish	136,161	112,663	127,275	148,572	127,465	155,540	193,569	159,068	106,909	126,814
<b>Key Species</b>										
American lobster	2,001	2,522	4,056	3,215	2,278	2,895	3,039	3,938	2,797	2,380
Atlantic herring	1	3,297	562	548	1,507	422	415	147	401	629
Atlantic mackerel	3,957	9,324	668	1,568	1,539	848	53	589	18	21
Blue crab	6,773	6,359	5,471	7,284	184	12,030	9,422	10,009	8,111	6,192
Eastern oyster	823	2,255	NA	2,547	NA	NA	NA	NA	NA	NA
Goosefish	4,451	4,501	4,486	4,005	3,018	2,752	3,654	3,301	2,453	2,428
Ocean quahog & surfclams	25,567	25,107	26,547	30,838	27,496	23,889	25,301	25,453	22,962	11,455
Quahog clam	7,556	7,615	968	6,254	NA	NA	NA	NA	NA	NA
Sea scallop	88,486	58,538	77,359	91,317	90,150	109,118	142,505	110,560	65,190	88,009
Summer flounder	4,478	5,091	3,988	3,461	3,376	4,552	5,461	5,434	4,899	4,863

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	156,695	175,777	153,848	162,308	162,029	162,164	187,539	180,505	119,912	124,114
Finfish & Other	74,193	89,298	65,166	62,821	73,623	74,881	94,678	104,174	61,790	63,933
Shellfish	82,502	86,478	88,683	99,487	88,406	87,282	92,861	76,331	58,122	60,182
<b>Key Species</b>										
American lobster	369	471	680	633	585	689	687	919	660	526
Atlantic herring	1	25,486	6,038	6,539	13,692	4,140	2,385	1,114	2,344	4,095
Atlantic mackerel	32,414	24,977	5,384	9,426	10,255	4,692	107	2,017	46	29
Blue crab	6,333	5,981	4,636	5,816	257	9,461	9,600	7,393	4,391	3,137
Eastern oyster	162	343	NA	550	NA	NA	NA	NA	NA	NA
Goosefish	3,881	3,842	4,231	3,698	2,692	2,024	2,274	2,212	2,231	2,172
Ocean quahog & surfclams	49,849	43,644	44,791	51,597	45,306	38,538	41,281	38,921	35,960	19,447
Quahog clam	1,852	1,844	240	1,516	NA	NA	NA	NA	NA	NA
Sea scallop	11,831	8,457	11,808	13,282	14,045	14,171	14,545	11,379	5,640	7,133
Summer flounder	2,349	2,380	1,697	1,541	1,799	2,165	2,831	2,269	2,004	1,826

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	5.42	5.36	5.96	5.08	3.89	4.20	4.42	4.28	4.23	4.52
Atlantic herring	0.78	0.13	0.09	0.08	0.11	0.10	0.17	0.13	0.17	0.15
Atlantic mackerel	0.12	0.37	0.12	0.17	0.15	0.18	0.50	0.29	0.40	0.74
Blue crab	1.07	1.06	1.18	1.25	0.72	1.27	0.98	1.35	1.85	1.97
Eastern oyster	5.09	6.57	NA	4.63	NA	NA	NA	NA	NA	NA
Goosefish	1.15	1.17	1.06	1.08	1.12	1.36	1.61	1.49	1.10	1.12
Ocean quahog & surfclams	0.51	0.58	0.59	0.60	0.61	0.62	0.61	0.65	0.64	0.59
Quahog clam	4.08	4.13	4.04	4.12	NA	NA	NA	NA	NA	NA
Sea scallop	7.48	6.92	6.55	6.88	6.42	7.70	9.80	9.72	11.56	12.34
Summer flounder	1.91	2.14	2.35	2.25	1.88	2.10	1.93	2.39	2.44	2.66

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of New Jersey Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	843	97,175	45,230	60,497
	Private Boat	1,615	199,315	79,027	123,615
	Shore	725	81,909	33,277	51,779
Total Durable Expenditures		16,779	1,658,436	798,708	1,221,087
Total State Economic Impacts		19,962	2,036,835	956,242	1,456,978

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	25,745	31,653	Fishing Tackle	378,594
Private Boat	73,585	92,788	Other Equipment	110,946
Shore	25,650	38,592	Boat Expenses	854,112
Total	124,980	163,033	Vehicle Expenses	86,494
			Second Home Expenses	5,505
			Total Durable Expenditures	1,435,651
Total State Trip and Durable Goods Expenditures				1,723,664

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	818	693	890	765	656	776	687	662	581	607
Non-Coastal	39	25	19	26	35	36	23	27	20	17
Out-of-State	471	481	518	456	454	449	357	431	330	566
Total Anglers	1,328	1,199	1,427	1,247	1,145	1,261	1,067	1,120	931	1,190

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	452	633	605	449	434	320	383	369	550	515
Private	3,753	3,721	3,614	3,595	2,671	3,265	2,446	2,580	1,914	2,508
Shore	2,357	2,682	2,979	2,857	2,234	2,278	2,334	2,072	1,900	1,846
Total Trips	6,562	7,036	7,198	6,901	5,339	5,863	5,163	5,021	4,364	4,869

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black seabass	H	660	531	724	580	583	687	149	735	345	469
	R	2,387	2,082	2,422	4,432	3,138	3,869	1,303	3,817	2,548	2,242
Bluefin tuna	H	9	4	7	3	14	6	2	1	9	5
	R	24	98	1	1	2	7	6	0	0	1
Bluefish	H	2,368	1,183	1,654	1,028	814	909	1,149	1,190	792	1,343
	R	2,293	1,803	2,736	1,477	1,476	1,886	1,910	1,996	883	1,853
Drum (weakfish)	H	6	141	1	152	240	125	206	57	82	177
	R	2	12	0	20	23	24	13	16	55	13
Red hake	H	412	509	290	310	283	320	393	168	346	225
	R	1,219	1,890	1,789	1,310	800	690	884	406	1,108	1,052
Striped bass	H	1,300	1,556	1,068	762	825	552	737	1,131	1,244	1,176
	R	8,939	6,740	6,192	8,959	10,414	10,565	8,096	6,981	6,461	9,513
Summer flounder	H	1,008	490	230	298	12	2	3	115	30	6
	R	1,372	1,336	612	1,436	79	102	99	732	93	80
Winter flounder	H	33	64	96	3	7	24	28	0	5	13
	R	21	113	27	15	26	39	25	2	30	9
Wrasses (tautog)	H	43	201	300	172	127	375	137	38	111	170
	R	224	604	1,290	901	856	1,063	843	510	462	778
Yellowfin tuna	H	22	35	58	7	7	25	17	69	75	7
	R	1	0	0	1	16	0	0	9	4	0

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## New Jersey | Marine Economy

### New Jersey's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	242,128 (3.2%)	3,594,862 (3.1%)	166.02 (3.7%)	248.25 (3.5%)	444.97 (3.4%)	0.98
2013	230,281 (3.1%)	3,492,216 (3%)	195.07 (3.5%)	289.63 (3.3%)	537.40 (3.2%)	1.02
%Change	-5.1	-2.9	14.9	14.3	17.2	4.1

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	26	27	25	22	33	47	29	35	48
	Receipts	3,086	3,027	2,399	1,851	3,670	3,613	3,447	3,565	4,981
Seafood sales, retail	Firms	93	72	90	92	86	66	68	77	74
	Receipts	9,194	8,916	11,320	11,196	11,131	8,265	8,049	8,972	8,257

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	17	16	16	14	13	11	12	11	13
	Employees	969	667	628	566	661	482	518	404	671
	Payroll	28,235	22,097	18,403	18,703	22,025	17,427	17,940	13,747	22,764
Seafood sales, wholesale	Establishments	85	89	101	81	83	90	91	82	80
	Employees	914	941	978	856	858	848	935	1,058	765
	Payroll	37,828	41,506	41,994	37,462	37,348	38,065	40,103	44,033	37,405
Seafood sales, retail	Establishments	128	127	124	118	106	108	109	114	114
	Employees	524	493	472	368	332	332	332	382	419
	Payroll	11,787	11,373	10,352	9,372	9,126	9,094	9,264	11,561	11,657

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	18	18	23	18	19	18	20	16	16
	Employees	914	1,040	778	645	594	600	508	402	367
	Payroll	54,097	68,096	56,017	48,911	41,925	44,246	40,587	32,007	32,431
Deep sea freight transportation	Establishments	38	39	31	27	26	26	26	25	20
	Employees	948	648	566	1,115	1,045	ds	ds	390	225
	Payroll	68,633	45,940	44,133	75,848	66,547	78,898	81,936	27,481	12,263
Deep sea passenger transportation	Establishments	5	4	2	2	3	2	2	2	0
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	NA
Marinas	Establishments	206	204	216	211	214	212	206	210	206
	Employees	978	940	1,045	916	784	781	773	811	787
	Payroll	38,323	39,154	41,624	39,596	35,811	35,475	34,675	35,760	37,606
Marine cargo handling	Establishments	26	25	23	21	22	21	22	15	20
	Employees	4,972	4,599	4,781	4,244	3,479	3,292	3,744	2,582	6,912
	Payroll	363,714	345,784	350,690	278,189	230,886	260,894	273,636	203,148	538,991
Navigational services to shipping	Establishments	16	19	26	20	19	16	17	18	18
	Employees	169	ds	227	191	133	75	110	96	106
	Payroll	9,673	ds	11,403	7,776	6,638	6,125	5,619	5,983	6,057
Port & harbor operations	Establishments	7	6	8	6	6	11	7	25	18
	Employees	194	ds	271	143	54	124	163	ds	ds
	Payroll	11,599	ds	12,197	12,446	5,548	10,463	16,933	139,276	5,995
Ship & boat building	Establishments	37	34	31	30	25	24	23	21	24
	Employees	2,320	2,307	2,305	2,019	1,188	1,056	864	901	917
	Payroll	89,421	88,367	91,460	79,309	42,909	37,920	39,810	36,334	41,886

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = data not available.



# Tables | New York



**2014 Economic Impacts of the New York Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	56,735	6,858,434	1,466,405	2,426,360	4,302	197,521	68,630	95,997
Commercial Harvesters	2,013	96,450	27,727	42,640	2,013	96,450	27,727	42,640
Seafood Processors & Dealers	1,193	171,083	65,048	84,610	151	21,662	8,236	10,713
Importers	19,105	5,255,450	842,286	1,602,091	-	-	-	-
Seafood Wholesalers & Distributors	5,657	407,246	137,675	185,632	148	10,677	3,610	4,867
Retail	28,767	928,205	393,669	511,388	1,990	68,732	29,058	37,777

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	56,367	58,479	60,314	57,429	48,856	47,717	48,303	54,524	56,809	53,848
Finfish & Other	18,317	19,894	20,434	18,824	17,571	18,698	20,256	23,828	23,463	18,879
Shellfish	38,051	38,585	39,880	38,606	31,285	29,020	28,046	30,696	33,346	34,969
<b>Key Species</b>										
American lobster	4,396	6,288	4,623	3,821	3,468	3,165	1,398	999	938	957
Atlantic surfclam	7,055	2,135	5,932	5,670	5,858	3,929	545	2,783	2,410	1,395
Eastern oyster	1,961	2,390	2,627	2,870	1,428	2,046	2,174	2,227	4,149	9,309
Summer flounder	6,054	5,844	5,157	5,290	4,167	4,516	7,250	8,648	5,949	5,451
Loligo squid	12,696	12,237	14,224	13,185	8,397	7,774	6,905	9,218	13,475	11,605
Quahog clam	2,027	2,450	2,348	1,710	1,887	2,112	2,551	3,536	2,971	2,331
Scups or porgies	3,617	3,519	3,872	5,050	5,018	3,778	4,960	4,083	2,602	2,965
Sea scallop	1,468	2,055	1,628	1,076	700	709	351	332	848	885
Softshell clam	3,797	3,409	3,131	2,933	3,087	3,550	3,732	3,653	3,197	3,000
Tilefishes	2,765	3,325	3,843	3,343	3,262	4,077	4,525	4,260	4,676	4,255

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	38,150	33,287	35,785	34,175	34,304	33,267	32,010	35,864	33,366	26,029
Finfish & Other	14,631	14,225	16,492	15,084	16,194	18,595	18,814	19,337	18,574	15,059
Shellfish	23,519	19,062	19,293	19,092	18,110	14,671	13,196	16,526	14,792	10,970
<b>Key Species</b>										
American lobster	1,154	1,243	912	850	932	814	344	275	248	216
Atlantic surfclam	11,953	2,987	9,161	8,753	8,799	5,857	809	4,117	3,452	1,983
Eastern oyster	219	269	124	135	64	81	98	108	204	419
Summer flounder	6,693	6,460	5,437	5,469	4,098	3,900	5,630	7,838	4,985	5,141
Loligo squid	1,617	1,650	1,592	1,476	1,410	1,216	1,131	1,299	1,932	1,779
Quahog clam	2,186	2,416	2,325	1,214	1,850	2,690	3,729	4,307	4,574	3,190
Scups or porgies	647	1,040	619	782	918	508	522	430	256	261
Sea scallop	270	393	198	131	114	116	57	54	138	144
Softshell clam	1,799	1,220	942	856	1,142	1,364	1,517	1,238	1,033	834
Tilefishes	1,142	1,298	1,393	1,199	1,435	1,586	1,521	1,413	1,468	1,383

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American lobster	3.81	5.06	5.07	4.49	3.72	3.89	4.06	3.63	3.78	4.43
Atlantic surfclam	0.59	0.71	0.65	0.65	0.67	0.67	0.67	0.68	0.70	0.70
Eastern oyster	8.97	8.87	21.21	21.21	22.23	25.41	22.23	20.58	20.32	22.23
Summer flounder	0.90	0.90	0.95	0.97	1.02	1.16	1.29	1.10	1.19	1.06
Loligo squid	7.85	7.42	8.94	8.93	5.96	6.39	6.10	7.10	6.97	6.52
Quahog clam	0.93	1.01	1.01	1.41	1.02	0.79	0.68	0.82	0.65	0.73
Scups or porgies	5.59	3.38	6.25	6.46	5.47	7.44	9.50	9.50	10.18	11.34
Sea scallop	5.43	5.23	8.23	8.24	6.13	6.13	6.13	6.13	6.13	6.13
Softshell clam	2.11	2.80	3.33	3.43	2.70	2.60	2.46	2.95	3.09	3.60
Tilefishes	2.42	2.56	2.76	2.79	2.27	2.57	2.97	3.01	3.18	3.08

**2014 Economic Impacts of New York Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	909	107,324	54,315	69,786
	Private Boat	936	99,801	40,548	65,302
	Shore	299	26,618	10,920	16,957
Total Durable Expenditures		7,417	743,185	360,732	566,683
Total State Economic Impacts		9,561	976,928	466,515	718,728

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
			Fishing Tackle	187,584
For-Hire	6,788	58,494	Other Equipment	63,884
Private Boat	6,099	105,911	Boat Expenses	432,356
Shore	3,042	22,651	Vehicle Expenses	34,216
Total	15,929	187,055	Second Home Expenses	718
			Total Durable Expenditures	718,758
Total State Trip and Durable Goods Expenditures				921,742

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	885	735	881	817	638	646	497	533	595	657
Non-Coastal	27	25	39	32	21	24	18	30	8	19
Out-of-State	110	114	147	118	58	69	46	53	93	155
Total Anglers	1,022	874	1,067	967	717	739	561	616	696	831

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	527	361	684	388	381	348	458	366	565	439
Private	3,107	3,120	3,315	3,199	2,819	2,351	2,320	1,908	1,711	2,165
Shore	2,495	1,961	2,522	2,341	1,625	1,675	1,389	1,492	1,597	1,351
Total Trips	6,129	5,442	6,521	5,928	4,825	4,374	4,167	3,766	3,873	3,955

**Harvest (H) & Release (R) of Key Species Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic herring <sup>2</sup>	H	60	23	214	70	3	79	75	174	222	189
	R	2	2	230	50	0	17	0	0	59	15
Black seabass	H	143	269	410	259	566	543	275	322	353	423
	R	1,071	1,326	1,550	1,654	1,236	1,163	893	2,471	1,372	1,298
Bluefish	H	1,684	1,832	2,150	1,484	1,294	1,026	928	1,150	1,108	1,421
	R	3,380	2,379	2,650	3,225	1,793	1,472	1,599	1,809	1,030	1,529
Drum (weakfish)	H	859	1,678	1,596	1,451	1,460	1,991	715	592	1,096	1,133
	R	1,737	2,622	1,964	2,838	2,124	1,864	998	1,235	1,865	1,697
Porgies (scup)	H	0	0	0	0	0	1	0	1	0	12
	R	5	0	0	0	0	0	3	3	1	15
Shortfin mako shark	H	378	368	475	685	357	539	676	424	491	409
	R	1,412	1,723	1,678	1,347	1,074	1,069	1,506	586	989	725
Striped bass	H	1,163	753	867	608	298	335	376	509	518	509
	R	7,753	4,946	5,272	5,521	5,564	6,571	7,296	5,013	4,667	4,524
Summer flounder	H	0	10	4	40	0	3	0	5	7	1
	R	76	17	109	25	3	3	55	12	6	0
Winter flounder	H	100	261	11	41	69	31	65	44	1	25
	R	200	76	14	17	110	63	101	33	3	11
Wrasses (tautog)	H	85	246	223	320	346	146	111	61	77	265
	R	177	823	386	728	665	567	487	365	590	898

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

<sup>2</sup> This species may not be equivalent to species with similar names listed in the commercial tables.

New York's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	514,265 (6.9%)	7,417,463 (6.4%)	370.84 (8.3%)	557.79 (7.9%)	1,024.33 (7.9%)	0.13
2013	532,669 (7.1%)	7,688,492 (6.5%)	466.82 (8.3%)	706.97 (8%)	1,341.59 (8%)	0.13
%Change	3.5	3.5	20.6	21.1	23.6	0.0

Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product	Firms	57	61	68	73	101	115	142	133	150
prep. & packaging	Receipts	2,652	3,044	3,516	3,383	4,896	6,784	7,380	8,279	9,946
Seafood sales, retail	Firms	219	206	266	247	196	214	183	205	197
	Receipts	24,987	24,790	23,157	23,983	19,753	18,999	16,286	16,714	15,923

Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product	Establishments	18	15	15	17	15	15	18	17	17
prep. & packaging	Employees	324	298	294	379	0	272	299	265	280
	Payroll	14,810	16,491	18,723	18,570	15,227	16,976	21,372	25,666	22,776
Seafood sales, wholesale	Establishments	269	254	291	231	246	263	291	243	264
	Employees	2,003	2,066	2,058	1,627	1,741	1,798	1,876	1,839	1,937
	Payroll	76,177	78,198	84,361	72,233	68,345	72,442	76,970	78,324	84,346
Seafood sales, retail	Establishments	392	388	372	368	386	394	391	385	399
	Employees	1,513	1,495	1,575	1,470	1,509	1,586	1,660	1,674	1,796
	Payroll	25,665	26,701	28,497	30,741	31,640	32,001	35,664	38,721	45,049

Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	57	55	50	50	48	65	62	42	59
	Employees	1,448	1,464	1,746	1,759	2,299	1,654	1,708	ds	ds
	Payroll	91,347	109,315	125,570	160,735	198,352	136,577	154,087	ds	ds
Deep sea freight transportation	Establishments	39	38	34	29	32	30	31	23	20
	Employees	602	ds	ds	732	782	704	752	214	ds
	Payroll	39,309	ds	65,632	108,744	89,313	98,499	88,354	31,229	22,691
Deep sea passenger transportation	Establishments	6	4	4	3	4	2	1	2	3
	Employees	ds	ds	7	ds	8	ds	ds	ds	ds
	Payroll	ds	ds	240	316	126	ds	ds	ds	ds
Marinas	Establishments	416	404	411	419	418	429	431	415	424
	Employees	2,093	2,112	2,070	2,263	2,099	2,052	2,033	1,868	1,907
	Payroll	84,832	83,807	88,862	100,910	96,640	94,654	96,408	87,124	93,212
Marine cargo handling	Establishments	12	12	12	10	9	13	12	6	9
	Employees	ds	ds	ds	ds	ds	1,086	1,019	ds	922
	Payroll	ds	ds	ds	ds	ds	68,555	66,439	ds	60,079
Navigational services to shipping	Establishments	35	36	36	32	37	37	35	53	33
	Employees	ds	ds	578	386	312	598	596	712	687
	Payroll	ds	ds	40,976	23,294	19,126	50,119	54,406	63,334	68,141
Port & harbor operations	Establishments	3	3	5	3	4	8	9	18	15
	Employees	ds	6	ds	ds	ds	ds	33	1,294	196
	Payroll	ds	119	ds	ds	ds	568	1,493	105,325	12,358
Ship & boat building	Establishments	47	48	53	49	47	41	43	49	45
	Employees	590	ds	643	688	585	575	552	560	ds
	Payroll	21,514	ds	26,653	30,462	28,880	26,771	25,998	24,599	24,338

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

# Tables | Virginia





**2014 Economic Impacts of the Virginia Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	17,253	1,256,929	396,372	568,765	14,618	798,612	304,860	412,727
Commercial Harvesters	4,485	288,115	92,031	136,909	4,485	288,115	92,031	136,909
Seafood Processors & Dealers	1,478	129,405	50,348	64,979	1,421	124,396	48,399	62,464
Importers	1,392	382,882	61,364	116,719	-	-	-	-
Seafood Wholesalers & Distributors	751	90,942	31,438	41,900	483	58,501	20,223	26,953
Retail	9,147	365,586	161,191	208,258	8,229	327,600	144,206	186,401

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	155,066	110,066	138,149	146,602	152,017	183,181	193,976	174,534	163,027	168,239
Finfish & Other	48,559	41,637	45,735	40,506	47,575	55,915	58,526	61,675	57,001	54,671
Shellfish	106,507	68,430	92,414	106,096	104,442	127,267	135,450	112,859	106,026	113,568
<b>Key Species</b>										
Atlantic croaker	3,691	4,326	4,445	5,269	6,940	6,025	4,571	7,532	6,247	4,129
Black sea bass	1,242	1,048	663	759	569	928	1,003	1,401	1,716	1,365
Blue crab	20,578	14,057	15,793	18,013	21,169	29,133	26,274	24,561	23,991	26,991
Catfishes & bullheads	900	1,570	978	1,191	1,567	670	1,001	480	645	416
Goosefish	1,142	685	781	951	631	594	752	1,218	920	654
Menhaden	25,259	22,306	25,317	21,271	23,578	34,476	32,995	31,107	25,343	26,021
Sea Scallop	84,574	52,764	63,013	65,534	63,312	70,204	79,427	54,076	32,610	33,643
Spot	2,227	1,793	3,232	1,171	3,411	975	3,431	769	2,406	5,681
Striped bass	4,457	2,946	3,831	3,378	4,219	3,635	4,497	5,542	5,702	6,372
Summer flounder	4,652	4,373	3,184	2,719	2,959	4,202	5,956	7,725	8,513	4,732

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	441,538	426,229	493,415	423,066	426,798	510,474	496,629	462,503	381,607	388,069
Finfish & Other	402,586	393,735	452,342	384,804	379,296	457,408	442,345	417,264	346,806	353,208
Shellfish	38,952	32,494	41,073	38,262	47,502	53,066	54,284	45,239	34,801	34,861
<b>Key Species</b>										
Atlantic croaker	9,272	7,829	10,588	11,214	8,576	7,873	5,569	6,942	6,325	4,766
Black sea bass	475	328	189	215	164	264	275	392	496	388
Blue crab	26,064	22,708	25,141	23,243	32,756	38,490	39,656	33,144	24,258	24,040
Catfishes & bullheads	1,622	1,360	1,598	1,770	1,877	871	1,022	767	1,140	771
Goosefish	1,157	677	847	972	743	596	604	907	846	587
Menhaden	372,578	370,946	420,481	353,895	351,392	433,241	414,159	390,318	317,950	326,592
Sea Scallop	11,444	8,302	9,916	9,685	10,137	9,167	8,260	5,798	2,958	2,752
Spot	3,103	1,696	4,328	1,977	3,910	1,024	3,742	613	2,085	3,929
Striped bass	2,472	1,431	1,962	2,196	2,109	2,139	2,077	2,175	1,680	1,990
Summer flounder	3,869	2,757	1,856	1,654	1,980	2,592	4,065	4,122	4,794	2,049

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic croaker	0.40	0.55	0.42	0.47	0.81	0.77	0.82	1.09	0.99	0.87
Black sea bass	2.61	3.19	3.50	3.52	3.46	3.52	3.65	3.57	3.46	3.52
Blue crab	0.79	0.62	0.63	0.77	0.65	0.76	0.66	0.74	0.99	1.12
Catfishes & bullheads	0.55	1.15	0.61	0.67	0.83	0.77	0.98	0.63	0.57	0.54
Goosefish	0.99	1.01	0.92	0.98	0.85	1.00	1.25	1.34	1.09	1.11
Menhaden	0.07	0.06	0.06	0.06	0.07	0.08	0.08	0.08	0.08	0.08
Sea Scallop	7.39	6.36	6.35	6.77	6.25	7.66	9.62	9.33	11.02	12.23
Spot	0.72	1.06	0.75	0.59	0.87	0.95	0.92	1.25	1.15	1.45
Striped bass	1.80	2.06	1.95	1.54	2.00	1.70	2.16	2.55	3.39	3.20
Summer flounder	1.20	1.59	1.72	1.64	1.49	1.62	1.47	1.87	1.78	2.31

**2014 Economic Impacts of Virginia Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	107	10,410	4,158	6,119
	Private Boat	754	74,342	28,674	46,791
	Shore	438	39,331	15,575	24,803
Total Durable Expenditures		3,919	349,576	164,208	257,769
Total State Economic Impacts		5,218	473,659	212,615	335,482

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	3,583	3,394	Fishing Tackle	104,059
Private Boat	20,519	54,347	Other Equipment	36,758
Shore	14,480	18,241	Boat Expenses	166,902
Total	38,582	75,983	Vehicle Expenses	20,574
			Second Home Expenses	5,556
			Total Durable Expenditures	333,850
Total State Trip and Durable Goods Expenditures				448,415

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	559	578	463	464	515	496	516	412	419	341
Non-Coastal	137	90	76	89	87	63	56	78	74	53
Out-of-State	511	364	297	338	305	279	320	193	267	206
Total Anglers	1,207	1,032	836	891	907	838	892	683	760	600

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	37	43	60	57	48	45	30	45	59	53
Private	2,563	2,590	2,369	2,353	2,124	1,700	1,782	1,426	1,302	1,209
Shore	1,365	1,155	1,083	1,089	876	852	1,086	1,051	1,120	920
Total Trips	3,965	3,788	3,512	3,499	3,048	2,597	2,898	2,522	2,481	2,182

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black seabass	H	34	83	36	39	115	29	19	4	21	15
	R	1,116	1,356	1,271	1,251	1,152	525	444	884	594	563
Cobia	H	18	22	10	5	17	7	4	1	10	6
	R	16	23	3	3	13	9	9	9	16	15
Drum (Atlantic croaker)	H	7,657	7,222	6,944	8,389	5,328	4,744	3,305	3,455	4,318	3,461
	R	8,738	4,194	8,505	7,807	7,621	4,824	4,873	5,100	6,014	3,606
Drum (spot)	H	2,782	3,585	8,203	4,398	2,147	1,670	2,967	1,350	4,288	3,909
	R	2,457	1,372	2,156	1,487	1,458	1,155	2,245	1,146	2,218	1,174
Drum (spotted seatrout)	H	22	43	159	104	22	17	248	126	55	47
	R	192	83	363	367	171	550	1,215	429	291	404
Drum (weakfish)	H	3	13	46	21	38	11	0	29	124	54
	R	28	186	110	237	178	29	61	2,503	220	114
Red drum	H	258	461	238	245	226	74	123	70	87	61
	R	1,295	1,655	949	532	359	135	154	102	169	255
Striped bass	H	684	763	398	260	288	261	317	260	187	139
	R	2,509	2,164	3,023	2,425	3,613	2,420	1,987	856	515	642
Summer flounder	H	44	43	88	28	16	4	4	22	2	9
	R	355	556	230	427	84	178	289	103	80	108
Wrasses (tautog)	H	61	105	61	56	61	127	46	14	6	26
	R	77	200	80	34	34	130	36	17	17	56

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## Virginia | Marine Economy

### Virginia's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	193,067 (2.6%)	3,060,127 (2.6%)	121.80 (2.7%)	208.44 (2.9%)	358.73 (2.8%)	0.51
2013	193,907 (2.6%)	3,131,723 (2.6%)	154.47 (2.7%)	259.46 (2.9%)	454.98 (2.7%)	0.68
%Change	0.4	2.3	21.2	19.7	21.2	33.3

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	65	74	62	74	69	56	73	76	84
	Receipts	3,665	4,916	4,845	5,020	4,053	3,698	3,792	4,691	4,276
Seafood sales, retail	Firms	80	86	84	80	82	82	78	87	94
	Receipts	8,762	8,027	7,265	8,273	6,642	6,951	7,819	8,373	7,612

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	39	33	30	26	25	23	18	19	18
	Employees	1,336	871	955	490	941	961	899	919	781
	Payroll	39,980	28,530	34,520	11,366	30,600	30,460	33,285	32,955	30,682
Seafood sales, wholesale	Establishments	86	80	83	69	72	76	62	64	70
	Employees	675	605	734	621	519	518	469	492	483
	Payroll	21,864	21,388	25,365	17,667	15,620	17,901	15,733	14,271	14,719
Seafood sales, retail	Establishments	69	75	73	68	62	59	58	51	55
	Employees	286	334	282	251	271	265	277	280	254
	Payroll	4,865	5,348	5,227	5,170	5,401	5,480	5,453	5,563	5,526

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	15	13	15	10	9	7	7	12	11
	Employees	ds	ds	565	ds	ds	ds	ds	ds	177
	Payroll	ds	ds	30,704	ds	ds	ds	ds	ds	10,077
Deep sea freight transportation	Establishments	24	22	20	18	16	17	21	19	12
	Employees	1,090	1,564	1,611	409	ds	421	492	ds	ds
	Payroll	95,871	141,085	148,502	32,473	19,241	35,917	42,018	ds	ds
Deep sea passenger transportation	Establishments	1	1	1	2	2	1	2	1	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	141	131	126	119	118	115	110	105	113
	Employees	ds	ds	992	964	829	868	818	673	840
	Payroll	ds	ds	26,186	24,326	24,631	24,182	23,379	18,874	24,468
Marine cargo handling	Establishments	18	17	15	12	12	7	11	6	8
	Employees	1,516	1,110	1,085	ds	ds	ds	ds	ds	ds
	Payroll	52,254	51,654	56,696	ds	ds	41,280	41,262	ds	ds
Navigational services to shipping	Establishments	21	17	18	23	25	26	21	20	18
	Employees	ds	ds	216	375	384	411	419	428	303
	Payroll	ds	ds	11,700	21,014	22,177	22,910	22,132	25,732	20,283
Port & harbor operations	Establishments	9	10	10	8	6	7	6	13	14
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	50	51	52	59	53	56	51	59	54
	Employees	21,230	21,741	ds	ds	ds	ds	ds	ds	ds
	Payroll	938,375	993,066	ds	ds	ds	ds	ds	ds	ds

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.



# South Atlantic Region

- East Florida
- Georgia
- North Carolina
- South Carolina



Vermilion in tote, South Carolina  
(photo credit: Amber Van Harten)

### MANAGEMENT CONTEXT

The South Atlantic Region includes East Florida, Georgia, North Carolina and South Carolina. Federal fisheries in this region are managed by the South Atlantic Fishery Management Council (SAFMC) and NOAA Fisheries under five fishery management plans (FMPs). The coastal migratory pelagic resources and spiny lobster FMPs are managed with the Gulf of Mexico Fishery Management Council (GMFMC). The SAFMC, in cooperation with the Mid-Atlantic and New England Fishery Management Councils, has developed a dolphin wahoo FMP for the Atlantic.

#### South Atlantic Region FMPs

1. Coastal migratory pelagic resources (with GMFMC)
2. Coral, coral reef and live/hardbottom habitat
3. Dolphin/wahoo
4. Golden crab
5. Pelagic sargassum habitat
6. Shrimp
7. Snapper grouper
8. Spiny lobster (with GMFMC)

Red porgy, red snapper, snowy grouper and blueline tilefish were listed as overfished in 2014. Four stocks or stock complexes are currently subject to overfishing: red snapper, speckled hind, warsaw grouper and blueline tilefish. Snowy grouper and gag grouper were removed from the overfishing list in 2014.

### CATCH SHARE PROGRAMS

**The South Atlantic Wreckfish Individual Transferable Quota Program** was implemented in 1992 and is the only catch share program in the South Atlantic Region. This program was developed to create incentives for the conservation of wreckfish; provide a management regime, that promotes stability and facilitates long-range planning and investment by harvesters and dealers; promote management regimes that minimize gear and area conflicts among fishermen; minimize the tendency for over-capitalization in the harvesting and processing/distribution sectors; and provide a reasonable opportunity for fishermen to make adequate returns from commercial fishing by limiting entry into the program. NOAA Fisheries continues to collect data on this program to develop standard performance indica-

tors that measure its basic economic performance.

### POLICY UPDATES

Amendment 20B to the Coastal Migratory Pelagics FMP addressed issues associated with the boundaries between migratory groups, zones and subzones; allocation of commercial annual catch limits; and modification of the framework procedure for management of king mackerel, Spanish mackerel and cobia. More specifically, effective March 1, 2015, Amendment 20B will: 1) eliminate the 500-pound trip limit that is effective when 75 percent of the respective quotas are landed for king mackerel in the Florida West Coast Northern and Southern sub-zones; 2) change the fishing year for king mackerel in the Florida West Coast Northern sub-zone to October-September beginning October 1, 2015; 3) allow transit of commercial vessels with king mackerel through areas closed to king mackerel fishing, if gear is appropriately stowed; 4) create Northern and Southern Zones for Atlantic migratory group king and Spanish mackerel, each with separate quotas; 4) make administrative changes to the framework procedure for modifying management measures; 5) increase annual catch limits and catch targets for cobia; and 6) create a Florida East Coast Zone for cobia to adjust for differences between the SAFMC and GMFMC jurisdictional areas, and the biological distribution of the Gulf of Mexico and Atlantic stocks.

### COMMERCIAL FISHERIES

In 2014, commercial fishermen in the South Atlantic Region landed 105 million pounds of finfish and shellfish, earning \$184 million in landings revenue. Landings revenue was dominated by shrimp (\$50 million) and blue crab (\$46 million). These species groups commanded ex-vessel prices of \$3.17 and \$1.37 per pound, respectively, and together made up 52 percent of total landings revenue in the South Atlantic Region. North Carolina and East Florida had the highest landings revenue in the Region in 2014 with \$94 million and \$53 million, respectively. South Carolina landings revenue was \$21 million, while Georgia landings revenue was \$15 million. North Carolina also had the highest landings (62 million pounds), followed by East Florida (23 million pounds), Georgia (11 million pounds), and South Carolina (9 million pounds).



**Key South Atlantic Region Commercial Species**

- Blue crab
- Clams
- Flounders
- Groupers
- King mackerels
- Oysters
- Shrimp
- Snappers
- Swordfish
- Tunas

**Economic Impacts**

In this report, the U.S. seafood industry<sup>1,2</sup> includes the commercial harvest sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers. In 2014, the South Atlantic Region’s seafood industry generated \$18.3 billion in sales impacts in Florida, \$1.9 billion in sales impacts in Georgia, \$990 million in sales impacts in North Carolina, and \$171 million in sales impacts in South Carolina. The largest economic impacts were generated in Florida which in addition to \$18.3 billion in sales impacts, generated 93,000 jobs, \$3.4 billion in income impacts, and \$6.1 billion in value-added impacts. The smallest economic impacts in the Region were generated in South Carolina: 2,000 jobs, \$50 million in income, and \$74 million in value-added impacts. The sector that generated the greatest employment impacts by state was the importers sector with 48,000 jobs in Florida.

**Landings Revenue**

Landings revenue in the South Atlantic Region totaled \$184 million in 2014. This was a 40 percent increase (a 19% increase in real terms after adjusting for inflation) from 2005 levels and a 14 percent increase from 2013. Shrimp (\$50 million) and blue crab (\$46 million) had the highest landings revenue, together accounting for 52 percent of the South Atlantic Region’s landings revenue in 2014. North Carolina had the highest landings revenue (\$94 million), followed by East Florida (\$53 million). In 2014, these two states dominated both finfish landings revenue (\$37 million, North Carolina; \$24 million, East Florida) and shellfish landings revenue (\$57 million, North Carolina; \$29 million, East Florida).

From 2005 to 2014, landings revenue of oysters (116%, 84% in real terms), shrimp (61%, 37% in real terms), and blue crab (45%, 24% in real terms) increased significantly. In contrast, landings revenue of clams (-13%, -26% in real terms) and groupers

(-11%, -25% in real terms) declined during this period. Landing revenues from blue crab increased during this period despite an 11 percent decrease in landings. The revenue increase was due to a 63 percent (40% in real terms) increase in the market price. National market trends for blue crab show a similar trend. Landings declined 15 percent during this period, resulting in reduced supply and higher prices at the national level (up 76%, 49% increase in real terms). From 2013 to 2014, landings revenue of flounder increased 90 percent and shrimp increased 30 percent; swordfish landings revenue fell 22 percent during the same period.

**Commercial Fisheries Facts**

**Landings revenue**

- On average from 2005 to 2014, the key species or species groups accounted for 78 percent of total revenue, generating an annual average of \$125 million in the South Atlantic Region.
- On average, landings revenue in the South Atlantic region was split shellfish (61%) and finfish (39%).
- Shrimp had the highest annual average landings revenue in the region from 2005 to 2014 with \$44 million.

**Landings**

- Key species or species groups contributed an average of 66 percent annually to total landings between 2005 and 2014, or 74 million pounds.
- Blue crab contributed the most to landings in the region, averaging 38 million pounds from 2005 to 2014.

**Prices**

- Clams had the highest average annual ex-vessel price from 2005 to 2014 at \$5.68.
- Blue crabs had the lowest average annual ex-vessel price from 2005 to 2014 at \$0.98.

**Landings**

Fishermen in the South Atlantic Region landed 105 million pounds of finfish and shellfish in 2014. This figure was a 15 percent decrease from 2005 and a 15 percent increase from 2013. Finfish landings accounted for 43 percent of total landings in the South Atlantic Region (45 million pounds) in 2014. Blue crab and shrimp had the highest annual landings in the South Atlantic Region in 2014, with 34 million pounds and 16 million pounds, respectively. Together they accounted

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at: [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).

<sup>2</sup> Commercial economic impacts data were not available for East Florida; data for the entire state of Florida are reported here.

## South Atlantic Region | Regional Summary

for 47 percent of the total landings in 2014. From 2005 to 2014, landings of groupers experienced the largest decrease in landings (-45%). Species or species groups with large increases in landings include clams (135%), tunas (69%), oysters (56%) and swordfish (47%). From 2013 to 2014, landings of swordfish decreased the most (-21%). Species or species groups with large increases in landings included clams (201%) and flounders (73%).

### Prices

Ex-vessel prices for blue crab (65%, 40% in real terms), shrimp (64%, 39% in real terms), and groupers (61%, 36% in real terms) experienced the biggest increases between 2005 and 2014. Only clams (-63%, -69% in real terms) and tunas (-6%, -20% in real terms) decreased during this 10-year period. Compared with the ex-vessel prices in 2013, only shrimp (up 13%) and clams (-63%) had significant price changes.

### RECREATIONAL FISHERIES

In 2014, almost 2.7 million recreational anglers took 17.6 million fishing trips in the South Atlantic Region. Residents of a coastal county in the South Atlantic Region made up 81 percent of these anglers. Of the total fishing trips taken, 53 percent were from the shore sector and another 44 percent were from the private boat sector. The most frequently caught species or species groups in the South Atlantic Region included drum (Atlantic croaker and spot) and drum (spotted seatrout).

#### Key South Atlantic Region Recreational Species

- Atlantic croaker and spot
- Black sea bass
- Bluefish
- Dolphinfish
- King mackerel
- Sharks
- Sheepshead porgy
- Red drum
- Spanish mackerel
- Spotted seatrout

### Economic Impacts and Expenditures

The contribution of recreational fishing activities in the South Atlantic Region<sup>3</sup> are reported in terms of economic impacts at the state level (employment, sales, income and value-added impacts) and expenditures on fishing trips and durable equipment at the regional level.

Employment impacts in East Florida were the highest in the Region with approximately 44,789 full- and part-time jobs generated by recreational fishing activities in the state. North Carolina (16,007 jobs) and South Carolina (6,224 jobs) followed in terms of employment impacts.

In addition to jobs, the contribution of recreational fishing activities to the South Atlantic Region's economy can be measured in terms of sales impacts and the contribution of these activities to gross domestic product (value-added impacts). In 2014, sales impacts were the highest in East Florida (\$4.8 billion in sales impacts), followed by North Carolina (\$1.5 billion). Value-added impacts were the highest in East Florida (\$3.1 billion), followed by North Carolina (\$0.99 billion).

Total saltwater fishing trip and durable equipment expenditures were \$6.3 billion across the South Atlantic Region in 2014. Approximately 83 percent of these expenditures were related to durable equipment purchases. The largest expenditures on durable goods were for boat expenses (\$3.1 billion), followed by fishing tackle (\$1.2 billion) and other equipment (\$502.9 million). Fishing trip-related expenditures by the South Atlantic Region's non-residents totaled \$483.6 million, of which the greatest portion can be attributed to trips in the shore sector (\$309.3 million). Residents of the South Atlantic Region spent \$569 million on trip-related expenses, with the greatest of these expenses related to the private boat sector (\$309.2 million).

### Participation

There were 2.7 million recreational anglers who fished in the South Atlantic Region in 2014. This was a 12 percent decrease from 2005 (3.1 million anglers). These anglers were South Atlantic Region residents from either a coastal county (2.2 million anglers) or non-coastal county (530,000 anglers). About 81 percent of total anglers in 2014 were residents of a coastal county. Coastal county angler participation in 2014 decreased 16 percent compared with 2005 (2.6 million anglers) and increased 5 percent between 2013 and 2014. Non-coastal county angler participation increased 12 percent from 2005 (472,000 anglers) and increased 34 percent from 2013 (396,000 anglers).

<sup>3</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/publications/marine-angler-expenditures/marine-angler-2011>).

## Fishing Trips

Recreational fishermen took 17.6 million fishing trips in the South Atlantic Region in 2014. This figure was a 16 percent decrease from 2005 and a 6 percent increase from the number of trips taken in 2013. Approximately 53 percent of the saltwater trips came in the shore sector. The other most popular mode of fishing was private boat with 44 percent of trips in 2014.

## Harvest and Release

The South Atlantic Region's species and species groups caught most frequently in 2014 were drum (Atlantic croaker and spot, 10.5 million fish); drum (spotted seatrout, 5.4 million fish); and black sea bass (5.3 million fish). Between 2005 and 2014, five of the South Atlantic Region's key species or species groups showed decreases in catch totals, with the largest decreases occurring among king mackerel (-67%), dolphinfish (-33%), and drum (spotted seatrout, -32%). Large increases in the number of fish caught between 2005 and 2014 were observed in black sea bass (76%), porgies (sheepshead, 75%), and drum (Atlantic croaker and spot, 30%).

### Recreational Fisheries Facts

#### Participation

- An average of 2.8 million anglers fished in the South Atlantic Region annually from 2005 to 2014.
- Coastal county residents made up 82 percent of total anglers in this region from 2005 to 2014.

#### Fishing Trips

- In the South Atlantic Region, an average of 19.4 million fishing trips were taken annually from 2005 to 2014.
- Private or rental boat trips accounted for 48% of trips from 2005 to 2014. Shore-based trips accounted for an additional 50 percent.

#### Harvest and Release

- Atlantic croaker and spot was the most commonly caught key species or species group, averaging 8.4 million fish over the 10-year period.
- The species or species group that was most commonly released was sharks (98% released).

## MARINE ECONOMY

Note that when discussing the marine economy in the South Atlantic Region<sup>4,5</sup>, all statistics include the entire state of Florida (not just East Florida). Across all

sectors of the economy in the South Atlantic Region, approximately 16 million full- and part-time employees were employed by about 1 million establishments in 2013. Annual payroll totaled \$651 billion. Total employee compensation in the South Atlantic Region totaled \$1 trillion, and the combined gross state product of all states totaled about \$1.9 trillion.<sup>6</sup>

The Commercial Fishing Location Quotient (CFLQ) provides a measure of the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>7</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The national CFLQ is 1. If a state is less than 1, then less commercial fishing occurs in this state than the national average. If a state is greater than 1, then more commercial fishing occurs in this state than the national average.

In 2013, the CFLQ for Florida was the highest in the Region at 1.04. Florida's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 1.04 times higher than the level of employment in these industries nationwide. The 2013 CFLQ in North Carolina was second highest in the region at 0.11.

## Seafood Sales and Processing

The number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging in the South Atlantic Region increased 96 percent to 448 firms in 2013, relative to 2005. The greatest number of these non-employer firms was located in Florida (300). Annual receipts increased 89 percent to about \$28 million in 2013 (a 45% increase in real terms). Employer establishments engaged in seafood product preparation and packaging decreased 23 percent from 2005 to 2013, to 43 firms. The biggest number of South Atlantic Region employer firms in this sector was located in Florida (25). The number of employees decreased 12 percent to 2,454. Annual payroll increased 3 percent to about \$91 million in 2013 (a 20% decrease in real terms).

<sup>4</sup> Marine Economy information was not available for East Florida; information for the entire state of Florida is provided here.

<sup>5</sup> Unless otherwise stated, data is from the U.S. Census Bureau, <http://censtats.census.gov/> (accessed September 15, 2014).

<sup>6</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm) (accessed September 15, 2014).

<sup>7</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).

## South Atlantic Region | Regional Summary

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Employer establishments in the wholesale seafood sales sector decreased 13 percent from 2005 to 2013, to 337. The largest number of wholesale establishments was located in Florida (234). The number of employees decreased 3 percent to 3,330. Annual payroll increased 5 percent to about \$128 million in 2013 (a 19% decrease in real terms).

The number of non-employer firms in the retail seafood sector in the South Atlantic Region increased 21 percent to 609 firms in 2013, relative to 2005. The greatest number of these non-employer firms was located in Florida (338). Annual receipts increased 10 percent to about \$48 million in 2013 (a 16% decrease in real terms). Employer establishments engaged in seafood retail decreased 6 percent from 2005 to 2013, to 367 firms. The biggest number of South Atlantic Region employer firms in this sector was located in Florida (165). The number of employees decreased 5 percent to 1,595. Annual payroll increased 26 percent to about \$36 million in 2013 (a 3% decrease in real terms).

### Transport, Support and Marine Operations

The size of the Transport, Support and Marine Operations sectors in the South Atlantic Region is difficult to assess because much of the state-level data is suppressed for confidentiality purposes. It is clear, however, that these sectors play an important role in the regional economy. For example, there were 679 establishments classified as marinas, employing 6,871 workers and spending \$196 million on payroll in 2013 across all four states in the region. The Ship and Boat Building sector included 363 establishments, employment of 12,134 workers, and payroll of \$536 million across Florida, South Carolina and North Carolina. The vast majority of ship building activity occurred in Florida. In addition, the Marine Cargo Handling sector consisted of 99 establishments employing 9,244 workers and contributing \$310 million in payroll in Florida and Georgia alone.

# Tables | South Atlantic Region





## South Atlantic Region | Commercial Fisheries

### 2014 Economic Impacts of the South Atlantic Seafood Industry (thousands of dollars)

	Landings Revenue	With Imports				Without Imports			
		#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Florida	53,368	92,858	18,317,052	3,434,238	6,135,060	12,241	1,059,989	279,380	429,336
Georgia	15,424	13,998	1,916,044	426,208	700,572	2,117	97,251	38,289	52,101
North Carolina	94,067	11,451	989,955	278,195	414,144	6,829	327,987	136,312	180,406
South Carolina	21,487	2,035	170,997	50,013	73,648	1,407	74,281	30,299	40,354

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	131,414	140,682	152,400	165,872	147,338	165,686	171,306	171,026	161,223	184,346
Finfish & Other	56,907	60,707	61,339	60,813	63,163	65,931	66,228	63,962	60,678	67,109
Shellfish	74,507	79,976	91,061	105,059	84,176	99,756	105,078	107,064	100,545	117,237
<b>Key Species</b>										
Blue crab	31,784	27,050	33,634	40,206	37,784	36,301	33,862	37,619	44,155	46,230
Clams	4,779	4,223	4,039	3,862	3,516	3,809	3,396	3,457	3,695	4,157
Flounders	10,974	13,317	11,375	10,928	10,171	10,885	8,942	7,428	7,080	13,470
Groupers	2,814	3,416	4,565	4,084	3,214	3,022	3,027	2,611	2,605	2,499
King mackerels	5,551	6,495	6,872	7,695	8,088	7,585	6,580	5,559	5,213	5,504
Oysters	3,305	3,853	3,806	4,028	4,603	7,175	6,850	5,135	6,015	7,146
Shrimp	31,035	39,653	43,807	51,072	33,082	46,148	53,652	54,969	38,671	50,080
Snappers	3,314	2,748	3,922	4,554	4,024	3,497	3,757	3,842	3,687	3,883
Swordfish	3,134	2,753	4,298	3,661	4,821	7,519	9,400	9,482	7,207	5,656
Tunas	3,904	4,692	4,894	4,672	4,869	3,681	5,096	7,036	5,980	6,233

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	123,421	114,661	105,285	116,714	113,563	119,675	123,657	108,133	91,916	105,343
Finfish & Other	64,925	52,056	46,631	44,025	51,237	52,601	49,160	39,557	36,771	44,859
Shellfish	58,497	62,604	58,654	72,689	62,327	67,074	74,497	68,576	55,145	60,484
<b>Key Species</b>										
Blue crab	38,218	36,779	34,045	45,150	39,016	39,013	42,127	40,396	32,776	33,847
Clams	747	685	663	628	611	641	569	621	583	1,753
Flounders	5,944	6,282	4,778	5,034	5,278	5,020	4,130	2,740	2,734	4,726
Groupers	1,007	1,152	1,416	1,266	992	884	774	665	612	557
King mackerels	3,106	3,792	3,736	4,352	4,858	4,247	3,048	2,456	1,898	2,259
Oysters	730	808	776	857	938	1,439	1,233	897	1,034	1,140
Shrimp	16,048	22,080	21,235	23,343	20,110	23,204	22,940	22,374	13,804	15,809
Snappers	1,286	967	1,354	1,515	1,373	1,196	1,246	1,229	1,148	1,149
Swordfish	1,152	1,036	1,417	1,307	1,800	2,288	2,611	2,746	2,161	1,699
Tunas	1,569	2,360	2,310	1,658	1,945	1,805	2,209	2,501	2,367	2,659

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	0.83	0.74	0.99	0.89	0.97	0.93	0.80	0.93	1.35	1.37
Clams	6.40	6.16	6.09	6.15	5.76	5.94	5.97	5.57	6.34	2.37
Flounders	1.85	2.12	2.38	2.17	1.93	2.17	2.17	2.71	2.59	2.85
Groupers	2.79	2.97	3.22	3.23	3.24	3.42	3.91	3.93	4.25	4.48
King mackerels	1.79	1.71	1.84	1.77	1.66	1.79	2.16	2.26	2.75	2.44
Oysters	4.53	4.77	4.91	4.70	4.91	4.99	5.55	5.72	5.82	6.27
Shrimp	1.93	1.80	2.06	2.19	1.65	1.99	2.34	2.46	2.80	3.17
Snappers	2.58	2.84	2.90	3.01	2.93	2.92	3.02	3.13	3.21	3.38
Swordfish	2.72	2.66	3.03	2.80	2.68	3.29	3.60	3.45	3.33	3.33
Tunas	2.49	1.99	2.12	2.82	2.50	2.04	2.31	2.81	2.53	2.34

**2014 Economic Impacts of the South Atlantic Recreational Fishing Expenditures (thousands of dollars, trips)**

	Trips	#Jobs	Sales	Income	Value Added
East Florida	9,644	44,789	4,782,488	2,022,279	3,122,289
Georgia	827	2,145	189,737	88,010	135,562
North Carolina	4,954	16,007	1,529,378	636,034	989,793
South Carolina	2,221	6,224	545,375	219,815	344,307

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	129,838	24,738	Fishing Tackle	1,183,389
Private Boat	44,471	309,190	Other Equipment	502,857
Shore	309,252	235,098	Boat Expenses	3,116,069
Total	483,562	569,026	Vehicle Expenses	376,857
			Second Home Expenses	42,114
			Total Durable Expenditures	5,221,286
Total State Trip and Durable Goods Expenditures				6,273,874

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	2,615	2,603	3,158	2,330	1,922	1,932	1,893	2,136	2,092	2,189
Non-Coastal	472	477	493	560	462	536	451	502	396	530
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	3,087	3,080	3,651	2,890	2,384	2,468	2,344	2,638	2,488	2,719

**Recreational Fishing Effort by Mode (thousands of angler trips)**

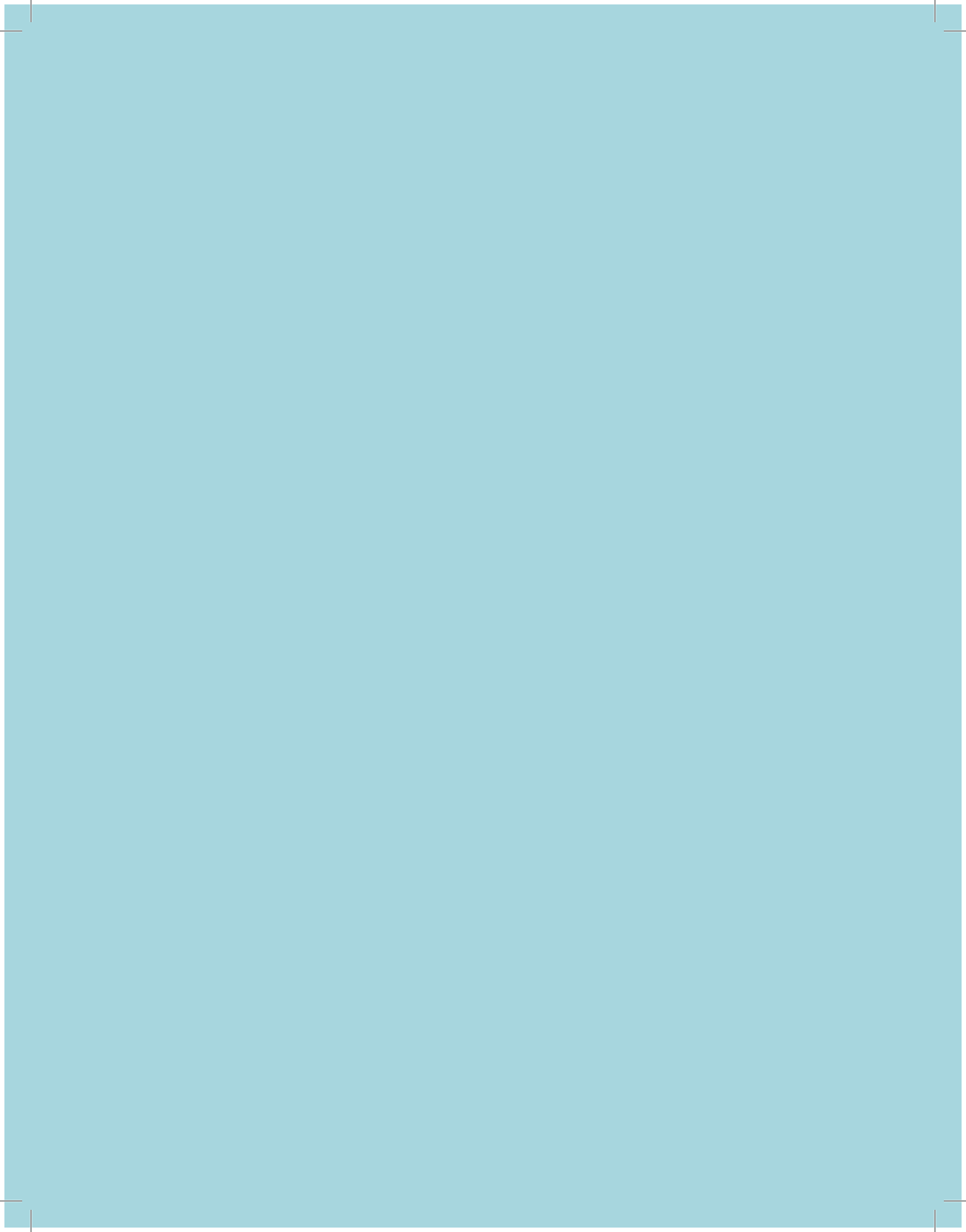
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	502	455	503	415	391	367	373	349	336	415
Private	9,897	9,823	11,537	10,910	8,923	9,513	8,664	8,774	7,879	7,836
Shore	10,620	11,250	9,956	10,469	9,371	9,184	8,639	8,670	8,403	9,395
Total Trips	21,019	21,528	21,996	21,794	18,685	19,064	17,676	17,793	16,618	17,646

**Harvest (H) & Release (R) of Key Species Species Groups (thousands of fish)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black sea bass	H	623	579	435	348	270	510	336	291	247	338
	R	2,388	2,511	2,865	2,567	1,907	2,594	3,032	4,376	2,864	4,967
Bluefish	H	2,077	1,488	1,916	1,691	1,587	2,348	1,936	1,379	1,895	1,802
	R	2,750	3,199	4,089	3,085	2,557	4,267	3,455	2,368	3,682	3,412
Dolphinfish	H	1,019	1,017	1,078	1,025	727	825	824	801	521	574
	R	202	185	394	188	98	128	354	126	168	244
Drum (Atlantic croaker and spot)	H	4,210	4,981	4,576	5,516	2,817	1,945	3,075	2,795	3,314	4,255
	R	3,882	6,756	3,774	4,182	4,867	3,335	4,183	3,560	5,786	6,280
Drum (spotted seatrout)	H	1,479	1,505	1,546	1,633	1,410	932	859	1,691	1,067	876
	R	6,409	5,264	5,554	5,166	4,170	5,771	4,889	6,519	4,289	4,524
King mackerel	H	392	490	818	483	421	234	154	150	100	128
	R	194	199	300	169	96	77	48	27	23	68
Porgies (sheepshead)	H	539	392	639	694	626	704	662	522	594	736
	R	420	419	547	693	509	496	519	628	745	944
Red drum	H	484	319	413	463	277	607	493	459	634	588
	R	2,613	2,035	1,838	2,414	1,870	3,321	2,137	2,966	3,069	2,957
Sharks <sup>2</sup>	H	93	34	50	36	38	29	26	18	41	48
	R	2,870	2,453	2,319	2,757	2,312	2,739	1,643	1,944	3,364	2,515
Spanish mackerel	H	932	654	1,061	1,315	1,126	1,073	869	820	1,054	863
	R	618	274	607	886	519	604	395	424	679	485

<sup>1</sup> NA = data are not available because out-of-state resident information is collected for individual states but does not specify whether an angler resides in a region.

<sup>2</sup> Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks and unidentified sharks.



# Tables | East Florida



## East Florida | Commercial Fisheries

### 2014 Economic Impacts of the Florida Seafood Industry (thousands of dollars)<sup>1</sup>

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	92,858	18,317,052	3,434,238	6,135,060	12,241	1,059,989	279,380	429,336
Commercial Harvesters	7,921	510,330	160,460	213,356	7,921	510,330	160,460	213,356
Seafood Processors & Dealers	5,381	863,388	167,091	328,486	640	110,089	21,306	41,885
Importers	48,133	13,240,472	2,122,038	4,036,275	-	-	-	-
Seafood Wholesalers & Distributors	11,710	1,333,732	523,618	651,451	533	60,718	23,837	29,657
Retail	19,712	2,369,130	461,031	905,493	3,146	378,853	73,777	144,438

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	35,489	42,002	42,767	47,856	40,992	51,151	60,643	57,766	48,669	53,368
Finfish & Other	16,496	17,422	19,768	21,131	23,164	25,756	26,344	26,061	24,139	24,358
Shellfish	18,993	24,580	23,000	26,726	17,828	25,395	34,300	31,705	24,530	29,010
<b>Key Species</b>										
Blue crab	4,648	3,701	4,924	4,333	2,376	3,415	4,155	4,747	3,785	2,881
Clams	390	435	391	510	415	331	220	138	28	53
Groupers	587	521	923	724	583	561	556	764	631	596
King mackerel	3,456	4,318	4,833	6,036	6,563	6,911	5,500	4,685	4,320	4,260
Lobsters	1,624	2,462	2,488	3,312	1,089	2,825	3,207	1,720	3,437	4,691
Sharks	1,201	1,364	726	636	949	757	677	458	491	550
Shrimp	11,118	16,390	13,821	17,225	12,455	17,071	24,361	21,903	14,125	18,097
Snappers	1,009	972	1,279	1,905	2,383	1,454	1,673	1,604	1,769	2,084
Spanish mackerel	2,198	2,094	2,332	1,827	2,004	2,414	2,686	2,448	2,650	2,620
Swordfish	1,625	1,219	2,529	2,339	2,385	3,677	4,005	4,838	3,287	2,704

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	22,964	27,021	25,196	26,307	27,501	29,713	31,244	28,579	21,415	23,165
Finfish & Other	12,815	13,848	13,893	14,111	16,105	17,137	16,051	14,241	12,553	13,094
Shellfish	10,149	13,173	11,303	12,196	11,396	12,576	15,193	14,338	8,862	10,072
<b>Key Species</b>										
Blue crab	4,045	3,130	4,063	3,342	1,640	2,553	3,226	3,440	2,211	1,373
Clams	42	47	41	55	54	42	22	17	5	7
Groupers	207	166	274	204	165	150	139	190	150	134
King mackerel	1,833	2,572	2,631	3,299	4,064	3,905	2,633	2,143	1,547	1,690
Lobsters	313	407	361	506	298	481	514	302	486	498
Sharks	1,292	1,472	818	776	1,109	781	716	631	657	665
Shrimp	5,203	8,843	6,174	7,619	8,662	8,743	10,528	8,869	5,044	5,757
Snappers	407	355	461	635	805	510	564	523	572	632
Spanish mackerel	3,134	3,143	3,264	2,263	2,629	3,553	3,433	2,586	2,246	2,563
Swordfish	543	407	772	791	838	1,028	1,067	1,343	831	746

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	1.15	1.18	1.21	1.30	1.45	1.34	1.29	1.38	1.71	2.10
Clams	9.27	9.20	9.52	9.29	7.73	7.90	9.84	8.17	6.00	7.74
Groupers	2.84	3.14	3.37	3.55	3.53	3.73	3.99	4.02	4.20	4.46
King mackerel	1.89	1.68	1.84	1.83	1.61	1.77	2.09	2.19	2.79	2.52
Lobsters	5.18	6.06	6.90	6.55	3.65	5.87	6.23	5.69	7.07	9.41
Sharks	0.93	0.93	0.89	0.82	0.86	0.97	0.95	0.73	0.75	0.83
Shrimp	2.14	1.85	2.24	2.26	1.44	1.95	2.31	2.47	2.80	3.14
Snappers	2.48	2.74	2.78	3.00	2.96	2.85	2.97	3.07	3.09	3.30
Spanish mackerel	0.70	0.67	0.71	0.81	0.76	0.68	0.78	0.95	1.18	1.02
Swordfish	2.99	3.00	3.28	2.96	2.85	3.58	3.75	3.60	3.96	3.63

<sup>1</sup> Information reported in this table is for the state of Florida, not East Florida.



**2014 Economic Impacts of East Florida Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	1,338	146,821	60,999	89,171
	Private Boat	2,507	267,696	100,595	165,805
	Shore	1,665	165,419	62,353	103,188
Total Durable Expenditures		39,279	4,202,552	1,798,332	2,764,125
Total State Economic Impacts		44,789	4,782,488	2,022,279	3,122,289

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	72,413	9,245	Fishing Tackle	790,080
Private Boat	16,082	169,175	Other Equipment	345,761
Shore	58,753	63,508	Boat Expenses	2,162,105
Total	147,248	241,929	Vehicle Expenses	259,948
			Second Home Expenses	18,383
			Total Durable Expenditures	3,576,276
Total State Trip and Durable Goods Expenditures				3,965,453

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	1,565	1,660	2,168	1,317	1,099	1,033	1,109	1,181	1,263	1,334
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	945	935	1,008	703	643	629	553	514	540	807
Total Anglers	2,510	2,595	3,176	2,020	1,742	1,662	1,662	1,695	1,803	2,141

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	193	171	169	137	149	118	124	144	156	193
Private	6,064	5,913	7,157	6,452	5,394	5,706	5,298	5,028	4,643	4,951
Shore	5,092	5,543	5,277	4,651	4,577	4,393	4,735	4,219	4,183	4,500
Total Trips	11,349	11,627	12,603	11,240	10,120	10,217	10,157	9,391	8,982	9,644

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Bluefish	H	444	434	471	377	623	787	556	278	409	525
	R	368	718	932	499	680	1,621	912	1,111	1,493	1,457
Dolphinfish	H	353	492	513	661	328	248	347	433	297	369
	R	200	161	373	185	77	118	346	106	163	240
Drum (kingfish)	H	998	838	854	949	409	720	936	825	972	1,212
	R	903	706	1,099	552	608	935	807	1,102	1,115	1,252
Drum (spotted seatrout)	H	379	331	278	182	172	252	287	427	335	308
	R	4,246	3,316	3,094	2,830	1,642	2,937	2,141	3,026	1,940	2,400
Gray snapper	H	397	445	689	352	225	161	187	210	639	611
	R	1,047	1,326	2,073	1,551	1,706	497	678	1,549	1,992	2,054
Jack (Florida pompano)	H	0	0	0	2	0	0	0	0	0	0
	R	0	0	0	0	0	0	0	0	0	0
King mackerel	H	242	340	515	349	292	183	133	114	73	99
	R	118	158	226	125	52	59	45	21	16	51
Porgies (sheepshead)	H	389	243	255	237	227	352	287	267	253	573
	R	289	313	307	466	354	337	358	475	471	704
Red drum	H	196	146	161	159	80	175	180	239	298	275
	R	1,406	848	758	889	521	1,414	1,051	799	1,542	1,649
Spanish mackerel	H	513	323	456	503	369	513	406	247	533	382
	R	249	141	197	364	150	282	147	89	366	208

<sup>1</sup> NA = Data is not available because all East Florida residents are considered coastal county residents.  
<sup>2</sup> In this table, '0' = 0-999 thousand fish.

East Florida's State Economy (% of national total)<sup>1</sup>

	#Establishments	#Employees	Annual Payroll (million \$)	Employee Compensation (million \$)	Gross State Product (million \$)	Commercial Fishing Location Quotient <sup>2</sup>
2005	504,662 (6.7%)	7,107,378 (6.1%)	239.20 (5.3%)	382.54 (5.4%)	700.22 (5.4%)	1.00
2013	510,389 (6.8%)	7,134,644 (6%)	294.14 (5.2%)	440.33 (5%)	800.70 (4.8%)	1.04
%Change	1.1	0.4	18.7	13.1	12.5	4.0

Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product	Firms	164	174	173	202	217	280	294	307	300
prep. & packaging	Receipts	8,756	10,184	10,497	11,065	12,473	14,635	14,618	17,557	17,214
Seafood sales, retail	Firms	247	251	319	331	316	361	362	383	338
	Receipts	22,787	20,708	27,557	26,087	25,667	27,964	29,037	30,765	25,332

Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	25	22	20	23	25	27	24	27	25
	Employees	1,616	1,704	1,748	1,637	1,143	1,269	1,095	1,608	1,374
	Payroll	47,529	62,801	58,233	53,455	46,235	45,772	42,612	51,735	50,003
Seafood sales, wholesale	Establishments	258	259	267	229	215	229	250	226	234
	Employees	1,883	2,091	2,308	1,913	1,762	1,747	1,913	1,957	1,878
	Payroll	65,339	73,897	85,019	75,203	72,159	70,889	77,115	75,945	79,266
Seafood sales, retail	Establishments	176	173	169	168	158	145	145	151	165
	Employees	970	936	989	991	885	865	849	945	909
	Payroll	19,192	19,513	20,595	21,604	21,182	20,783	20,158	21,577	23,476

Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	59	54	47	42	42	50	54	60	47
	Employees	1,150	1,217	1,242	1,106	972	709	753	1,381	1,050
	Payroll	71,420	91,638	94,429	50,115	37,774	50,217	53,341	100,402	82,078
Deep sea freight transportation	Establishments	69	73	69	57	58	61	65	75	69
	Employees	2,622	3,729	3,190	2,486	2,801	2,279	2,374	3,345	2,485
	Payroll	207,300	226,810	208,144	169,055	180,139	159,025	177,386	231,887	140,564
Deep sea passenger transportation	Establishments	31	37	34	31	33	29	29	39	31
	Employees	8,492	9,077	ds	ds	ds	ds	ds	ds	ds
	Payroll	504,625	571,590	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	551	513	493	442	428	430	411	432	444
	Employees	5,069	5,494	4,935	5,024	4,665	4,439	4,657	4,918	5,076
	Payroll	133,384	146,390	148,592	151,677	132,955	133,017	142,997	148,573	145,265
Marine cargo handling	Establishments	63	66	53	56	59	55	64	43	58
	Employees	6,409	7,266	6,585	8,052	7,288	7,547	7,484	4,598	6,258
	Payroll	177,983	189,020	173,788	192,473	185,309	191,560	195,458	86,461	188,997
Navigational services to shipping	Establishments	148	142	145	147	145	145	150	151	180
	Employees	660	781	1,484	894	829	980	1,047	853	1,390
	Payroll	42,200	48,370	61,470	56,917	60,641	76,853	75,561	68,366	130,893
Port & harbor operations	Establishments	31	27	29	40	32	34	32	66	61
	Employees	973	584	459	712	527	470	377	2,082	555
	Payroll	22,606	19,417	12,872	24,668	19,006	20,525	16,879	72,554	25,439
Ship & boat building	Establishments	312	301	296	297	261	248	246	258	259
	Employees	12,729	12,385	12,332	12,419	8,221	7,363	7,909	8,621	8,813
	Payroll	454,209	427,888	469,382	442,096	296,537	302,909	325,942	374,831	390,853

<sup>1</sup> All data presented on this page are for the entire state of Florida, not just East Florida.

<sup>2</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>3</sup> ds = these data are suppressed.

# Tables | Georgia



**2014 Economic Impacts of the Georgia Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	13,998	1,916,044	426,208	700,572	2,117	97,251	38,289	52,101
Commercial Harvesters	716	26,959	9,282	13,315	716	26,959	9,282	13,315
Seafood Processors & Dealers	1,195	93,335	35,970	47,481	228	17,836	6,874	9,074
Importers	5,135	1,412,614	226,398	430,626	-	-	-	-
Seafood Wholesalers & Distributors	1,092	133,178	45,929	64,544	40	4,916	1,695	2,383
Retail	5,861	249,959	108,629	144,605	1,133	47,540	20,438	27,329

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	13,465	11,534	11,331	13,081	11,761	13,731	16,179	16,625	11,822	15,424
Finfish & Other	729	574	625	623	626	279	146	180	516	165
Shellfish	12,736	10,960	10,706	12,458	11,135	13,452	16,033	16,445	11,306	15,258
<b>Key Species</b>										
Blue crab	3,096	2,959	3,767	3,910	3,839	2,648	3,341	4,259	3,996	3,509
Clams	658	298	290	383	473	430	605	603	563	1,192
Groupers	NA	NA	123	NA	NA	NA	NA	NA	NA	NA
Shrimp	8,936	7,640	6,446	7,877	6,608	10,103	11,398	11,045	5,776	10,074
Snails (conchs)	3	6	1	6	11	27	39	27	1	NA
Snappers	NA	NA	269	NA	NA	NA	NA	NA	NA	NA

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	9,638	8,294	7,908	8,930	7,424	7,220	12,795	10,557	10,573	11,283
Finfish & Other	401	285	304	267	306	168	83	111	116	108
Shellfish	9,237	8,009	7,603	8,663	7,118	7,053	12,712	10,447	10,457	11,176
<b>Key Species</b>										
Blue crab	4,302	4,091	4,421	4,227	3,598	2,329	3,427	4,265	3,229	2,403
Clams	112	46	49	54	76	81	107	98	105	1,308
Groupers	NA	NA	37	NA	NA	NA	NA	NA	NA	NA
Shrimp	4,531	3,851	2,797	3,132	3,324	4,553	4,355	3,928	1,901	2,797
Snails (conchs)	3	5	1	5	11	18	30	18	1	NA
Snappers	NA	NA	93	NA	NA	NA	NA	NA	NA	NA

**Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	0.72	0.72	0.85	0.92	1.07	1.14	0.97	1.00	1.24	1.46
Clams	5.85	6.49	5.89	7.03	6.24	5.30	5.68	6.18	5.34	0.91
Groupers	NA	NA	3.33	NA	NA	NA	NA	NA	NA	NA
Shrimp	1.97	1.98	2.30	2.51	1.99	2.22	2.62	2.81	3.04	3.60
Snails (conchs)	1.03	1.22	1.25	1.31	1.00	1.50	1.30	1.52	1.65	NA
Snappers	NA	NA	2.89	NA	NA	NA	NA	NA	NA	NA

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of Georgia Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	144	13,493	5,377	7,639
	Private Boat	158	15,202	5,778	9,465
	Shore	247	23,607	8,631	14,116
Total Durable Expenditures		1,596	137,435	68,224	104,342
Total State Economic Impacts		2,145	189,737	88,010	135,562

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	3,589	3,524	Fishing Tackle	48,614
Private Boat	907	12,499	Other Equipment	15,305
Shore	4,339	12,855	Boat Expenses	56,319
Total	8,835	28,877	Vehicle Expenses	27,581
			Second Home Expenses	0
			Total Durable Expenditures	147,820
Total State Trip and Durable Goods Expenditures				185,532

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	135	121	149	190	146	145	146	134	99	125
Non-Coastal	67	66	115	154	91	136	131	96	72	115
Out-of-State	43	33	45	98	45	61	78	74	53	70
Total Anglers	245	220	309	442	282	342	355	304	224	310

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	25	29	31	17	16	7	16	20	21	31
Private	538	480	577	731	516	530	620	496	387	340
Shore	370	289	421	456	311	335	335	376	283	456
Total Trips	933	798	1,029	1,204	843	872	971	892	691	827

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black drum	H	20	20	51	92	15	70	11	19	19	15
	R	11	29	35	65	23	40	5	20	10	8
Black sea bass	H	86	67	35	99	18	14	44	15	81	37
	R	218	184	292	581	112	162	226	135	295	528
Bluefish	H	4	3	11	8	1	13	3	6	3	20
	R	21	23	103	117	72	107	70	52	7	120
Drum (Atlantic croaker)	H	39	34	45	38	82	35	44	38	55	64
	R	281	284	229	294	435	264	262	168	299	471
Drum (southern kingfish)	H	511	448	575	697	587	585	873	377	396	441
	R	563	668	625	873	559	465	668	605	287	245
Drum (spotted seatrout)	H	242	378	577	642	506	384	290	527	237	256
	R	642	809	1,039	721	915	742	552	1,029	321	774
Porgies (sheepshead)	H	65	36	59	65	52	104	138	59	42	21
	R	57	52	85	98	32	38	45	29	39	18
Red drum	H	105	69	113	133	69	195	107	46	74	93
	R	334	137	226	314	168	483	213	90	199	290
Sharks <sup>2</sup>	H	5	5	9	11	7	3	6	4	6	0
	R	394	438	592	541	343	283	341	366	266	314
Southern flounder	H	38	23	92	49	34	35	28	18	19	14
	R	8	17	0	1	10	3	12	5	7	9

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

<sup>2</sup> Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks and unidentified sharks.



## Georgia | Marine Economy

### Georgia's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (million \$)	Employee Compensation (million \$)	Gross State Product (million \$)	Commercial Fishing Location Quotient <sup>1</sup>
2005	220,528 (2.9%)	3,489,046 (3%)	128.83 (2.9%)	204.06 (2.9%)	376.63 (2.9%)	0.18
2013	217,559 (2.9%)	3,458,050 (2.9%)	154.63 (2.8%)	249.02 (2.8%)	456.48 (2.7%)	0.07
%Change	-1.4	-0.9	16.7	18.1	17.5	-61.1

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	24	21	34	45	51	52	61	71	60
	Receipts	2,642	1,957	2,187	3,489	3,817	5,458	5,540	4,974	4,378
Seafood sales, retail	Firms	64	78	87	101	98	96	89	97	77
	Receipts	6,625	7,180	8,671	6,922	5,701	6,474	8,646	8,233	6,932

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	11	8	6	7	6	6	5	6	5
	Employees	1,155	1,164	0	0	0	1,056	1,022	854	945
	Payroll	39,839	43,637	0	0	0	37,343	39,433	32,928	35,987
Seafood sales, wholesale	Establishments	29	30	42	30	33	36	28	18	28
	Employees	640	659	688	565	532	514	562	468	469
	Payroll	32,781	31,654	31,033	20,122	18,628	20,075	20,660	15,459	17,326
Seafood sales, retail	Establishments	59	55	44	48	42	48	51	54	60
	Employees	185	184	179	160	162	176	176	214	210
	Payroll	2,753	2,724	2,633	2,433	2,447	2,502	2,566	3,425	3,390

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	7	6	6	6	5	4	4	3	4
	Employees	ds	ds	33	28	ds	ds	ds	ds	ds
	Payroll	ds	ds	1,883	2,040	1,700	ds	ds	ds	ds
Deep sea freight transportation	Establishments	19	15	13	14	13	14	12	12	7
	Employees	193	ds	132	156	29	ds	51	236	28
	Payroll	10,658	ds	10,090	11,275	2,192	2,465	4,833	11,238	2,311
Deep sea passenger transportation	Establishments	0	0	1	0	0	0	1	1	1
	Employees	NA	NA	ds	NA	NA	NA	ds	ds	ds
	Payroll	NA	NA	ds	NA	NA	NA	ds	ds	ds
Marinas	Establishments	60	66	68	60	58	62	63	63	59
	Employees	ds	ds	569	527	541	631	580	636	644
	Payroll	ds	ds	12,701	15,571	15,736	17,428	16,986	17,921	17,768
Marine cargo handling	Establishments	17	17	17	17	18	17	20	10	19
	Employees	2,350	3,003	2,501	2,660	3,707	2,971	4,655	ds	2,986
	Payroll	80,706	104,596	110,857	97,869	87,410	84,675	108,674	ds	120,985
Navigational services to shipping	Establishments	8	10	11	11	9	8	8	10	8
	Employees	136	ds	217	182	ds	ds	ds	ds	ds
	Payroll	7,784	ds	11,141	10,193	12,185	11,237	ds	ds	ds
Port & harbor operations	Establishments	6	5	4	5	5	4	2	13	7
	Employees	ds	196	98	ds	ds	ds	ds	ds	ds
	Payroll	ds	3,303	3,108	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	17	16	21	20	14	12	15	14	15
	Employees	ds	1,967	2,225	2,159	ds	ds	ds	ds	ds
	Payroll	ds	64,667	68,646	69,096	ds	ds	ds	ds	ds

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.

# Tables | North Carolina



**2014 Economic Impacts of the North Carolina Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	11,451	989,955	278,195	414,144	6,829	327,987	136,312	180,406
Commercial Harvesters	2,905	159,095	65,153	88,368	2,905	159,095	65,153	88,368
Seafood Processors & Dealers	1,322	87,907	34,179	44,166	541	35,965	13,983	18,070
Importers	1,861	511,961	82,052	156,068	-	-	-	-
Seafood Wholesalers & Distributors	542	58,194	20,410	26,939	163	17,497	6,136	8,099
Retail	4,821	172,797	76,402	98,602	3,220	115,430	51,039	65,869

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	64,890	70,121	82,285	86,822	77,196	79,361	71,183	72,573	79,105	94,067
Finfish & Other	34,901	37,716	36,203	34,445	34,005	33,153	31,309	31,051	29,874	37,035
Shellfish	29,989	32,405	46,082	52,377	43,192	46,208	39,874	41,523	49,232	57,032
<b>Key Species</b>										
Atlantic croaker	3,409	3,563	2,714	3,142	3,004	3,491	3,164	2,136	1,724	1,866
Black sea bass	1,332	1,715	1,195	1,156	1,401	953	628	688	869	1,409
Blue crab	20,274	17,087	21,432	27,555	27,429	26,425	21,282	22,809	30,007	34,028
Clams	2,798	2,656	2,660	2,435	2,086	2,359	1,933	2,131	2,349	2,913
Flounders	10,963	13,301	11,335	10,886	10,124	10,845	8,890	7,421	7,059	13,058
Groupers	1,214	1,559	1,995	1,939	1,609	1,512	1,302	1,206	1,041	1,057
King mackerel	2,054	2,120	1,967	1,632	1,500	650	1,062	831	877	1,204
Shrimp	4,409	9,141	17,905	19,251	8,528	10,804	10,886	13,333	12,947	14,144
Snappers	1,116	953	1,601	1,784	1,073	963	1,004	900	917	865
Tunas	3,321	4,060	4,046	3,393	2,922	1,193	2,437	4,398	3,207	3,617

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	79,607	68,744	62,871	71,209	68,955	71,994	67,487	56,671	50,191	61,943
Finfish & Other	49,435	35,675	30,440	27,706	32,421	32,519	29,806	22,782	22,076	29,497
Shellfish	30,172	33,069	32,432	43,503	36,534	39,474	37,681	33,889	28,115	32,446
<b>Key Species</b>										
Atlantic croaker	11,903	10,397	7,271	5,792	6,135	7,312	5,054	3,107	1,928	2,630
Black sea bass	690	778	473	485	615	401	272	256	330	527
Blue crab	25,430	25,343	21,425	32,917	29,707	30,683	30,035	26,787	22,203	26,231
Clams	418	427	438	400	359	366	302	404	356	438
Flounders	5,937	6,272	4,754	5,009	5,256	5,001	4,102	2,736	2,728	4,584
Groupers	481	587	701	683	553	493	366	327	261	252
King mackerel	1,246	1,186	1,059	1,037	778	329	408	297	345	550
Shrimp	2,358	5,737	9,537	9,427	5,408	5,955	5,140	6,141	4,860	4,691
Snappers	433	345	550	603	374	320	326	279	276	251
Tunas	1,271	1,982	1,836	1,041	1,028	703	1,056	1,482	1,283	1,647

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic croaker	0.29	0.34	0.37	0.54	0.49	0.48	0.63	0.69	0.89	0.71
Black sea bass	1.93	2.21	2.53	2.39	2.28	2.38	2.31	2.69	2.64	2.67
Blue crab	0.80	0.67	1.00	0.84	0.92	0.86	0.71	0.85	1.35	1.30
Clams	6.69	6.21	6.08	6.09	5.82	6.44	6.39	5.28	6.61	6.65
Flounders	1.85	2.12	2.38	2.17	1.93	2.17	2.17	2.71	2.59	2.85
Groupers	2.52	2.65	2.84	2.84	2.91	3.07	3.56	3.69	3.98	4.20
King mackerel	1.65	1.79	1.86	1.57	1.93	1.98	2.60	2.79	2.54	2.19
Shrimp	1.87	1.59	1.88	2.04	1.58	1.81	2.12	2.17	2.66	3.02
Snappers	2.58	2.76	2.91	2.96	2.87	3.01	3.08	3.22	3.32	3.44
Tunas	2.61	2.05	2.20	3.26	2.84	1.70	2.31	2.97	2.50	2.20

**2014 Economic Impacts of North Carolina Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	518	48,746	19,370	27,801
	Private Boat	1,306	130,556	48,423	79,353
	Shore	3,977	374,571	133,010	220,401
Total Durable Expenditures		10,206	975,505	435,231	662,238
Total State Economic Impacts		16,007	1,529,378	636,034	989,793

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	21,844	7,328	Fishing Tackle	252,564
Private Boat	18,533	97,311	Other Equipment	101,316
Shore	138,121	136,693	Boat Expenses	716,278
Total	178,499	241,332	Vehicle Expenses	65,582
			Second Home Expenses	23,731
			Total Durable Expenditures	1,159,471
Total State Trip and Durable Goods Expenditures				1,579,302

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	685	588	564	587	446	544	490	614	564	549
Non-Coastal	285	265	265	303	259	296	254	283	240	301
Out-of-State	1,280	1,374	1,079	1,079	976	1,073	755	764	601	805
Total Anglers	2,250	2,227	1,908	1,969	1,681	1,913	1,499	1,661	1,405	1,655

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	259	234	218	192	146	165	152	160	111	97
Private	2,346	2,452	2,671	2,461	2,005	2,199	1,899	2,061	2,101	1,707
Shore	3,938	4,178	3,445	4,246	3,158	3,313	2,690	3,083	2,756	3,150
Total Trips	6,543	6,864	6,334	6,899	5,309	5,677	4,741	5,304	4,968	4,954

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black sea bass	H	231	125	110	58	107	139	95	76	50	74
	R	1,195	1,176	952	560	667	1,104	1,063	2,085	1,368	1,334
Bluefish	H	1,382	917	1,258	1,178	828	1,104	1,153	889	1,184	1,085
	R	2,044	1,836	2,377	2,136	1,553	2,221	1,923	1,036	1,873	1,537
Dolphinfish	H	663	522	533	358	367	499	472	327	212	185
	R	2	24	5	2	3	5	8	2	3	4
Drum (Atlantic croaker and spot)	H	3,340	3,535	3,539	2,163	1,425	1,312	1,454	1,073	1,876	2,653
	R	2,736	5,167	2,805	2,742	3,134	2,469	2,798	2,014	3,298	3,605
Drum (spotted seatrout)	H	586	565	531	655	608	195	216	501	369	234
	R	1,059	595	849	881	1,213	1,685	1,916	1,647	1,427	961
Flounder (lefteye and summer)	H	156	150	190	71	100	143	92	106	91	145
	R	878	925	1,090	1,689	1,213	1,586	990	1,397	1,529	1,059
King mackerel	H	139	143	269	105	91	37	15	28	23	23
	R	73	32	44	25	12	7	1	3	5	10
Spanish mackerel	H	336	306	495	744	678	484	368	491	497	398
	R	180	96	259	449	312	294	171	235	289	241
Striped bass	H	137	99	49	36	12	34	106	8	20	8
	R	124	63	82	175	121	108	296	176	124	95
Yellowfin tuna	H	181	166	102	26	29	23	26	57	45	28
	R	8	13	1	0	1	1	0	4	1	4

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

## North Carolina | Marine Economy

### North Carolina's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	216,994 (2.9%)	3,409,968 (2.9%)	115.74 (2.6%)	189.56 (2.7%)	357.71 (2.7%)	0.11
2013	218,285 (2.9%)	3,421,195 (2.9%)	143.34 (2.6%)	238.87 (2.7%)	467.07 (2.8%)	0.11
%Change	0.6	0.3	19.3	20.6	23.4	0.0

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	26	27	30	ds	34	40	50	46	58
	Receipts	1,106	1,084	1,813	ds	1,297	1,652	2,705	1,630	4,605
Seafood sales, retail	Firms	130	115	150	114	140	126	144	136	127
	Receipts	10,913	11,342	14,999	10,918	12,188	9,057	10,386	11,990	12,175

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	17	18	22	18	16	16	14	12	13
	Employees	0	475	0	232	170	171	0	0	135
	Payroll	0	11,563	12,659	5,373	4,461	4,749	4,830	5,084	4,563
Seafood sales, wholesale	Establishments	77	70	71	65	66	66	64	59	59
	Employees	703	582	597	559	584	590	603	793	849
	Payroll	17,577	16,543	15,655	16,843	17,383	18,348	19,344	23,949	26,687
Seafood sales, retail	Establishments	90	89	86	90	77	82	84	88	86
	Employees	316	250	241	219	243	247	244	289	254
	Payroll	4,185	4,129	4,170	4,143	4,494	5,017	5,250	5,860	5,872

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	5	4	6	4	6	4	5	6	5
	Employees	ds	ds	54	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	2,061	ds	2,366	ds	ds	ds	ds
Deep sea freight transportation	Establishments	7	8	6	5	6	10	8	7	8
	Employees	ds	ds	ds	ds	9	ds	ds	25	ds
	Payroll	ds	ds	510	533	617	ds	ds	1,579	ds
Deep sea passenger transportation	Establishments	2	1	1	0	1	0	1	0	0
	Employees	ds	ds	ds	NA	ds	NA	ds	NA	NA
	Payroll	ds	ds	ds	NA	ds	NA	ds	NA	NA
Marinas	Establishments	103	103	96	107	105	102	104	102	99
	Employees	654	681	522	656	501	536	524	531	501
	Payroll	16,530	16,616	14,922	17,164	15,858	16,238	16,187	15,975	16,369
Marine cargo handling	Establishments	12	9	13	13	12	11	14	6	9
	Employees	641	757	652	760	914	600	ds	ds	ds
	Payroll	25,988	19,736	25,164	23,328	20,707	20,755	ds	ds	ds
Navigational services to shipping	Establishments	8	7	14	10	11	13	11	8	10
	Employees	ds	ds	102	87	96	94	86	90	77
	Payroll	ds	ds	3,773	3,668	4,313	3,968	4,041	3,203	3,583
Port & harbor operations	Establishments	5	5	3	3	2	4	3	9	5
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	46
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	1,579
Ship & boat building	Establishments	65	74	78	77	64	60	57	60	52
	Employees	3,957	4,232	ds	4,281	1,983	1,501	1,515	1,760	1,059
	Payroll	133,665	153,672	ds	138,243	68,004	64,807	66,929	74,843	49,462

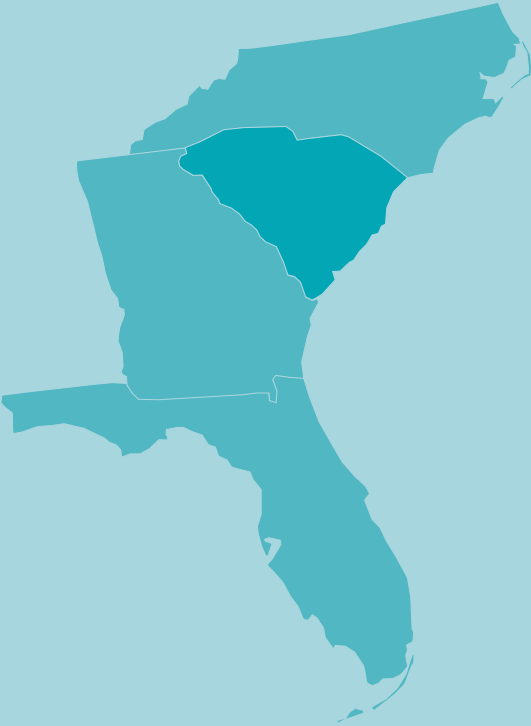
<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.



# Tables | South Carolina



## South Carolina | Commercial Fisheries

### 2014 Economic Impacts of the South Carolina Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	2,035	170,997	50,013	73,648	1,407	74,281	30,299	40,354
Commercial Harvesters	508	35,638	13,886	19,155	508	35,638	13,886	19,155
Seafood Processors & Dealers	131	9,908	3,876	4,984	104	7,846	3,069	3,947
Importers	290	79,785	12,787	24,322	-	-	-	-
Seafood Wholesalers & Distributors	91	9,177	3,224	4,235	36	3,663	1,287	1,690
Retail	1,015	36,489	16,240	20,953	759	27,134	12,056	15,563

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	17,570	17,025	16,017	17,872	17,256	21,205	23,300	24,061	21,627	21,487
Finfish & Other	4,781	4,995	4,744	4,614	5,338	6,740	8,429	6,670	6,149	5,550
Shellfish	12,789	12,031	11,274	13,259	11,918	14,465	14,871	17,391	15,478	15,937
<b>Key Species</b>										
Black sea bass	191	168	236	257	362	213	182	303	434	321
Blue crab	3,766	3,304	3,511	4,187	4,059	3,593	5,084	5,804	6,367	5,811
Clams	934	834	697	535	542	688	638	584	755	NA
Groupers	1,013	1,335	1,524	1,421	1,021	949	1,169	640	933	846
Oysters	1,471	1,369	1,375	1,739	1,738	1,858	1,975	2,155	2,341	2,243
Sharks	136	144	78	78	56	123	166	136	76	73
Shrimp	6,572	6,481	5,634	6,712	5,487	8,168	7,008	8,688	5,823	7,765
Snappers	1,190	823	773	864	568	1,079	1,080	1,338	1,001	935
Swordfish	NA	NA	NA	187	1,116	1,944	2,777	1,635	983	842
Tilefish	143	271	5	66	9	25	8	128	379	475

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	11,212	10,602	9,310	10,081	9,599	10,567	12,131	12,325	9,736	8,951
Finfish & Other	2,274	2,249	1,994	1,940	2,384	2,774	3,220	2,424	2,026	2,160
Shellfish	8,938	8,353	7,316	8,141	7,215	7,793	8,911	9,902	7,711	6,791
<b>Key Species</b>										
Black sea bass	115	86	114	132	168	98	100	118	163	122
Blue crab	4,440	4,215	4,137	4,484	4,014	3,275	5,439	5,905	5,133	3,839
Clams	175	165	135	119	123	152	137	102	118	NA
Groupers	319	399	404	379	274	241	269	148	201	172
Oysters	308	291	285	324	309	332	337	362	376	339
Sharks	174	147	105	110	63	87	108	104	52	50
Shrimp	3,957	3,650	2,727	3,162	2,716	3,951	2,918	3,435	1,999	2,564
Snappers	447	267	250	277	194	365	356	427	299	266
Swordfish	NA	NA	NA	71	459	630	741	500	272	259
Tilefish	80	139	4	28	5	15	4	46	150	174

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black sea bass	1.66	1.97	2.07	1.94	2.15	2.16	1.82	2.58	2.67	2.63
Blue crab	0.85	0.78	0.85	0.93	1.01	1.10	0.93	0.98	1.24	1.51
Clams	5.34	5.06	5.17	4.51	4.42	4.54	4.65	5.71	6.42	NA
Groupers	3.17	3.35	3.77	3.75	3.73	3.94	4.35	4.33	4.64	4.92
Oysters	4.78	4.71	4.82	5.36	5.63	5.60	5.85	5.96	6.23	6.61
Sharks	0.78	0.98	0.74	0.71	0.89	1.42	1.53	1.30	1.45	1.44
Shrimp	1.66	1.78	2.07	2.12	2.02	2.07	2.40	2.53	2.91	3.03
Snappers	2.66	3.08	3.09	3.12	2.92	2.95	3.03	3.13	3.34	3.52
Swordfish	NA	NA	NA	2.64	2.43	3.09	3.75	3.27	3.61	3.25
Tilefish	1.78	1.95	1.36	2.30	2.00	1.71	1.84	2.78	2.53	2.73

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of South Carolina Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	625	56,195	23,189	32,457
	Private Boat	462	38,214	13,978	22,553
	Shore	1,809	158,309	55,154	93,398
Total Durable Expenditures		3,328	292,657	127,494	195,899
Total State Economic Impacts		6,224	545,375	219,815	344,307

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	31,992	4,641	Fishing Tackle	92,131
Private Boat	8,949	30,205	Other Equipment	40,475
Shore	108,039	22,042	Boat Expenses	181,367
Total	148,980	56,888	Vehicle Expenses	23,746
			Second Home Expenses	0
			Total Durable Expenditures	337,719
Total State Trip and Durable Goods Expenditures				543,587

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	230	234	277	236	231	210	148	207	166	181
Non-Coastal	120	146	113	103	112	104	66	123	84	114
Out-of-State	448	617	551	604	554	494	264	406	602	569
Total Anglers	798	997	941	943	897	808	478	736	852	864

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	25	21	85	69	80	77	81	25	48	94
Private	949	978	1,132	1,266	1,008	1,078	847	1,189	748	838
Shore	1,220	1,240	813	1,116	1,325	1,143	879	992	1,181	1,289
Total Trips	2,194	2,239	2,030	2,451	2,413	2,298	1,807	2,206	1,977	2,221

**Harvest (H) & Release (R) of Key Species Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black sea bass	H	74	182	125	90	37	216	56	91	24	108
	R	513	583	921	864	471	640	661	811	381	1,593
Bluefish	H	247	134	176	128	135	444	224	206	299	172
	R	317	622	677	333	252	318	550	169	309	298
Drum (Atlantic croaker and spot)	H	502	1,229	643	2,799	829	370	947	1,030	832	615
	R	504	1,092	376	394	840	354	464	358	1,751	1,207
Drum (southern kingfish)	H	998	926	699	823	1,056	389	609	778	1,195	698
	R	391	1,163	540	612	690	0	68	146	0	7
Drum (spotted seatrout)	H	272	231	160	154	124	101	66	236	126	78
	R	462	544	572	734	400	407	280	817	601	389
Porgies (sheepshead)	H	45	61	109	217	222	102	171	76	26	81
	R	47	27	21	60	23	58	93	45	81	150
Red drum	H	131	48	72	120	70	173	161	121	98	104
	R	494	540	437	553	751	787	665	543	674	636
Sharks <sup>2</sup>	H	46	5	11	9	23	11	11	6	15	21
	R	889	966	418	475	804	1,171	389	672	1,162	845
Southern flounder	H	85	111	77	103	89	109	102	91	62	59
	R	73	200	106	103	74	0	17	35	0	0
Spanish mackerel	H	70	23	95	54	74	71	87	80	22	81
	R	185	28	97	68	56	28	67	98	24	35

<sup>1</sup> In this table, '0' = 0-999 thousand fish.

<sup>2</sup> Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks and unidentified sharks.

## South Carolina | Marine Economy

### South Carolina's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	103,416 (1.4%)	1,584,914 (1.4%)	49.45 (1.1%)	82.31 (1.2%)	144.75 (1.1%)	0.11
2013	101,545 (1.4%)	1,583,213 (1.3%)	59.30 (1.1%)	102.54 (1.2%)	182.40 (1.1%)	0.07
%Change	-1.8	-0.1	16.6	19.7	20.6	-36.4

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	14	12	12	15	21	23	32	35	30
	Receipts	2,234	1,303	857	1,155	1,794	1,386	1,326	1,868	1,657
Seafood sales, retail	Firms	61	76	75	64	77	78	87	67	67
	Receipts	3,588	3,427	3,876	4,650	4,709	3,978	5,535	4,818	3,765

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	3	3	5	2	2	2	1	0	0
	Employees	7	0	0	0	0	0	0	NA	NA
	Payroll	145	0	0	0	0	0	0	NA	NA
Seafood sales, wholesale	Establishments	22	19	26	20	15	16	12	15	16
	Employees	211	191	220	108	111	120	101	125	134
	Payroll	5,818	5,542	6,186	3,770	3,676	3,868	3,760	4,506	4,849
Seafood sales, retail	Establishments	64	62	60	64	57	56	61	60	56
	Employees	206	190	210	292	261	260	245	228	222
	Payroll	2,773	2,905	3,155	4,871	4,901	4,580	4,231	3,670	3,713

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	4	4	5	4	4	4	4	5	5
	Employees	45	ds	60	ds	ds	ds	ds	40	ds
	Payroll	1,882	ds	2,352	ds	ds	ds	ds	2,625	ds
Deep sea freight transportation	Establishments	10	9	6	4	8	7	6	6	4
	Employees	113	ds	67	ds	ds	20	ds	ds	21
	Payroll	4,600	ds	3,419	659	ds	758	722	ds	633
Deep sea passenger transportation	Establishments	1	1	1	7	6	2	2	1	0
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	NA
Marinas	Establishments	70	71	72	68	69	73	75	70	77
	Employees	398	452	469	588	533	537	543	595	650
	Payroll	8,050	10,105	11,498	13,753	12,642	13,786	15,805	15,408	16,147
Marine cargo handling	Establishments	18	17	15	17	14	12	14	10	13
	Employees	1,994	2,707	1,419	1,282	1,953	1,731	1,717	715	ds
	Payroll	66,767	83,142	75,967	56,812	43,170	39,625	49,172	30,381	ds
Navigational services to shipping	Establishments	7	8	6	8	8	7	8	10	8
	Employees	ds	155	152	227	208	222	217	247	221
	Payroll	ds	7,588	7,369	11,916	12,522	12,591	11,922	16,625	13,820
Port & harbor operations	Establishments	1	1	3	3	2	2	5	7	2
	Employees	ds	ds	113	ds	ds	ds	ds	676	ds
	Payroll	ds	ds	7,058	ds	ds	ds	ds	29,332	ds
Ship & boat building	Establishments	48	45	41	46	41	39	41	39	37
	Employees	2,672	2,425	2,962	3,001	1,929	1,922	1,943	1,980	2,262
	Payroll	97,087	92,098	102,531	97,743	73,988	74,945	85,568	90,942	96,081

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

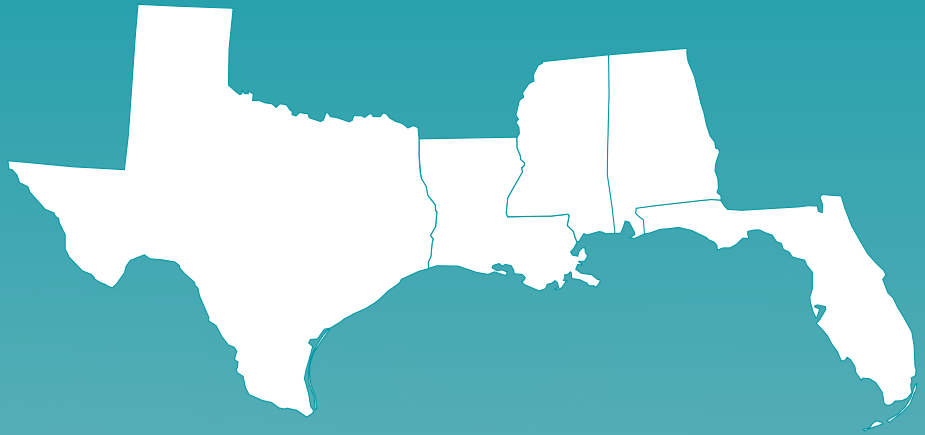
<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = data not available.



# Gulf of Mexico Region

- Alabama
- West Florida
- Louisiana
- Mississippi
- Texas



Shrimp trawler, Galveston, Texas (1968)  
(photo credit: Robert Brigham)



### MANAGEMENT CONTEXT

The Gulf of Mexico Region includes Alabama, Louisiana, Mississippi, Texas and West Florida. Federal fisheries in this region are managed by the Gulf of Mexico Fishery Management Council (GMFMC) and NOAA Fisheries under seven fishery management plans (FMPs). The coastal migratory pelagic resources and spiny lobster fisheries are managed in conjunction with the South Atlantic Fishery Management Council (SAFMC).

#### FMPs in the Gulf of Mexico Region

1. Aquaculture
2. Coastal migratory pelagic resources (with SAFMC)
3. Corals
4. Red drum
5. Reef fish
6. Shrimp
7. Spiny lobster (with SAFMC)

Three stocks or stock complexes in the Gulf of Mexico Region were identified as overfished in 2014: gray triggerfish, greater amberjack and red snapper. Gag grouper was removed from the overfished list in 2014. Hogfish, gray triggerfish and greater amberjack were listed as subject to overfishing in 2014. The jacks complex was removed from the overfishing list in 2014.

### CATCH SHARE PROGRAMS

Two catch share programs have been implemented in the Gulf of Mexico: the Red Snapper Individual Fishing Quota (IFQ) Program and the Grouper-Tilefish IFQ Program. Below is a description of these catch share programs and their performance.

**The Red Snapper IFQ Program** was implemented in 2007 to reduce overcapacity and mitigate derby fishing conditions. The key performance indicators of this program show that relative to the Baseline period (the 3-year period prior to implementation), the 2013 quota, landings, inflation-adjusted total revenue and inflation-adjusted total revenue per vessel increased. In contrast, the number of active vessels decreased during this period.

**The Grouper-Tilefish IFQ Program** was implemented in 2010 to reduce overcapacity and mitigate derby

fishing conditions in the grouper-tilefish segment of the commercial reef fish fishery. The key performance indicators of this Program show that relative to the Baseline period (the 3-year period prior to implementation), 2013 inflation-adjusted total revenue and inflation-adjusted revenue per active vessel increased. However, quota, landings and number of active vessels decreased during this period.

### POLICY UPDATES

In May 2015, a final rule was established to increase the commercial and recreational quotas for red snapper in the Gulf of Mexico from 2015 to 2017. Unless the GMFMC changes this rule in the future, the values for 2017 will remain in effect for 2018 and beyond. The total allowable catch increased from 11 million pounds whole weight to 14.3 million pounds. The commercial and recreational quotas are based on the current allocation, which provides 51 percent of the allowable catch to the commercial sector and 49 percent to the recreational sector. Because the commercial sector is managed under the Red Snapper IFQ Program, the increased quota was allocated as pounds of red snapper among participating shareholders.

In addition, to ensure that the recreational sector does not exceed the red snapper quota, the GMFMC established a recreational catch target that is less than the recreational quota. NOAA Fisheries based the recreational fishing season on this catch target. The recreational sector was also divided into two components: the for-hire component and the private angling component. Each component has its own annual catch targets (2.371 million pounds for the for-hire component and 3.234 million pounds for the private angling component). In addition, each component has its own fishing season (44 days for the for-hire component and 10 days for the private angling component). Both components are managed under the same bag and size limits.

### COMMERCIAL FISHERIES

In 2014, commercial fishermen in the Gulf of Mexico Region landed 1.1 billion pounds of finfish and shellfish, earning \$1 billion for their harvest. Landings revenue was dominated by shrimp (\$588 million), which made up 57 percent of revenue and 18 percent of landings. Other sig-

nificant contributors to regional landings included oysters (\$87 million), blue crab (\$73 million) and menhaden (\$71 million). Louisiana and Texas had the highest landings revenue in the region in 2014, with \$451 million and \$278 million, respectively. In terms of pounds landed, Louisiana had the highest landings with 778 million pounds, followed by Mississippi with 191 million pounds.

**Key Gulf of Mexico Region Commercial Species**

- Blue crab
- Crawfish
- Groupers
- Menhaden
- Mulletts
- Oysters
- Red snapper
- Shrimp
- Stone crab
- Tunas

**Economic Impacts**

In this report<sup>1,2</sup>, the U.S. seafood industry includes the commercial harvest sector; seafood processors and dealers; seafood wholesalers and distributors; importers; and seafood retailers. In 2014, the Gulf of Mexico Region’s seafood industry generated \$18.3 billion in sales impacts in Florida (including East and West Florida); \$2.9 billion in Texas; \$2.2 billion in Louisiana; \$661 million in Alabama; and \$199 million in Mississippi. Florida generated the largest employment (93,000 jobs), income (\$3.4 billion) and value-added (\$6.1 billion) impacts. The importers sector in Florida generated the greatest employment impacts with 48,000 jobs. Florida importers also generated higher sales impacts (\$13.2 billion) than any other sector in any another state in the region. In addition, this sector had the greatest value added impacts (\$4 billion).

**Landings Revenue**

Landings revenue in the Gulf of Mexico Region totaled \$1 billion in 2014. This figure represents a 64 percent increase (40% in real terms after adjusting for inflation) from 2005 levels and a 9 percent increase from 2013. Louisiana had the highest landing revenues (\$451 million), followed by Texas (\$278 million) and West Florida (\$203 million). Shellfish landings revenue totaled \$843 million in 2014, an increase of 68 percent (43% in real terms) from 2005 and a 14 percent increase from 2013. Shellfish landings revenue was greatest in Louisiana (\$363 million), followed by Texas (\$265 million) and

West Florida (\$113 million). Finfish landings revenue totaled \$184 million and was highest in Louisiana (\$88 million), followed by West Florida (\$70 million).

From 2005 to 2014, menhaden landings revenue increased 115 percent (83% in real terms), primarily due to prices more than doubling. Red snapper increased 104 percent (73% in real terms) during this period due to a combination of higher prices and landings. Red snapper landings were at their highest level since 1983, largely because the quota increased 120 percent from 2009 to 2014. Blue crab landings revenue almost doubled from 2005 to 2014 (up 93%, 64% in real terms). Only tuna landings revenue decreased over this 10-year period (-33%, -43% in real terms). Between 2013 and 2014, landings revenue for six out of the 10 key species or species groups increased. Landings revenue for groupers (23%, 21% in real terms) and blue crab (19%, 17% in real terms) increased the most during this period. Menhaden (-26%, -27% in real terms) and mulletts (-22%, -23% in real terms) decreased the most.

**Landings**

Fishermen in the Gulf of Mexico Region landed 1.1 billion pounds of finfish and shellfish in 2014. This was a 5 percent decrease from 2005 and an 18 percent decrease from 2013. Finfish landings constituted 74 percent of total landings in the Gulf of Mexico Region (841 million pounds) in 2014, but decreased 23 percent from 2013 to 2014. Shellfish landings in 2014 were virtually unchanged from 2013 levels.

The regionally-managed menhaden fishery is the largest fishery by volume in the Gulf of Mexico (67% of total landings in 2014) but has only two participants — Omega Protein Inc. and Daybrook Fisheries Inc. These two companies own three seafood processing plants and the fishing vessels that prosecute the fishery. Menhaden landings decreased by 6 percent from 2005 to 2014 and by 25 percent from 2013 levels. The sizable decline from 2013 levels has been attributed to two main factors: poor weather during the early part of the menhaden season; and the tendency of several fish schools to remain in the estuaries in 2014 rather than migrate to the Gulf, as typically occurs late in the season.

<sup>1</sup> The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates (see NMFS Commercial Fishing & Seafood Industry Input/Output Model, available at [www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)).  
<sup>2</sup> Separate commercial economic impacts were not available for West Florida. Impacts for the entire state of Florida are reported here.

**Commercial Fisheries Facts**

**Landings Revenue**

- On average from 2005 to 2014, the key species or species groups accounted for 90 percent of total revenue, generating \$675 million in the Gulf of Mexico Region.
- Shrimp had higher landings revenues than any other species or species group, averaging \$409 million in landings revenue from 2005 to 2014.

**Landings**

- Key species or species groups contributed an average of 96 percent annually to total landings from 2005 to 2014, or 1.3 billion pounds annually.
- Menhaden contributed the most to landings in the region, averaging 967 million pounds from 2005 to 2014.

**Prices**

- Stone crab had the highest average annual ex-vessel price per pound from 2005 to 2014: \$5.51
- Menhaden had the lowest average annual ex-vessel price per pound from 2005 to 2014: \$0.07

The shrimp fishery is the second largest fishery in the Gulf, accounting for 18 percent of total landings in 2014. Despite this standing, shrimp landings decreased 4 percent from 2005 to 2014. During this same period, landings of mullets (51%) and red snapper (39%) increased significantly. Species or species groups with significantly lower landings during this period included stone crabs (-58%), tunas (-42%) and crawfish (-26%). Stone crabs (-50%), crawfish (-43%) and menhaden (-25%) had the largest landings declines between 2013 to 2014. Stone crab landings reached their lowest levels since 1971 with landings trending downward since 2011. Groupers were the only key species or species group with a sizable increase in landings (17%) from 2013 to 2014.

**Prices**

In 2014, all 10 key species in the region experienced ex-vessel prices that were higher than their 10-year averages (both nominal and real). Ex-vessel prices for stone crab (207%, 160% in real terms); menhaden (125%, 80% in real terms); crawfish (118%, 85% in real terms); and blue crab (103%, 73% in real terms)

increased the most between 2005 and 2014. Compared with ex-vessel prices in 2013, the Gulf of Mexico Region’s stone crab (119%), crawfish (43%) and oysters (32%) experienced the greatest price increases. Nominally, 2014 shrimp prices were the highest on record. After adjusting for inflation, the 2014 ex-vessel price for Gulf shrimp hit its highest level since 2000, rising steadily from its record low in 2009. The rise in Gulf shrimp prices has been attributed to a number of factors, including the disruption in the Asian market due to the spread of “early mortality syndrome” (EMS), a bacteria that causes early death in shrimp. Global shrimp production fell 19 percent in 2013 (down almost 50 percent in Thailand, the world’s largest shrimp exporter), but experienced a slight rise in 2014.

**RECREATIONAL FISHERIES**

In 2014, approximately 2.9 million recreational anglers took 21 million fishing trips in the Gulf of Mexico Region. Coastal county residents in the Gulf Region made up 91 percent of these anglers. Of the total fishing trips taken, 55 percent were from the private boat sector and 41 percent were from the shore sector. The most frequently caught species or species groups in the Gulf Region included drum (spotted seatrout) and red drum.

**Key Gulf of Mexico Region Recreational Species**

- Atlantic croaker
- Gulf and southern kingfish
- Red drum
- Red snapper
- Sand and silver seatrout
- Sheepshead porgy
- Southern flounder
- Spanish mackerel
- Spotted seatrout
- Striped mullet

**Economic Impacts and Expenditures**

The contribution of recreational fishing activities<sup>3</sup> in the Gulf of Mexico Region is reported in terms of economic impacts at the state level (employment, sales, income and value-added impacts) and expenditures on fishing trips and durable equipment at the regional level. Employment impacts in West Florida were the highest in the region with approximately 70,109 full- and part-time jobs generated by recreational fishing activities. Texas (16,496 jobs) and Louisiana (15,241 jobs) followed in terms of employment impacts.

<sup>3</sup> Trip expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure Survey. Durable good expenditure impacts were generated from the 2014 National Marine Recreational Fishing Expenditure Survey (see <http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>). Economic impacts from recreational fishing activities were generated using the NMFS Recreational Economic Impact Model (see The Economic Contribution of Marine Angler Expenditures in the United States, 2011, available at <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>).

In addition to jobs, the contribution of recreational fishing activities to the Gulf of Mexico Region’s economy can be measured in terms of sales impacts and the contribution of these activities to gross domestic product (value-added impacts). In 2014, sales impacts were highest in West Florida (\$7.5 billion), followed by Texas (\$1.8 billion). Value-added impacts were highest in West Florida (\$4.9 billion), followed by Texas (\$1.2 billion).

In 2014, the total saltwater fishing trip and durable equipment expenditures were \$11.5 billion across the Gulf of Mexico Region. Approximately 87 percent of these expenditures were related to durable equipment purchases. The largest expenditures on durable goods were for boat expenses (\$5.8 billion), followed by fishing tackle (\$2.2 billion) and vehicle expenses (\$1 billion). Fishing trip-related expenditures by non-residents totaled \$645.7 million, of which the greatest portion can be attributed to trips in the for-hire sector (\$287.1 million). Residents of the Gulf of Mexico Region spent \$886.9 million on trip-related expenses with the greatest of these expenses related to the private boat sector (\$501 million).

### Participation

Approximately 2.9 million recreational anglers fished in the Gulf of Mexico Region in 2014, a 13 percent decrease from 2005 (3.3 million anglers). These anglers were Gulf of Mexico Region residents from either a coastal county (2.6 million anglers) or non-coastal county (273,000 anglers). Residents of a coastal county in the Gulf Region made up 91 percent of total anglers in 2014. Participation by coastal county anglers in 2014 decreased 17 percent compared with 2005 (3.1 million anglers) and decreased 12 percent from 2013 to 2014. Participation by non-coastal county anglers in 2014 increased 44 percent compared with 2005 (190,000 anglers) and decreased 32 percent compared with 2013 (400,000 anglers).

### Fishing Trips

Recreational fishermen took 21 million fishing trips in the Gulf of Mexico Region in 2014, a 10 percent decrease from 2005 and a 17 percent decrease from 2013. Approximately 55 percent of the saltwater trips occurred in the private boat sector. The second most popular fishing mode was shore fishing which made up

41 percent of trips in 2014.

### Harvest and Release

Species and species groups caught most frequently in 2014 were drum (spotted seatrout, 15 million fish); red drum (5.6 million fish); and drum (Atlantic croaker, 4.9 million fish). From 2005 to 2014, six of the Gulf Region’s key species or species groups showed decreases in catch totals, with the largest decreases occurring among drum (spotted seatrout, -53%); drum (gulf and southern kingfish, -52%); and red drum (-37%). Large increases in the number of fish caught from 2005 to 2014 were observed in striped mullet (113%), Spanish mackerel (75%) and drum (Atlantic croaker, 33%).

#### Recreational Fishing Facts

##### Participation

- An average of 3.2 million anglers fished in the Gulf of Mexico Region annually from 2005 to 2014.
- Coastal county residents made up 91 percent of total anglers in this region from 2005 to 2014.

##### Fishing trips

- In the Gulf of Mexico Region, an average of 23.1 million fishing trips were taken annually from 2005 to 2014.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 13.4 million and 8.9 million fishing trips, respectively, from 2005 to 2014.

##### Harvest and release

- Spotted seatrout was the most commonly caught key species or species group, averaging 30.4 million fish during the 10-year period. Of these, approximately 59 percent were released rather than harvested.

### MARINE ECONOMY

Note that when discussing the marine economy in the Gulf of Mexico Region<sup>4,5</sup>, all statistics include the entire state of Florida, not just West Florida. Across all economic sectors in Alabama, Louisiana, Mississippi, Texas and Florida approximately 21 million full- and part-time jobs were filled by approximately 1.3 million establishments in 2013. Annual payroll totaled \$929 billion. Total employee compensation in the Gulf of Mexico Region totaled \$1.4 trillion and the combined gross state product of all

<sup>4</sup> Marine Economy information was not available for West Florida, information for the entire state of Florida is provided here.

<sup>5</sup> Unless otherwise stated, data was accessed from the U.S. Census Bureau on September 15, 2014 at <http://censtats.census.gov/>

<sup>6</sup> U.S. Bureau of Economic Analysis, "Table 1.1.5 Gross Domestic Product" and "Table SA6N Compensation of Employees by NAICS Industry," [http://www.bea.gov/itable/index\\_nipa.cfm](http://www.bea.gov/itable/index_nipa.cfm) (accessed September 15, 2014).

states totaled approximately \$2.9 trillion.<sup>6</sup>

The Commercial Fishing Location Quotient (CFLQ) measures the size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.<sup>7</sup> The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector compared with the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

In 2013, CFLQ for Louisiana was the highest in the region at 1.93. Louisiana's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 1.93 times higher than the level of employment in these industries nationwide. The 2013 CFLQ in Mississippi was second highest in the region at 1.18.

### Seafood Sales and Processing

From 2005 to 2013, the number of non-employer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging increased 45 percent to 580 firms in 2013, relative to 2005. Most of these non-employer firms were located in Florida (300). Annual receipts for the region increased 54 percent to approximately \$37 million in 2013 (an 18% increase in real terms). During the same period, employer establishments engaged in seafood product preparation and packaging decreased 13 percent to 132 firms. Most employer firms in this sector were located in Louisiana (36). The number of employees decreased 34 percent to 6,637. Annual payroll decreased 4 percent to approximately \$209 million in 2013 (a 26% decrease in real terms).

From 2005 to 2013, employer establishments in the wholesale seafood sales sector decreased 17 percent from 2005 to 2013, to 447. Most wholesaling establishments were located in Florida (234). The number of employees decreased 20 percent to 3,734. Annual payroll

increased 20 percent to approximately \$141 million in 2013 (an 8% decrease in real terms).

From 2005 to 2013, the number of non-employer firms in the retail seafood sector increased 24 percent to 804 firms. Most of these non-employer firms were located in Florida (338). Annual receipts increased 6 percent to approximately \$67 million in 2013 (a 19% decrease in real terms). During the same period, employer establishments engaged in seafood retail decreased 9 percent to 360 firms. Most employer firms in this sector were located in Florida (165). The number of employees increased 4 percent to 2,102. Annual payroll increased 38 percent to approximately \$45 million in 2013 (a 6% increase in real terms).

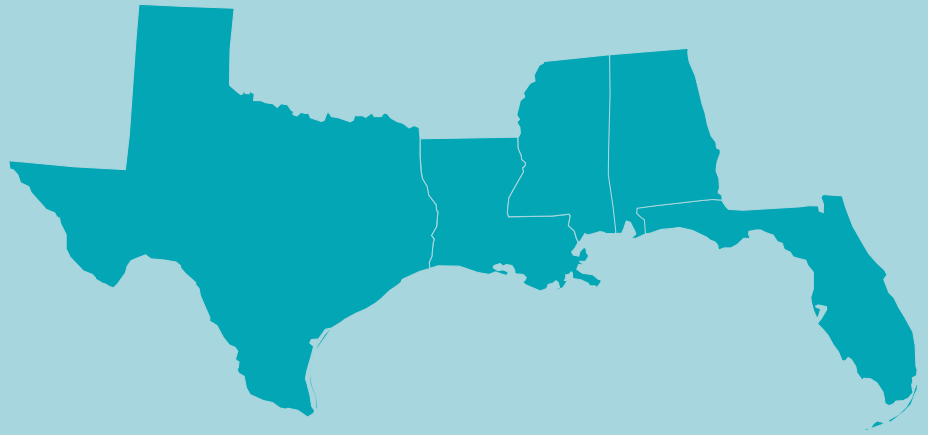
### Transport, Support and Marine Operations

The size of the Transport, Support and Marine Operations sectors in the Gulf of Mexico Region is difficult to assess because much of the state-level data is suppressed for confidentiality purposes. It is clear, however, that these sectors play an important role in the regional economy. For example, in 2013 679 establishments were classified as marinas, employing 7,070 workers and spending \$204 million on payroll across all five states in the region. Four of the five states had significant activity in the Ship and Boat Building sector, which included 513 establishments, 27,860 workers and \$1.4 billion in payroll across Alabama, Louisiana, Texas and Florida. The Marine Cargo Handling sector had a substantial presence in the same four states and consisted of 167 establishments employing 16,036 workers. This sector contributed \$670 million in payroll, mainly in Texas, Florida and Louisiana. In addition, the Coastal Freight Transportation sector in Louisiana, Texas, Florida and Mississippi accounted for 202 establishments, 8,850 workers and \$766 million in payroll, with the majority of activity in Louisiana and, to a lesser extent, Texas.

<sup>7</sup> U.S. Bureau of Labor Statistics, "Location Quotient Calculator," [http://data.bls.gov/location\\_quotient/](http://data.bls.gov/location_quotient/) (accessed September 15, 2014).



# Tables | Gulf of Mexico Region



## Gulf of Mexico Region | Commercial Fisheries

### 2014 Economic Impacts of the Gulf of Mexico Seafood Industry (thousands of dollars)

	Landings Revenue	With Imports				Without Imports			
		#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Alabama	68,793	15,069	660,627	251,520	333,185	14,329	573,214	229,907	300,165
Florida	203,372	92,858	18,317,052	3,434,238	6,135,060	12,241	1,059,989	279,380	429,336
Louisiana	451,371	44,066	2,220,879	816,203	1,115,858	42,901	2,042,092	778,941	1,053,888
Mississippi	25,995	4,714	198,608	79,501	102,731	4,704	197,129	79,189	102,217
Texas	278,353	33,880	2,857,586	826,213	1,238,477	26,496	1,568,259	567,146	796,557

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	625,038	691,220	690,211	663,848	636,427	624,629	811,905	745,822	943,640	1,027,885
Finfish & Other	122,642	135,982	145,584	146,341	142,028	117,363	184,536	184,067	205,184	184,448
Shellfish	502,396	555,238	544,626	517,507	494,400	507,265	627,368	561,755	738,457	843,437
<b>Key Species</b>										
Blue crab	37,961	43,355	46,028	39,813	45,484	41,264	48,794	47,984	61,802	73,426
Crawfish	8,360	1,290	9,034	9,507	15,547	13,971	9,914	4,998	16,490	13,430
Groupers	24,692	22,795	20,242	22,927	17,292	13,580	19,679	23,415	23,396	28,830
Menhaden	32,938	44,946	62,110	64,376	60,606	51,750	92,855	83,450	95,331	70,917
Mulletts	6,593	9,429	5,543	6,099	6,105	5,221	10,368	7,557	13,222	10,292
Oysters	56,510	62,316	69,542	60,464	73,464	55,085	65,273	71,688	76,413	86,751
Red snapper	11,336	13,167	9,570	7,972	7,984	10,202	11,413	13,565	20,621	23,088
Shrimp	360,513	397,706	367,060	366,808	327,608	339,228	441,384	390,464	510,486	587,986
Stone crab	21,223	24,115	26,242	19,040	17,910	23,384	24,521	24,039	24,763	27,135
Tunas	9,431	8,461	10,535	6,170	8,180	2,688	5,516	10,516	7,308	6,330

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	1,198,203	1,362,326	1,404,307	1,278,879	1,435,665	1,072,068	1,792,550	1,438,492	1,395,521	1,143,715
Finfish & Other	887,920	974,969	1,071,322	994,374	1,071,708	810,649	1,472,798	1,150,289	1,093,569	840,674
Shellfish	310,283	387,357	332,985	284,505	363,957	261,419	319,752	288,203	301,952	303,041
<b>Key Species</b>										
Blue crab	50,041	67,481	57,964	49,258	61,277	41,240	55,606	50,409	46,940	47,765
Crawfish	15,177	1,469	15,848	15,735	19,312	14,557	9,599	4,216	19,676	11,230
Groupers	10,776	9,092	7,308	8,560	6,633	4,870	6,987	7,973	7,280	8,547
Menhaden	815,495	901,398	1,005,325	927,517	1,002,579	753,442	1,398,654	1,078,139	1,021,526	769,943
Mulletts	9,023	12,727	8,933	10,609	11,303	8,963	14,233	10,772	13,482	13,604
Oysters	20,174	19,674	22,518	20,723	22,829	15,824	18,742	19,948	19,249	16,525
Red snapper	4,109	4,637	2,998	2,370	2,503	3,259	3,567	3,994	5,306	5,722
Shrimp	216,291	288,973	225,163	188,806	250,572	178,902	221,469	203,328	205,993	206,774
Stone crab	4,534	4,806	5,893	6,169	5,407	5,112	5,482	5,226	3,778	1,890
Tunas	3,050	2,851	3,426	1,786	2,836	1,322	1,588	3,031	2,094	1,757

### Average Annual Price of Key Species/Species Groups (dollars per pound)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	0.76	0.64	0.79	0.81	0.74	1.00	0.88	0.95	1.32	1.54
Crawfish	0.55	0.88	0.57	0.60	0.81	0.96	1.03	1.19	0.84	1.20
Groupers	2.29	2.51	2.77	2.68	2.61	2.79	2.82	2.94	3.21	3.37
Menhaden	0.04	0.05	0.06	0.07	0.06	0.07	0.07	0.08	0.09	0.09
Mulletts	0.73	0.74	0.62	0.57	0.54	0.58	0.73	0.70	0.98	0.76
Oysters	2.80	3.17	3.09	2.92	3.22	3.48	3.48	3.59	3.97	5.25
Red snapper	2.76	2.84	3.19	3.36	3.19	3.13	3.20	3.40	3.89	4.04
Shrimp	1.67	1.38	1.63	1.94	1.31	1.90	1.99	1.92	2.48	2.84
Stone crab	4.68	5.02	4.45	3.09	3.31	4.57	4.47	4.60	6.55	14.35
Tunas	3.09	2.97	3.07	3.45	2.88	2.03	3.47	3.47	3.49	3.60

**2014 Economic Impacts of the Gulf of Mexico Recreational Fishing Expenditures (thousands of dollars, trips)**

	Trips	#Jobs	Sales	Income	Value Added
Alabama	2,169	14,124	1,070,579	540,257	827,849
West Florida	15,179	70,109	7,467,774	3,161,122	4,868,743
Louisiana	2,188	15,241	1,619,677	662,470	1,029,281
Mississippi	1,480	4,174	374,063	157,772	247,281
Texas	NA <sup>1</sup>	16,496	1,825,290	757,027	1,205,146

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
			Fishing Tackle	2,160,705
For-Hire	287,092	104,377	Other Equipment	941,315
Private Boat	144,610	501,020	Boat Expenses	5,753,157
Shore	213,957	281,503	Vehicle Expenses	1,020,298
Total	645,660	886,899	Second Home Expenses	137,662
			Total Durable Expenditures	10,013,137
Total State Trip and Durable Goods Expenditures				11,545,696

**Recreational Anglers by Residential Area (thousands of anglers)<sup>1,2</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	3,133	3,328	3,236	2,926	2,550	2,479	2,737	2,802	2,972	2,616
Non-Coastal	190	315	327	262	295	236	311	268	400	273
Out-of-State <sup>3</sup>	--	--	--	--	--	--	--	--	--	--
Total Anglers	3,323	3,643	3,563	3,188	2,845	2,715	3,048	3,070	3,372	2,889

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	692	837	852	819	823	581	735	884	907	927
Private	13,586	13,620	14,980	15,195	13,443	12,684	12,911	12,782	13,510	11,508
Shore	9,014	8,837	8,458	8,776	8,333	7,783	8,930	9,506	10,817	8,581
Total Trips	23,292	23,294	24,290	24,790	22,599	21,048	22,576	23,172	25,234	21,016

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>4</sup>**

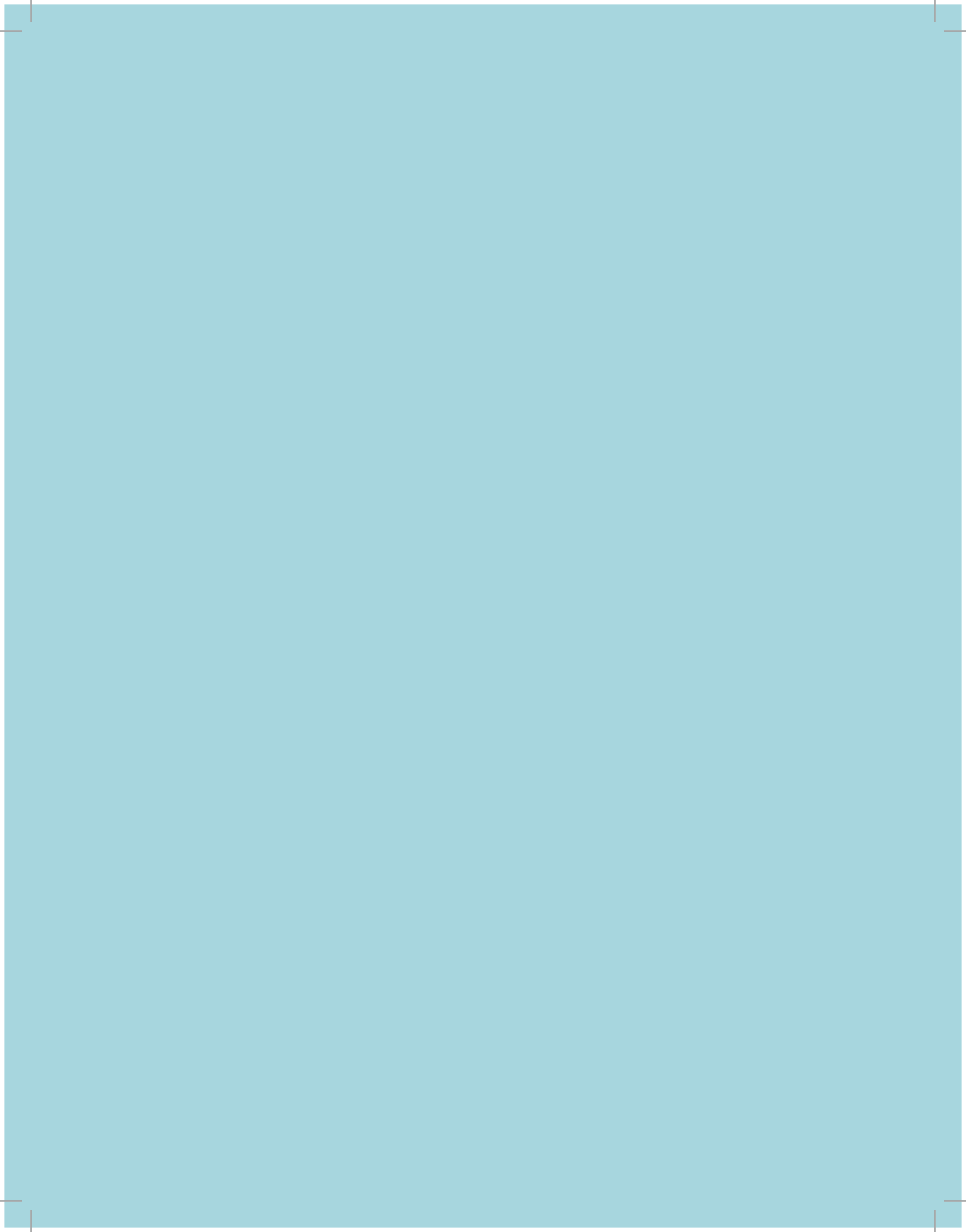
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Drum (Atlantic croaker)	H	867	1541	1408	1935	1290	1635	2209	1462	1883	2682
	R	2,844	2,314	2,616	3,149	3,858	3,827	5,899	3,922	3,268	2,240
Drum (Gulf and southern kingfish)	H	1,426	1,250	1,137	1,307	1,066	1,420	941	918	1,623	705
	R	781	926	843	729	576	625	539	535	474	356
Drum (sand and silver seatrouts)	H	2,159	2,239	3,185	3,556	4,314	4,700	5,962	5,055	3,013	2,500
	R	724	1,538	1,910	1,989	2,444	1,807	2,541	2,474	1,851	481
Drum (spotted seatrout)	H	10,882	14,272	12,103	15,042	14,146	10,870	14,719	13,593	12,761	5,703
	R	20,214	20,055	18,849	21,017	17,365	14,564	19,120	20,217	19,528	8,931
Porgies (sheepshead)	H	2,081	1,185	1,245	1,613	1,607	1,195	2,274	1,596	1,355	1,381
	R	2,394	1,507	1,223	1,486	1,338	1,739	1,634	1,516	1,672	1,579
Red drum	H	2,548	2,681	3,136	3,560	2,893	3,516	3,889	3,012	4,138	2,096
	R	6,233	6,392	6,222	7,016	5,525	6,468	6,448	6,330	7,699	3,479
Red snapper	H	884	1035	1270	720	828	368	557	626	1291	500
	R	2,194	2,831	3,259	2,112	2,145	1,436	1,521	1,424	2,824	1,785
Southern flounder	H	623	538	701	538	691	801	857	836	1103	491
	R	195	171	239	121	193	220	222	309	339	72
Spanish mackerel	H	1,192	1,759	1,330	1,895	1,504	1,564	1,534	1,834	3,352	1,718
	R	1,374	2,855	2,104	2,040	1,634	2,477	1,941	1,441	4,158	2,779
Striped mullet	H	1,081	1,103	1,150	1,258	743	1,666	1,900	2,356	2,984	2,365
	R	165	141	158	146	226	127	313	204	194	293

<sup>1</sup> NA = The Marine Recreational Program (MRIP) does not collect effort data for Texas.

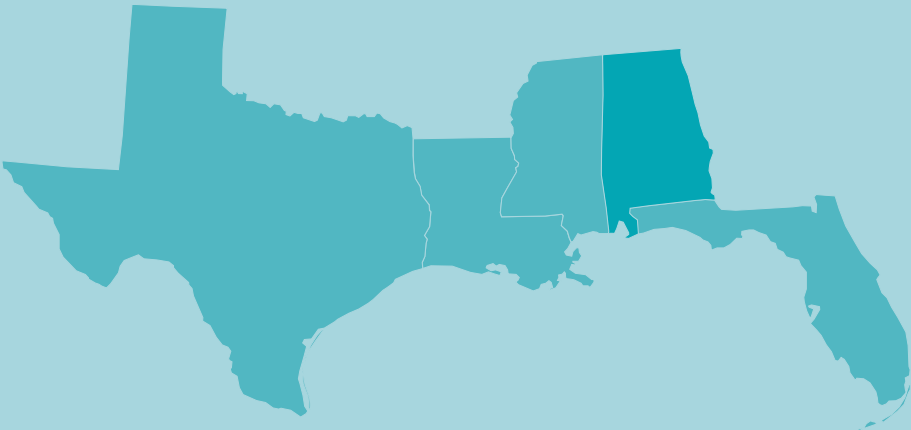
<sup>2</sup> Includes Louisiana resident participation estimated from historical MRIP data and a state creel survey.

<sup>3</sup> Data are not available because out-of-state resident information is collected for individual states but whether an angler is a resident of a region is not specified.

<sup>4</sup> Data on the number of fish released in Texas are not collected by the Texas Parks and Wildlife Department (TPWD) and therefore not reported in this table.



# Tables | Alabama





**2014 Economic Impacts of the Alabama Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	15,069	660,627	251,520	333,185	14,329	573,214	229,907	300,165
Commercial Harvesters	2,363	113,695	33,648	50,164	2,363	113,695	33,648	50,164
Seafood Processors & Dealers	2,802	176,209	69,022	87,712	2,312	145,443	56,971	72,397
Importers	199	54,840	8,789	16,718	-	-	-	-
Seafood Wholesalers & Distributors	219	10,250	3,593	4,628	211	9,889	3,467	4,466
Retail	9,486	305,632	136,468	173,963	9,442	304,187	135,821	173,138

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	39,726	48,558	48,845	44,503	39,624	26,335	50,910	46,495	55,532	68,793
Finfish & Other	3,982	4,572	3,686	4,358	3,662	2,748	4,072	5,183	4,680	4,572
Shellfish	35,744	43,986	45,160	40,145	35,962	23,587	46,838	41,312	50,853	64,221
<b>Key Species</b>										
Blue crab	663	1,319	1,711	1,533	961	732	1,128	1,044	1,036	1,319
Flounders	247	223	261	214	197	97	222	185	58	53
Menhaden	63	48	71	59	42	15	58	84	104	147
Mulletts	1,117	1,171	984	1,030	765	594	687	1,206	1,178	1,046
Oysters	3,020	3,639	2,698	243	77	390	1,322	1,253	786	441
Red snapper	638	536	213	239	263	329	314	316	401	697
Sharks	478	463	250	403	275	111	381	330	247	219
Shrimp	32,002	39,022	40,742	38,355	34,894	22,463	44,361	39,009	49,021	62,445
Spanish mackerel	401	573	453	664	301	499	582	1,149	940	472
Vermillion snapper	149	318	323	507	841	384	622	393	88	387

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	23,985	34,033	29,434	24,612	29,199	14,063	26,119	26,322	23,085	25,268
Finfish & Other	5,552	6,498	4,857	5,577	4,478	3,441	4,966	6,596	5,831	5,276
Shellfish	18,432	27,535	24,578	19,035	24,721	10,622	21,153	19,726	17,254	19,992
<b>Key Species</b>										
Blue crab	1,024	2,384	2,557	1,799	1,458	927	1,617	1,325	1,025	1,184
Flounders	130	118	133	107	97	48	111	83	25	23
Menhaden	521	350	470	268	190	81	364	521	496	700
Mulletts	1,976	1,913	1,798	2,017	1,814	1,202	1,262	1,946	1,793	1,829
Oysters	1,041	940	769	71	23	68	296	265	133	58
Red snapper	214	177	59	61	65	83	78	78	108	180
Sharks	800	1,227	315	424	328	140	450	495	343	272
Shrimp	16,260	24,201	21,247	17,154	23,215	9,625	19,224	18,124	16,082	18,735
Spanish mackerel	568	873	580	921	418	733	839	1,377	972	431
Vermillion snapper	66	122	129	199	346	148	224	133	28	124

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	0.65	0.55	0.67	0.85	0.66	0.79	0.70	0.79	1.01	1.11
Flounders	1.91	1.89	1.97	2.01	2.04	2.05	2.00	2.21	2.35	2.24
Menhaden	0.12	0.14	0.15	0.22	0.22	0.18	0.16	0.16	0.21	0.21
Mulletts	0.57	0.61	0.55	0.51	0.42	0.49	0.54	0.62	0.66	0.57
Oysters	2.90	3.87	3.51	3.41	3.33	5.75	4.47	4.72	5.90	7.62
Red snapper	2.98	3.03	3.62	3.93	4.04	3.97	4.04	4.05	3.70	3.86
Sharks	0.60	0.38	0.79	0.95	0.84	0.79	0.85	0.67	0.72	0.81
Shrimp	1.97	1.61	1.92	2.24	1.50	2.33	2.31	2.15	3.05	3.33
Spanish mackerel	0.71	0.66	0.78	0.72	0.72	0.68	0.69	0.83	0.97	1.09
Vermillion snapper	2.26	2.61	2.50	2.55	2.43	2.59	2.78	2.97	3.12	3.11

**2014 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	570	49,799	19,498	26,942
	Private Boat	398	34,902	12,167	20,128
	Shore	1,046	88,048	30,424	49,852
Total Durable Expenditures		12,110	897,830	478,168	730,927
Total State Economic Impacts		14,124	1,070,579	540,257	827,849

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
			Fishing Tackle	272,096
For-Hire	26,481	6,455	Other Equipment	86,600
Private Boat	7,904	26,859	Boat Expenses	864,053
Shore	40,222	33,090	Vehicle Expenses	36,281
Total	74,607	66,404	Second Home Expenses	24,247
			Total Durable Expenditures	1,283,277
Total State Trip and Durable Goods Expenditures				1,424,288

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	231	233	253	192	205	195	295	254	279	220
Non-Coastal	93	184	169	116	151	140	177	131	224	123
Out-of-State	161	320	291	237	209	220	435	339	549	510
Total Anglers	485	737	713	545	565	555	907	724	1,052	853

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	56	78	75	56	56	34	75	59	90	87
Private	828	811	985	946	885	840	1,206	1,035	1,006	714
Shore	721	1,050	901	702	772	812	1,202	1,211	1,767	1,368
Total Trips	1,605	1,939	1,961	1,704	1,713	1,686	2,483	2,305	2,863	2,169

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Bluefish	H	15	13	26	16	14	30	74	55	163	37
	R	77	150	175	54	46	80	166	197	639	518
Drum (Atlantic croaker)	H	233	452	463	1,163	250	918	886	345	391	1,106
	R	1,593	824	924	1,370	1,822	1,861	2,593	1,206	886	1,393
Drum (kingfishes) <sup>1</sup>	H	263	444	477	668	593	633	626	226	929	321
	R	266	460	291	257	284	310	342	97	260	156
Drum (sand seatrout)	H	349	593	704	1,216	1,428	2,069	2,346	1,415	485	524
	R	289	502	481	409	753	835	743	479	294	246
Drum (spotted seatrout)	H	295	327	358	269	318	610	825	773	539	242
	R	323	598	487	844	758	454	1,302	1,126	761	253
Porgies (sheepshead)	H	279	123	321	289	165	218	480	313	285	121
	R	86	80	30	158	48	51	146	48	46	17
Red drum	H	154	100	84	88	62	123	143	124	188	90
	R	184	144	136	227	111	152	150	306	425	317
Red snapper	H	232	181	217	107	138	42	217	152	451	133
	R	494	639	852	340	394	287	488	193	857	757
Southern flounder	H	151	123	96	93	139	243	163	155	84	29
	R	83	65	38	37	22	65	60	53	43	18
Spanish mackerel	H	45	58	91	111	76	254	335	515	1,313	128
	R	52	49	21	32	59	102	128	148	1,130	53

<sup>1</sup> Kingfishes include southern kingfish and Gulf kingfish.

## Alabama | Marine Economy

### Alabama's State Economy (% of national total)

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	101,976 (1.4%)	1,667,526 (1.4%)	53.37 (1.2%)	86.75 (1.2%)	157.91 (1.2%)	0.29
2013	97,578 (1.3%)	1,603,100 (1.4%)	62.41 (1.1%)	102.80 (1.2%)	194.67 (1.2%)	0.57
%Change	-4.5	-4.0	14.5	15.6	18.9	-96.6

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	40	34	47	33	41	68	67	47	58
	Receipts	3,414	1,558	1,547	1,894	1,809	3,314	4,354	1,965	3,069
Seafood sales, retail	Firms	44	57	61	57	67	71	58	68	66
	Receipts	3,855	4,802	4,279	5,632	5,484	5,197	4,759	7,073	5,520

### Seafood Sales & Processing - Employer Establishments ( thousands of dollars)<sup>2</sup>

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	26	24	23	23	22	21	16	17	22
	Employees	1,925	1,629	1,510	1,450	1,086	1,128	882	778	989
	Payroll	38,229	34,703	32,774	29,277	24,900	22,824	21,922	19,730	22,641
Seafood sales, wholesale	Establishments	26	26	31	29	28	23	25	16	18
	Employees	607	395	395	494	339	332	321	306	281
	Payroll	6,345	6,195	6,202	8,751	5,893	5,119	6,547	6,221	6,861
Seafood sales, retail	Establishments	34	28	33	33	31	34	32	32	28
	Employees	95	0	0	0	130	132	120	189	219
	Payroll	1,399	0	1,809	1,710	2,044	2,016	1,888	2,990	3,267

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>

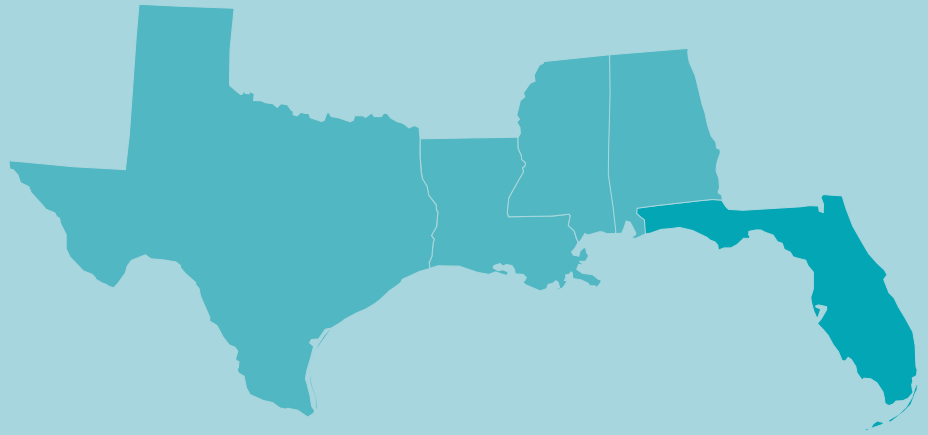
		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	10	6	8	4	4	5	5	4	5
	Employees	ds	15	48	ds	ds	ds	215	ds	ds
	Payroll	ds	754	3,266	ds	ds	ds	13,117	ds	ds
Deep sea freight transportation	Establishments	3	3	5	7	7	5	6	5	5
	Employees	ds	ds	46	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	3,553	ds	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	1	1	1	2	3	2	2	1	0
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	NA
Marinas	Establishments	58	52	52	56	55	54	53	57	54
	Employees	347	312	364	316	278	609	ds	329	332
	Payroll	8,047	8,388	9,382	9,170	8,418	12,149	12,196	10,253	9,659
Marine cargo handling	Establishments	17	14	19	20	19	19	19	10	13
	Employees	672	ds	491	756	658	548	536	ds	554
	Payroll	28,458	ds	21,076	33,244	27,272	32,143	34,998	ds	34,481
Navigational services to shipping	Establishments	17	18	16	17	16	16	16	14	12
	Employees	ds	ds	338	287	294	276	283	241	208
	Payroll	ds	ds	17,554	16,712	15,383	14,737	14,981	8,808	14,761
Port & harbor operations	Establishments	3	3	2	4	5	5	3	6	3
	Employees	ds	ds	ds	ds	ds	ds	ds	101	4
	Payroll	ds	ds	ds	ds	ds	ds	ds	5,788	160
Ship & boat building	Establishments	45	47	42	42	40	32	35	37	38
	Employees	2,591	3,027	3,570	4,435	3,913	2,598	3,176	4,936	5,948
	Payroll	86,453	121,185	172,380	188,543	159,065	151,813	166,116	251,063	303,016

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not available.

# Tables | West Florida



## West Florida | Commercial Fisheries

### 2014 Economic Impacts of the Florida<sup>1</sup> Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	92,858	18,317,052	3,434,238	6,135,060	12,241	1,059,989	279,380	429,336
Commercial Harvesters	7,921	510,330	160,460	213,356	7,921	510,330	160,460	213,356
Seafood Processors & Dealers	5,381	863,388	167,091	328,486	640	110,089	21,306	41,885
Importers	48,133	13,240,472	2,122,038	4,036,275	-	-	-	-
Seafood Wholesalers & Distributors	11,710	1,333,732	523,618	651,451	533	60,718	23,837	29,657
Retail	19,712	2,369,130	461,031	905,493	3,146	378,853	73,777	144,438

### Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>2</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	137,912	145,494	132,162	123,850	117,324	139,046	166,015	143,188	181,507	203,372
Finfish & Other	50,600	50,358	45,890	50,926	49,582	40,865	59,410	60,406	67,612	69,919
Shellfish	87,312	95,136	86,272	72,924	67,743	98,181	106,605	82,783	113,895	133,452
<b>Key Species</b>										
Blue crab	7,035	7,043	5,769	3,289	4,195	6,706	7,719	5,142	6,454	6,977
Gag	7,084	4,151	4,348	4,913	2,759	2,079	1,439	2,437	2,799	2,852
Lobsters	15,077	24,885	24,546	19,175	12,206	32,752	35,616	21,136	46,749	50,537
Mulletts	4,355	6,021	3,663	4,172	5,069	4,188	8,630	5,050	11,081	8,072
Oyster	2,854	5,415	6,631	5,519	6,968	6,298	8,582	9,706	5,783	4,038
Quahog clam	1,736	807	914	1,825	1,524	1,002	921	753	921	NA
Red grouper	13,376	14,384	11,024	13,591	10,488	8,992	15,087	16,737	16,219	20,944
Red snapper	1,671	1,991	3,066	2,951	2,980	4,552	5,417	6,141	8,073	8,067
Shrimp	38,625	32,225	20,976	23,265	24,446	27,554	28,456	21,463	28,498	40,714
Stone crab	21,074	24,029	26,213	19,019	17,806	23,335	24,430	23,934	24,710	27,132

### Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>2</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	73,038	70,766	59,784	60,380	66,387	63,678	78,459	63,347	62,960	76,126
Finfish & Other	36,543	35,887	30,645	35,302	38,792	32,023	42,288	37,993	37,759	39,076
Shellfish	36,496	34,879	29,139	25,078	27,595	31,656	36,171	25,355	25,200	37,050
<b>Key Species</b>										
Blue crab	7,370	8,610	6,110	2,660	3,371	5,759	6,833	4,157	4,463	4,187
Gag	2,688	1,436	1,339	1,478	825	572	369	612	676	681
Lobsters	3,059	4,372	3,405	2,981	3,961	5,287	5,303	3,635	5,601	4,795
Mulletts	5,635	7,308	5,619	6,980	9,167	7,262	11,410	7,249	10,879	10,495
Oyster	1,417	2,394	2,959	2,526	2,877	2,165	3,100	3,316	1,298	731
Quahog clam	212	96	116	279	255	156	137	128	183	NA
Red grouper	6,386	6,062	4,352	5,628	4,387	3,488	5,635	6,141	5,412	6,545
Red snapper	584	649	919	849	863	1,317	1,538	1,698	2,181	2,094
Shrimp	19,297	14,176	8,628	9,942	11,451	12,892	11,975	7,658	9,405	11,448
Stone crab	4,502	4,784	5,884	6,163	5,382	5,100	5,460	5,202	3,767	1,889

### Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>2</sup>

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	0.95	0.82	0.94	1.24	1.24	1.16	1.13	1.24	1.45	1.67
Gag	2.64	2.89	3.25	3.32	3.34	3.63	3.90	3.98	4.14	4.19
Lobsters	4.93	5.69	7.21	6.43	3.08	6.19	6.72	5.81	8.35	10.54
Mulletts	0.77	0.82	0.65	0.60	0.55	0.58	0.76	0.70	1.02	0.77
Oyster	2.02	2.26	2.24	2.19	2.42	2.91	2.77	2.93	4.46	5.52
Quahog clam	8.17	8.44	7.90	6.53	5.97	6.43	6.74	5.86	5.03	NA
Red grouper	2.09	2.37	2.53	2.41	2.39	2.58	2.68	2.73	3.00	3.20
Red snapper	2.86	3.07	3.34	3.47	3.45	3.46	3.52	3.62	3.70	3.85
Shrimp	2.00	2.27	2.43	2.34	2.13	2.14	2.38	2.80	3.03	3.56
Stone crab	4.68	5.02	4.45	3.09	3.31	4.58	4.47	4.60	6.56	14.36

<sup>1</sup> Information reported in this table is for the entire state of Florida, not just West Florida.

<sup>2</sup> NA = These data are confidential and therefore not disclosable.



**2014 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	4,409	471,415	199,485	286,678
	Private Boat	3,878	406,135	155,527	257,061
	Shore	2,903	286,396	108,612	178,817
Total Durable Expenditures		58,919	6,303,828	2,697,498	4,146,187
Total State Economic Impacts		70,109	7,467,774	3,161,122	4,868,743

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	227,247	31,488	Fishing Tackle	1,317,124
Private Boat	121,376	218,202	Other Equipment	548,979
Shore	152,225	54,261	Boat Expenses	3,138,979
Total	500,848	303,951	Vehicle Expenses	318,188
			Second Home Expenses	57,872
			Total Durable Expenditures	5,381,143
Total State Trip and Durable Goods Expenditures				6,185,942

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	2,088	2,084	1,934	1,820	1,551	1,538	1,592	1,718	1,813	1,649
Non-Coastal <sup>1</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	2,008	1,988	2,151	2,029	1,671	1,470	1,624	2,141	2,538	2,716
Total Anglers	4,096	4,072	4,085	3,849	3,222	3,008	3,216	3,859	4,351	4,365

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	505	565	612	571	573	461	536	699	684	694
Private	9,491	9,382	10,005	10,145	8,623	8,160	7,520	7,865	8,328	8,115
Shore	6,699	6,721	6,319	6,782	6,482	5,645	5,845	6,216	6,937	6,370
Total Trips	16,695	16,668	16,936	17,498	15,678	14,266	13,901	14,780	15,949	15,179

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Common snook	H	62	25	35	25	14	0	1	0	33	13
	R	2,281	1,391	1,591	1,596	1,925	600	747	1,040	1,547	1,578
Drum (sand and silver seatrouts)	H	487	434	1,119	746	892	409	865	1,415	705	578
	R	64	409	599	583	459	211	295	742	240	122
Drum (spotted seatrout)	H	1,980	1,616	1,514	1,543	1,370	1,115	1,475	1,626	1,406	1,340
	R	11,749	9,456	10,059	9,584	7,672	8,470	11,382	10,921	7,760	7,935
Gag	H	491	356	286	434	203	232	98	132	213	105
	R	2,314	1,875	2,676	4,076	2,724	2,017	1,158	980	1,170	817
Gray snapper	H	932	663	1,046	1,394	1,176	560	419	949	1,482	1,933
	R	4,700	2,848	4,289	5,690	3,014	1,858	2,239	3,125	5,136	7,519
King mackerel	H	178	343	271	184	453	172	128	180	205	306
	R	133	392	84	155	138	81	46	62	88	118
Mullet <sup>3</sup>	H	988	1,297	613	1,237	656	967	855	1,550	1,640	1,480
	R	208	100	183	143	191	73	106	88	224	319
Porgies (sheepshead)	H	1,050	623	591	556	682	455	608	628	524	895
	R	1,856	942	894	855	808	1,245	1,276	1,177	1,084	1,535
Red drum	H	501	377	412	457	225	240	286	414	364	388
	R	3,254	2,828	2,558	2,562	1,440	1,992	2,894	2,300	2,196	2,647
Spanish mackerel	H	1,100	1,672	1,205	1,753	1,392	1,284	1,154	1,215	1,970	1,565
	R	1,279	2,767	2,064	1,988	1,545	2,360	1,780	1,219	3,017	2,724

<sup>1</sup> Data is not available because all West Florida residents are considered coastal county residents.  
<sup>2</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.  
<sup>3</sup> Mullet<sup>3</sup> encompass species within the mullet genus, including striped mullets.

## West Florida | Marine Economy

### West Florida's State Economy (% of national total)<sup>1</sup>

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>2</sup>
2005	504,662 (6.7%)	7,107,378 (6.1%)	239.20 (5.3%)	382.54 (5.4%)	700.22 (5.4%)	1.00
2013	510,389 (6.8%)	7,134,644 (6%)	294.14 (5.2%)	440.33 (5%)	800.70 (4.8%)	1.04
% Change	1.1	0.4	18.7	13.1	12.5	4.0

### Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	164	174	173	202	217	280	294	307	300
	Receipts	8,756	10,184	10,497	11,065	12,473	14,635	14,618	17,557	17,214
Seafood sales, retail	Firms	247	251	319	331	316	361	362	383	338
	Receipts	22,787	20,708	27,557	26,087	25,667	27,964	29,037	30,765	25,332

### Seafood Sales & Processing - Employer Establishments (thousands of dollars)

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	25	22	20	23	25	27	24	27	25
	Employees	1,616	1,704	1,748	1,637	1,143	1,269	1,095	1,608	1,374
	Payroll	47,529	62,801	58,233	53,455	46,235	45,772	42,612	51,735	50,003
Seafood sales, wholesale	Establishments	258	259	267	229	215	229	250	226	234
	Employees	1,883	2,091	2,308	1,913	1,762	1,747	1,913	1,957	1,878
	Payroll	65,339	73,897	85,019	75,203	72,159	70,889	77,115	75,945	79,266
Seafood sales, retail	Establishments	176	173	169	168	158	145	145	151	165
	Employees	970	936	989	991	885	865	849	945	909
	Payroll	19,192	19,513	20,595	21,604	21,182	20,783	20,158	21,577	23,476

### Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>3</sup>

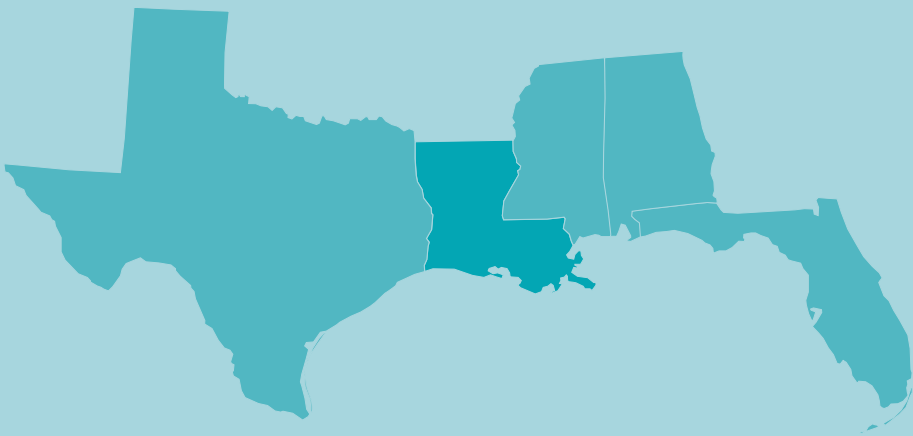
		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	59	54	47	42	42	50	54	60	47
	Employees	1,150	1,217	1,242	1,106	972	709	753	1,381	1,050
	Payroll	71,420	91,638	94,429	50,115	37,774	50,217	53,341	100,402	82,078
Deep sea freight transportation	Establishments	69	73	69	57	58	61	65	75	69
	Employees	2,622	3,729	3,190	2,486	2,801	2,279	2,374	3,345	2,485
	Payroll	207,300	226,810	208,144	169,055	180,139	159,025	177,386	231,887	140,564
Deep sea passenger transportation	Establishments	31	37	34	31	33	29	29	39	31
	Employees	8,492	9,077	ds	ds	ds	ds	ds	ds	ds
	Payroll	504,625	571,590	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	551	513	493	442	428	430	411	432	444
	Employees	5,069	5,494	4,935	5,024	4,665	4,439	4,657	4,918	5,076
	Payroll	133,384	146,390	148,592	151,677	132,955	133,017	142,997	148,573	145,265
Marine cargo handling	Establishments	63	66	53	56	59	55	64	43	58
	Employees	6,409	7,266	6,585	8,052	7,288	7,547	7,484	4,598	6,258
	Payroll	177,983	189,020	173,788	192,473	185,309	191,560	195,458	86,461	188,997
Navigational services to shipping	Establishments	148	142	145	147	145	145	150	151	180
	Employees	660	781	1,484	894	829	980	1,047	853	1,390
	Payroll	42,200	48,370	61,470	56,917	60,641	76,853	75,561	68,366	130,893
Port & harbor operations	Establishments	31	27	29	40	32	34	32	66	61
	Employees	973	584	459	712	527	470	377	2,082	555
	Payroll	22,606	19,417	12,872	24,668	19,006	20,525	16,879	72,554	25,439
Ship & boat building	Establishments	312	301	296	297	261	248	246	258	259
	Employees	12,729	12,385	12,332	12,419	8,221	7,363	7,909	8,621	8,813
	Payroll	454,209	427,888	469,382	442,096	296,537	302,909	325,942	374,831	390,853

<sup>1</sup> All data presented on this page are for the entire state of Florida, not just West Florida.

<sup>2</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>3</sup> ds = these data are suppressed.

# Tables | Louisiana



**2014 Economic Impacts of the Louisiana Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	44,066	2,220,879	816,203	1,115,858	42,901	2,042,092	778,941	1,053,888
Commercial Harvesters	16,609	854,636	275,397	412,406	16,609	854,636	275,397	412,406
Seafood Processors & Dealers	2,743	230,163	89,275	113,874	2,659	223,105	86,538	110,383
Importers	523	143,745	23,038	43,820	-	-	-	-
Seafood Wholesalers & Distributors	1,240	134,463	45,808	59,295	1,146	124,239	42,324	54,787
Retail	22,951	857,872	382,685	486,463	22,487	840,112	374,681	476,314

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	251,678	278,292	289,288	275,701	286,993	233,559	324,123	291,721	403,650	451,371
Finfish & Other	49,443	60,735	65,198	64,116	62,629	56,900	102,083	85,077	108,593	88,145
Shellfish	202,235	217,557	224,090	211,585	224,364	176,658	222,040	206,644	295,057	363,226
<b>Key Species</b>										
Blue crab	27,419	32,605	35,044	32,203	37,301	30,325	36,784	38,196	51,566	61,082
Crawfish	8,360	1,290	9,034	9,507	15,547	13,971	9,914	4,998	16,490	13,430
King mackerel	1,273	1,112	1,298	1,307	1,184	1,149	1,594	1,475	1,517	2,299
Menhaden	25,776	36,441	41,368	45,768	42,555	43,331	82,881	60,934	84,951	63,364
Mulletts	946	2,061	690	749	73	185	775	976	626	874
Oysters	33,305	35,999	40,148	39,009	50,950	24,986	41,652	37,832	44,835	61,365
Red snapper	3,568	4,472	2,529	2,038	2,185	2,311	2,261	2,434	4,824	6,400
Shrimp	133,143	147,652	139,842	130,854	120,555	107,362	133,670	125,587	182,144	227,318
Tunas	7,687	7,040	8,334	4,409	6,338	1,649	3,369	7,752	4,595	4,276
Vermillion snapper	1,137	762	991	819	806	399	517	598	474	698

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	849,280	918,675	999,343	919,017	1,007,474	793,377	1,311,040	993,744	1,044,006	778,282
Finfish & Other	681,322	714,545	814,645	759,438	806,844	665,665	1,153,912	852,093	874,106	607,087
Shellfish	167,959	204,130	184,698	159,579	200,631	127,712	157,128	141,650	169,901	171,195
<b>Key Species</b>										
Blue crab	38,100	53,394	45,107	41,714	53,057	30,752	43,893	41,291	39,192	39,589
Crawfish	15,177	1,469	15,848	15,735	19,312	14,557	9,599	4,216	19,676	11,230
King mackerel	867	971	879	789	927	691	1,002	969	788	1,112
Menhaden	657,702	689,853	789,621	738,092	785,575	648,561	1,131,287	828,612	850,318	585,047
Mulletts	1,238	3,361	1,375	1,503	189	362	1,385	1,385	609	1,136
Oysters	12,099	11,417	12,858	12,840	15,006	6,874	11,156	10,124	11,356	11,286
Red snapper	1,316	1,653	807	589	667	828	918	980	1,216	1,481
Shrimp	102,576	137,839	110,860	89,285	113,250	75,515	92,469	85,988	99,659	109,063
Tunas	2,296	2,143	2,476	1,248	2,009	490	932	2,113	1,241	1,142
Vermillion snapper	588	365	517	409	412	186	234	261	174	242

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	0.72	0.61	0.78	0.77	0.70	0.99	0.84	0.93	1.32	1.54
Crawfish	0.55	0.88	0.57	0.60	0.81	0.96	1.03	1.19	0.84	1.20
King mackerel	1.47	1.15	1.48	1.66	1.28	1.66	1.59	1.52	1.93	2.07
Menhaden	0.04	0.05	0.05	0.06	0.05	0.07	0.07	0.07	0.10	0.11
Mulletts	0.76	0.61	0.50	0.50	0.39	0.51	0.56	0.70	1.03	0.77
Oysters	2.75	3.15	3.12	3.04	3.40	3.63	3.73	3.74	3.95	5.44
Red snapper	2.71	2.71	3.13	3.46	3.28	2.79	2.46	2.48	3.97	4.32
Shrimp	1.30	1.07	1.26	1.47	1.06	1.42	1.45	1.46	1.83	2.08
Tunas	3.35	3.29	3.37	3.53	3.16	3.37	3.62	3.67	3.70	3.74
Vermillion snapper	1.93	2.09	1.92	2.00	1.95	2.15	2.21	2.30	2.73	2.89

**2014 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	633	70,164	32,540	42,749
	Private Boat	873	106,015	33,029	61,075
	Shore	265	30,922	9,487	17,410
Total Durable Expenditures		13,470	1,412,576	587,414	908,047
Total State Economic Impacts		15,241	1,619,677	662,470	1,029,281

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	27,377	13,298	Fishing Tackle	240,695
Private Boat	8,636	75,838	Other Equipment	118,752
Shore	3,855	21,785	Boat Expenses	990,445
Total	39,869	110,921	Vehicle Expenses	190,325
			Second Home Expenses	16,162
			Total Durable Expenditures	1,556,378
Total State Trip and Durable Goods Expenditures				1,707,168

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 <sup>1</sup>
Coastal	706	868	853	795	669	609	690	651	709	
Non-Coastal	68	108	124	120	108	67	86	77	109	
Out-of-State	138	198	157	170	139	120	183	165	262	
Total Anglers	912	1,174	1,134	1,085	916	796	959	893	1,080	

**Recreational Fishing Effort by Mode (thousands of angler trips)<sup>2</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	123	187	144	179	183	79	113	115	122	130
Private	2,784	2,801	3,156	3,508	3,176	3,055	3,342	2,891	3,190	2,058
Shore	1,159	775	889	933	769	729	1,122	1,131	1,349	0
Total Trips	4,066	3,763	4,189	4,620	4,128	3,863	4,577	4,137	4,661	2,188

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>3,4</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Black drum	H	309	368	386	543	519	399	468	424	455	200
	R	651	717	729	1,116	974	1,033	1,085	882	1,639	0
Drum (Atlantic croaker)	H	443	805	684	357	470	229	606	520	829	235
	R	963	1,143	1,006	1,187	1,100	1,268	2,319	1,676	1,797	0
Drum (sand seatrout)	H	974	775	889	1,085	879	1,065	1,188	895	755	358
	R	254	453	540	824	854	514	1,032	679	990	0
Drum (spotted seatrout)	H	7,435	10,872	8,930	11,705	10,558	7,857	10,441	9,608	9,004	3,115
	R	7,304	9,026	7,394	9,580	7,975	5,054	5,802	6,776	9,709	0
Drum (southern kingfish)	H	240	89	67	74	103	41	17	110	15	4
	R	187	151	28	119	59	47	25	40	65	0
Porgies (sheepshead)	H	644	325	270	705	704	430	869	397	368	250
	R	429	463	288	448	473	440	188	237	477	0
Red drum	H	1,626	1,828	2,308	2,673	2,237	2,812	3,023	2,010	3,169	1,265
	R	2,652	3,321	3,455	4,074	3,734	4,111	3,195	2,871	4,675	0
Red snapper	H	111	172	160	85	98	7	31	102	83	68
	R	339	429	285	261	195	7	109	131	223	0
Southern flounder	H	280	290	349	235	286	327	399	331	685	213
	R	76	54	67	37	50	72	61	97	134	0
Yellowfin tuna	H	10	14	8	17	3	1	13	25	11	10
	R	1	1	1	7	0	0	4	3	2	0

<sup>1</sup> Louisiana data not available for 2014.<sup>2</sup> Effort for 2014 is estimated using data from a state creel survey and does not capture shore-based effort separately from private boat effort.<sup>3</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.<sup>4</sup> Harvest and release totals for 2014 are estimated using data from a state creel survey.



**Louisiana's State Economy (% of national total)**

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	102,790 (1.4%)	1,617,507 (1.4%)	50.66 (1.1%)	84.68 (1.2%)	200.44 (1.5%)	2.28
2013	104,375 (1.4%)	1,687,956 (1.4%)	72.07 (1.3%)	112.97 (1.3%)	246.66 (1.5%)	1.93
% Change	1.5	4.2	29.7	25.0	18.7	-15.4

**Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	76	99	85	77	68	120	94	78	99
	Receipts	8,513	8,179	6,523	7,365	5,308	10,358	9,308	8,492	9,136
Seafood sales, retail	Firms	156	181	196	182	173	197	192	184	173
	Receipts	14,585	20,046	20,932	25,900	17,622	16,001	18,758	16,804	17,538

**Seafood Sales & Processing - Employer Establishments (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	50	40	41	36	38	34	33	35	36
	Employees	1,556	1,506	1,253	991	1,301	1,209	1,006	1,117	964
	Payroll	43,801	45,439	41,391	32,382	37,657	35,770	46,440	51,237	49,339
Seafood sales, wholesale	Establishments	128	112	119	98	98	97	94	103	106
	Employees	1,037	807	954	739	702	683	767	862	846
	Payroll	17,649	21,243	21,604	15,858	17,261	15,554	18,427	22,296	23,235
Seafood sales, retail	Establishments	106	101	101	107	106	101	100	97	94
	Employees	723	759	781	681	703	527	590	704	643
	Payroll	8,277	10,560	11,827	11,141	11,564	11,214	11,090	13,042	11,213

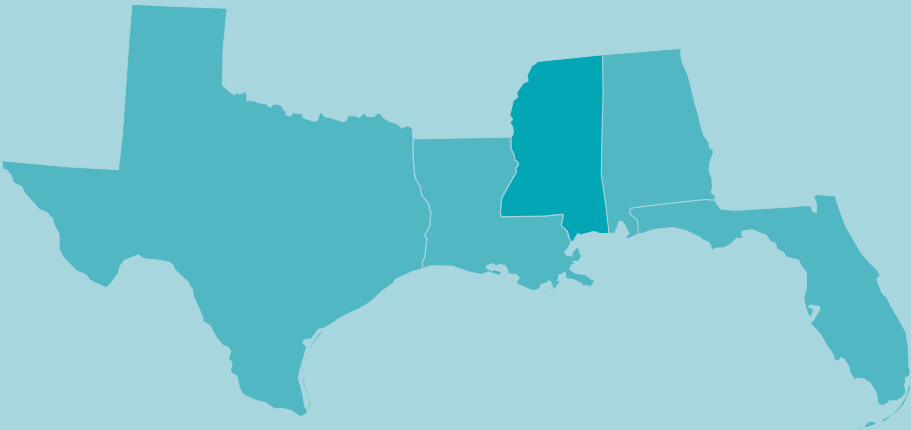
**Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	136	137	138	123	117	125	125	105	102
	Employees	5,771	6,397	7,680	6,506	6,077	5,610	5,834	6,422	5,317
	Payroll	294,941	386,136	527,290	549,388	391,914	405,796	417,362	497,165	458,589
Deep sea freight transportation	Establishments	25	24	22	18	21	16	17	18	11
	Employees	ds	595	685	1,095	1,192	93	93	ds	95
	Payroll	ds	35,269	39,843	87,479	91,760	6,147	5,608	ds	5,435
Deep sea passenger transportation	Establishments	3	2	3	2	2	1	3	2	4
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	3
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	363
Marinas	Establishments	53	41	50	43	43	43	45	44	41
	Employees	352	ds	378	274	244	314	329	257	250
	Payroll	10,213	ds	17,794	9,581	8,989	14,716	10,771	9,209	8,693
Marine cargo handling	Establishments	46	51	49	39	44	41	42	37	44
	Employees	3,263	3,100	2,978	2,010	2,193	2,511	2,526	2,016	2,834
	Payroll	110,129	118,748	128,207	85,484	92,883	105,063	108,491	93,896	174,054
Navigational services to shipping	Establishments	120	129	128	145	137	138	138	136	133
	Employees	2,136	2,204	2,508	2,884	2,893	3,176	3,396	2,545	2,533
	Payroll	96,202	115,222	141,757	183,381	175,271	224,533	208,306	162,094	169,795
Port & harbor operations	Establishments	18	18	14	22	17	21	20	46	18
	Employees	418	436	467	517	440	431	461	1,205	443
	Payroll	19,510	29,676	31,734	37,181	33,907	38,776	38,745	80,780	37,122
Ship & boat building	Establishments	111	108	112	117	109	109	109	116	110
	Employees	11,016	11,521	12,808	12,815	12,521	11,737	11,722	10,933	7,413
	Payroll	376,407	437,028	503,199	619,606	613,188	600,259	639,047	631,098	416,319

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

# Tables | Mississippi



**2014 Economic Impacts of the Mississippi Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	4,714	198,608	79,501	102,731	4,704	197,129	79,189	102,217
Commercial Harvesters	845	42,238	12,725	18,695	845	42,238	12,725	18,695
Seafood Processors & Dealers	714	53,243	21,064	26,394	713	53,137	21,022	26,341
Importers	4	1,171	188	357	-	-	-	-
Seafood Wholesalers & Distributors	58	5,307	1,873	2,359	57	5,225	1,844	2,323
Retail	3,093	96,648	43,651	54,925	3,089	96,528	43,597	54,857

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	23,386	21,586	39,340	43,696	37,956	21,895	30,291	49,335	34,953	25,995
Finfish & Other	7,804	8,959	21,359	19,233	18,667	8,963	10,527	23,172	10,938	8,102
Shellfish	15,582	12,628	17,981	24,464	19,289	12,932	19,764	26,163	24,015	17,893
<b>Key Species</b>										
Blue crab	433	928	741	447	573	366	318	724	416	997
Flounders	20	36	58	40	58	64	118	101	45	55
Menhaden	7,074	8,447	20,658	18,534	17,987	8,378	9,871	22,394	10,230	7,358
Mulletts	38	23	35	32	30	31	56	63	61	25
Oysters	1,447	NA	819	6,858	6,094	4,268	928	1,596	1,544	1,685
Red snapper	115	NA	NA	NA	158	NA	168	226	NA	307
Shrimp	13,698	11,699	16,418	17,146	12,612	8,293	18,514	23,844	22,055	15,210

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	167,610	221,720	227,834	201,822	230,255	111,229	278,075	263,641	180,595	190,548
Finfish & Other	158,721	212,213	216,375	190,191	217,461	105,274	267,407	249,382	171,000	184,393
Shellfish	8,889	9,507	11,459	11,631	12,794	5,955	10,668	14,259	9,594	6,154
<b>Key Species</b>										
Blue crab	429	1,127	737	450	545	366	370	782	359	570
Flounders	10	16	25	17	25	28	55	43	19	21
Menhaden	157,194	211,163	215,182	189,118	216,709	104,729	266,774	248,824	170,500	183,950
Mulletts	99	66	70	57	62	59	93	99	95	39
Oysters	610	NA	299	2,606	2,189	1,453	247	425	336	321
Red snapper	54	NA	NA	NA	57	NA	86	115	NA	170
Shrimp	7,848	8,380	10,421	8,570	10,054	4,135	10,048	13,051	8,899	5,263

**Average Annual Price of Key Species/Species Groups (dollars per pound)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Blue crab	1.01	0.82	1.01	0.99	1.05	1.00	0.86	0.93	1.16	1.75
Flounders	1.88	2.22	2.38	2.36	2.34	2.33	2.14	2.33	2.38	2.66
Menhaden	0.05	0.04	0.10	0.10	0.08	0.08	0.04	0.09	0.06	0.04
Mulletts	0.38	0.35	0.50	0.57	0.48	0.52	0.61	0.64	0.64	0.64
Oysters	2.37	NA	2.74	2.63	2.78	2.94	3.75	3.75	4.59	5.25
Red snapper	2.13	NA	NA	NA	2.75	NA	1.96	1.97	NA	1.81
Shrimp	1.75	1.40	1.58	2.00	1.25	2.01	1.84	1.83	2.48	2.89

<sup>1</sup> NA = these data are confidential and therefore not disclosable.

**2014 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	90	7,206	2,496	3,520
	Private Boat	204	20,395	6,665	11,397
	Shore	140	12,508	4,203	6,967
Total Durable Expenditures		3,740	333,954	144,408	225,397
Total State Economic Impacts		4,174	374,063	157,772	247,281

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	2,310	2,084	Fishing Tackle	81,725
Private Boat	1,113	21,104	Other Equipment	41,474
Shore	2,612	10,010	Boat Expenses	269,621
Total	6,034	33,197	Vehicle Expenses	79,531
			Second Home Expenses	281
			Total Durable Expenditures	472,632
Total State Trip and Durable Goods Expenditures				511,863

**Recreational Anglers by Residential Area (thousands of anglers)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coastal	108	143	196	119	125	137	160	179	171	171
Non-Coastal	29	23	34	26	36	29	48	60	67	62
Out-of-State	39	27	55	48	50	50	60	91	101	94
Total Anglers	176	193	285	193	211	216	268	330	339	327

**Recreational Fishing Effort by Mode (thousands of angler trips)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
For-Hire	8	7	21	13	11	7	11	11	11	16
Private	483	626	834	596	759	629	843	991	986	621
Shore	435	291	349	359	310	597	761	948	764	843
Total Trips	926	924	1,204	968	1,080	1,233	1,615	1,950	1,761	1,480

**Harvest (H) & Release (R) of Key Species/Species Groups (thousands of fish)<sup>1</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Drum (Atlantic croaker)	H	41	59	72	182	340	209	453	317	330	820
	R	208	190	264	388	716	422	606	695	329	376
Drum (kingfishes) <sup>2</sup>	H	225	163	161	181	126	173	177	234	519	190
	R	62	30	48	58	61	47	36	157	94	31
Drum (sand and silver seatrouts)	H	222	305	296	351	1,004	986	1,336	1,151	917	892
	R	117	173	230	166	378	246	471	574	327	113
Drum (spotted seatrout)	H	317	470	385	608	1,090	556	841	776	1,016	416
	R	838	975	909	1,009	960	586	634	1,394	1,298	743
Porgies (sheepshead)	H	27	36	17	17	22	43	260	115	94	76
	R	23	22	11	25	9	3	24	54	65	27
Red drum	H	36	58	43	76	84	77	90	141	148	106
	R	143	99	73	153	240	213	209	853	403	515
Red snapper	H	1	7	2	9	15	1	7	27	35	6
	R	51	52	9	104	55	25	0	2	95	41
Sharks <sup>3</sup>	H	9	4	4	3	21	71	35	15	89	5
	R	36	38	41	31	36	87	37	103	75	45
Southern flounder	H	72	47	121	110	209	196	182	227	215	168
	R	30	35	31	45	120	79	99	153	160	54
Striped mullet	H	34	2	66	79	119	188	491	396	647	602
	R	0	3	14	4	4	13	83	108	19	5

<sup>1</sup> In this table, '0' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.<sup>2</sup> Kingfishes include southern kingfish and Gulf kingfish.<sup>3</sup> Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks and unidentified sharks.

**Mississippi's State Economy (% of national total)**

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	60,542 (0.8%)	926,952 (0.8%)	25.8 (0.6%)	46.03 (0.7%)	82.27 (0.6%)	1.96
2013	58,435 (0.8%)	902,638 (0.8%)	31.7 (0.6%)	55.14 (0.6%)	104.09 (0.6%)	1.18
% Change	-3.6	-2.7	18.6	16.5	21.0	-39.8

**Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	12	22	ds	17	16	30	25	27	ds
	Receipts	1,045	1,537	ds	1,055	753	1,937	2,108	930	ds
Seafood sales, retail	Firms	41	53	57	48	56	69	51	50	54
	Receipts	2,934	4,021	4,126	3,437	4,206	3,421	3,505	3,957	3,855

**Seafood Sales & Processing - Employer Establishments (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	28	24	22	20	20	20	18	18	19
	Employees	3,637	3,353	3,022	3,062	2,796	2,849	2,464	2,368	2,284
	Payroll	63,957	60,510	60,633	61,723	61,926	61,731	52,502	55,407	59,212
Seafood sales, wholesale	Establishments	30	23	25	18	16	18	18	17	14
	Employees	145	58	106	61	113	0	64	102	0
	Payroll	1,822	2,063	3,285	3,088	2,836	2,542	2,532	4,412	1,546
Seafood sales, retail	Establishments	21	12	15	18	14	15	17	13	13
	Employees	57	41	0	50	46	50	58	0	0
	Payroll	521	395	0	699	841	810	838	1,902	0

**Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	5	5	4	5	5	4	4	4	6
	Employees	ds	ds	ds	119	114	ds	127	ds	230
	Payroll	ds	ds	7,585	8,351	7,730	8,058	7,233	ds	17,080
Deep sea freight transportation	Establishments	3	3	1	0	1	1	1	2	1
	Employees	ds	ds	ds	NA	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	NA	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	1	1	1	0	0	0	0	0	0
	Employees	ds	ds	ds	NA	NA	NA	NA	NA	NA
	Payroll	ds	ds	ds	NA	NA	NA	NA	NA	NA
Marinas	Establishments	25	16	19	17	13	18	19	16	16
	Employees	158	ds	ds	111	172	183	189	204	154
	Payroll	2,358	ds	2,145	2,794	3,479	4,163	5,137	5,361	3,972
Marine cargo handling	Establishments	6	5	5	7	8	7	7	2	4
	Employees	ds	238	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	8,621	ds	ds	ds	ds	ds	ds	ds
Navigational services to shipping	Establishments	8	8	9	8	7	8	6	7	6
	Employees	ds	ds	ds	ds	ds	141	ds	ds	ds
	Payroll	ds	ds	1,754	ds	ds	6,982	ds	ds	ds
Port & harbor operations	Establishments	2	1	1	1	1	1	1	3	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	17	20	23	24	20	20	20	18	19
	Employees	11,845	11,909	14,578	ds	ds	ds	ds	ds	ds
	Payroll	471,243	498,660	615,837	ds	ds	ds	ds	ds	ds

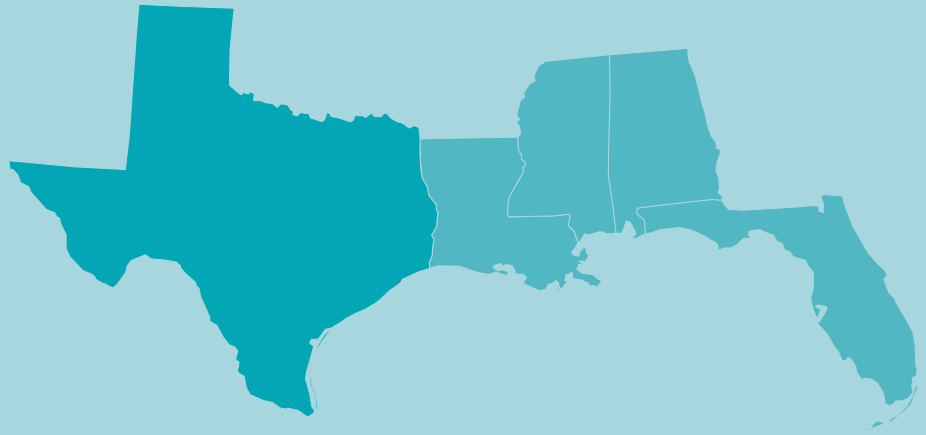
<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.



# Tables | Texas



**2014 Economic Impacts of the Texas Seafood Industry (thousands of dollars)**

	With Imports				Without Imports			
	#Jobs	Sales	Income	Value Added	#Jobs	Sales	Income	Value Added
Total Impacts	33,880	2,857,586	826,213	1,238,477	26,496	1,568,259	567,146	796,557
Commercial Harvesters	6,889	590,201	169,040	272,087	6,889	590,201	169,040	272,087
Seafood Processors & Dealers	2,391	195,657	73,604	96,939	2,204	180,327	67,838	89,344
Importers	3,842	1,056,873	169,384	322,181	-	-	-	-
Seafood Wholesalers & Distributors	1,571	207,484	69,229	95,869	789	104,273	34,792	48,180
Retail	19,187	807,372	344,955	451,400	16,614	693,459	295,476	386,945

**Total Landings Revenue & Landings Revenue of Key Species/Species Groups (thousands of dollars)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenue	172,337	197,291	180,575	176,098	154,530	203,795	240,566	215,083	267,998	278,353
Finfish & Other	10,813	11,359	9,452	7,709	7,488	7,888	8,445	10,231	13,361	13,709
Shellfish	161,523	185,932	171,123	168,389	147,043	195,907	232,121	204,852	254,637	264,644
<b>Key Species</b>										
Atlantic croaker	415	500	450	446	484	531	622	743	819	681
Black drum	1,917	2,013	1,660	1,363	1,377	1,573	1,448	1,491	1,699	1,981
Blue crab	2,410	1,459	2,763	2,342	2,454	3,134	2,845	2,878	2,331	3,050
Flounders	276	164	62	144	91	62	205	175	73	97
Groupers	795	628	417	553	641	356	549	723	1,121	1,128
Oysters	15,883	17,263	19,246	8,835	9,376	19,144	12,789	21,302	23,465	19,221
Red snapper	5,345	6,168	3,762	2,744	2,398	3,009	3,254	4,448	7,324	7,617
Shrimp	143,045	167,108	149,084	157,187	135,100	173,556	216,382	180,562	228,768	242,299
Tunas	340	0	NA	94	139	4	2	5	7	14
Vermilion snapper	571	642	1,554	1,430	1,233	1,337	1,274	1,434	659	604

**Total Landings & Landings of Key Species/Species Groups (thousands of pounds)<sup>1</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Landings	84,289	117,131	87,912	73,048	102,351	89,721	98,857	91,438	84,875	73,491
Finfish & Other	5,782	5,825	4,800	3,866	4,134	4,247	4,224	4,225	4,872	4,842
Shellfish	78,507	111,306	83,111	69,182	98,216	85,475	94,633	87,213	80,003	68,650
<b>Key Species</b>										
Atlantic croaker	58	67	62	59	63	67	79	89	96	78
Black drum	2,077	2,212	1,687	1,468	1,610	1,729	1,795	1,623	1,689	1,747
Blue crab	3,119	1,966	3,454	2,635	2,844	3,436	2,893	2,853	1,902	2,234
Flounders	144	68	24	58	32	26	75	60	20	25
Groupers	303	220	141	170	208	144	190	211	292	273
Oysters	5,007	4,923	5,633	2,679	2,733	5,265	3,943	5,817	6,126	4,129
Red snapper	1,940	2,158	1,213	870	851	1,031	948	1,123	1,800	1,797
Shrimp	70,310	104,378	74,007	63,855	92,602	76,734	87,753	78,507	71,948	62,265
Tunas	112	0	NA	22	45	1	1	3	3	6
Vermilion snapper	279	273	672	592	561	539	465	511	234	203

**Average Annual Price of Key Species/Species Groups (dollars per pound)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic croaker	7.14	7.43	7.29	7.58	7.64	7.98	7.84	8.31	8.55	8.77
Black drum	0.92	0.91	0.98	0.93	0.86	0.91	0.81	0.92	1.01	1.13
Blue crab	0.77	0.74	0.80	0.89	0.86	0.91	0.98	1.01	1.23	1.37
Flounders	1.92	2.42	2.55	2.48	2.84	2.37	2.75	2.94	3.55	3.89
Groupers	2.62	2.85	2.96	3.25	3.07	2.47	2.88	3.42	3.84	4.13
Oysters	3.17	3.51	3.42	3.30	3.43	3.64	3.24	3.66	3.83	4.66
Red snapper	2.76	2.86	3.10	3.15	2.82	2.92	3.43	3.96	4.07	4.24
Shrimp	2.03	1.60	2.01	2.46	1.46	2.26	2.47	2.30	3.18	3.89
Tunas	3.04	0.69	NA	4.26	3.08	3.19	1.82	1.83	2.10	2.29
Vermilion snapper	2.05	2.35	2.31	2.42	2.20	2.48	2.74	2.81	2.81	2.98

<sup>1</sup> NA = these data are confidential thus not disclosable.

**2014 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)**

		#Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	948	99,716	38,693	57,356
	Private Boat	2,150	252,000	86,743	147,480
	Shore	2,478	275,325	94,377	160,547
Total Durable Expenditures		10,920	1,198,249	537,214	839,763
Total State Economic Impacts		16,496	1,825,290	757,027	1,205,146

**2014 Angler Trip & Durable Goods Expenditures (thousands of dollars)<sup>1</sup>**

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-Residents	Residents		
For-Hire	3,677	51,052	Fishing Tackle	249,065
Private Boat	5,581	159,017	Other Equipment	145,510
Shore	15,043	162,357	Boat Expenses	490,059
Total	24,302	372,426	Vehicle Expenses	395,973
			Second Home Expenses	39,100
			Total Durable Expenditures	1,319,707
Total State Trip and Durable Goods Expenditures				1,716,435

**Harvest (H) of Key Species Species Groups (thousands of fish)<sup>2</sup>**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Atlantic croaker	95	101	95	64	117	125	157	157	152	117
Black drum	53	73	66	82	98	165	129	257	150	139
King mackerel	14	29	11	8	16	6	9	9	10	13
Red drum	231	318	289	266	285	264	347	323	269	247
Red snapper	49	69	45	41	31	33	36	34	48	40
Sand seatrout	125	129	95	152	111	127	227	177	151	147
Sheepshead	81	78	46	46	34	49	57	143	84	39
Southern flounder	81	64	49	64	47	30	92	96	92	71
Spotted seatrout	855	987	916	917	810	732	1,137	810	796	590

<sup>1</sup> The Marine Recreational Information Program (MRIP) does not collect participation (number of anglers) or effort (number of trips) data for Texas. To calculate trip expenditure estimates, effort by fishing mode was estimated based on 2013 data provided by the Texas Parks and Wildlife Department (TPWD). These effort estimates were reviewed by the TPWD. To calculate angler expenditure estimates (durable equipment expenditures), participation estimates were based on the sum of saltwater licenses sold in Texas plus a proportion of combination licenses sold in Texas. A change in the method of reporting landings occurred in 2007 so data from 2007 is not comparable to earlier years.

<sup>2</sup> Data collected by the TPWG is reported in this table. The data collected by the TPWD differs from the data collected and reported in the MRIP. Data on the number of fish released are not reported by TPWD. Please see the TPWD for more information: [www.tpwd.state.tx.us/fishboat/](http://www.tpwd.state.tx.us/fishboat/).

**Texas's State Economy (% of national total)**

	#Establishments	#Employees	Annual Payroll (\$ billions)	Employee Compensation (\$ billions)	Gross State Product (\$ billions)	Commercial Fishing Location Quotient <sup>1</sup>
2005	497,758 (6.6%)	8,305,102 (7.1%)	315.81 (7%)	491.28 (6.9%)	999.64 (7.7%)	0.38
2013	547,190 (7.3%)	9,663,567 (8.2%)	468.42 (8.3%)	713.14 (8.1%)	1,557.19 (9.3%)	0.24
% Change	9.0	14.1	32.6	31.1	35.8	-36.8

**Seafood Sales & Processing - Non-Employer Firms (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Firms	108	109	94	85	82	99	119	123	123
	Receipts	2,228	2,974	5,386	3,466	3,858	3,224	5,734	6,675	7,484
Seafood sales, retail	Firms	159	141	182	188	196	184	171	194	173
	Receipts	19,534	18,355	17,442	18,204	13,177	12,124	13,433	14,891	15,094

**Seafood Sales & Processing - Employer Establishments (thousands of dollars)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Seafood product prep. & packaging	Establishments	23	21	26	27	24	22	24	22	30
	Employees	1,288	1,155	1,207	1,169	1,026	1,184	1,273	1,248	1,026
	Payroll	23,842	24,302	27,813	27,045	29,006	24,961	26,425	27,737	27,638
Seafood sales, wholesale	Establishments	97	92	104	69	75	77	82	71	75
	Employees	1,001	897	970	734	683	715	723	603	729
	Payroll	26,408	28,586	51,597	24,498	23,650	23,879	26,356	25,309	30,370
Seafood sales, retail	Establishments	59	58	62	60	51	52	50	60	60
	Employees	176	207	189	206	189	199	0	0	331
	Payroll	3,162	3,229	3,703	3,403	3,393	3,742	4,090	6,102	6,891

**Transport, Support & Marine Operations - Employer Establishments (thousands of dollars)<sup>2,3</sup>**

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal & Great Lakes freight transportation	Establishments	61	45	43	42	43	48	48	39	42
	Employees	ds	2,270	2,513	2,815	2,729	1,909	1,764	1,814	2,253
	Payroll	ds	107,328	131,946	251,997	200,219	161,080	177,549	174,686	207,831
Deep sea freight transportation	Establishments	43	40	41	35	36	30	39	40	33
	Employees	ds	751	920	514	802	764	860	742	ds
	Payroll	ds	41,969	49,761	40,764	61,309	63,408	71,515	65,818	44,902
Deep sea passenger transportation	Establishments	4	3	4	3	2	1	1	0	2
	Employees	ds	ds	ds	ds	ds	ds	ds	NA	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	NA	ds
Marinas	Establishments	166	150	141	143	131	148	144	132	124
	Employees	ds	ds	1,200	1,486	1,423	1,198	1,233	1,169	1,258
	Payroll	ds	ds	28,359	34,039	33,803	33,968	34,928	34,711	36,461
Marine cargo handling	Establishments	60	64	62	55	57	54	55	42	48
	Employees	5,200	5,349	6,237	6,313	6,276	5,262	5,259	4,373	6,390
	Payroll	151,522	161,386	186,416	196,006	167,562	166,877	153,360	130,817	272,286
Navigational services to shipping	Establishments	87	84	90	99	95	87	91	91	89
	Employees	1,064	1,373	1,709	1,884	1,849	1,606	1,448	1,676	1,485
	Payroll	75,914	98,244	125,061	137,962	137,289	132,283	113,444	124,500	130,572
Port & harbor operations	Establishments	15	16	15	24	30	29	26	37	27
	Employees	ds	112	98	ds	421	ds	439	1,381	630
	Payroll	ds	4,992	5,163	10,538	13,778	18,627	18,842	55,470	25,229
Ship & boat building	Establishments	99	90	96	102	99	97	91	89	87
	Employees	3,564	3,515	4,810	5,368	3,891	3,386	2,773	5,601	5,686
	Payroll	156,259	170,308	210,275	235,190	158,261	147,492	153,077	310,230	297,248

<sup>1</sup> The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.

<sup>2</sup> ds = these data are suppressed.

<sup>3</sup> NA = not applicable.



# Data Sources

Fishing rods  
(photo credit: Neophuket / Shutterstock)



### MANAGEMENT CONTEXT

- Excess Harvesting Capacity in U.S. Fisheries, A Report to Congress. April 28, 2008. National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). [http://www.pcouncil.org/bb/2008/0608/C2b\\_SUP\\_ATT2\\_0608.pdf](http://www.pcouncil.org/bb/2008/0608/C2b_SUP_ATT2_0608.pdf)
- "Status of U.S. Fisheries." Office of Sustainable Fisheries, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). [http://www.nmfs.noaa.gov/sfa/fisheries\\_eco/status\\_of\\_fisheries/](http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/)
- "Endangered Species Act (ESA)." Office of Protected Resources, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). [www.nmfs.noaa.gov/pr/laws/esa/](http://www.nmfs.noaa.gov/pr/laws/esa/)
- "Certified Fisheries." Marine Stewardship Council. [www.msc.org/](http://www.msc.org/)
- "Catch Shares." Office of Sustainable Fisheries, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). [http://www.fisheries.noaa.gov/sfa/management/catch\\_shares/index.html](http://www.fisheries.noaa.gov/sfa/management/catch_shares/index.html)

### Fishery Management Councils & Fishery Plans:

- Caribbean Fishery Management Council. [www.caribbeanfmc.com](http://www.caribbeanfmc.com)
- Gulf of Mexico Fishery Management Council. [www.gulfcouncil.org](http://www.gulfcouncil.org)
- Mid-Atlantic Fishery Management Council. <http://www.mafmc.org/>
- New England Fishery Management Council. [www.nefmc.org/](http://www.nefmc.org/)
- North Pacific Fishery Management Council. <http://www.npfmc.org/>
- Pacific Fishery Management Council. [www.pcouncil.org](http://www.pcouncil.org)
- South Atlantic Fishery Management Council. [www.safmc.net](http://www.safmc.net)
- Western Pacific Fishery Management Council. [www.wpcouncil.org](http://www.wpcouncil.org)

### COMMERCIAL FISHERIES

#### Data for New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, North Pacific, Pacific and Western Pacific Regions:

- Commercial Landings Database. Obtained November 2, 2014. Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). [www.st.nmfs.noaa.gov/st1/commercial/index.html](http://www.st.nmfs.noaa.gov/st1/commercial/index.html)

#### Pacific cod, flatfish, Atka mackerel, walleye pollock, rockfish and sablefish data, North Pacific Region:

- Alaska Fisheries Science Center, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). Obtained November 2, 2014. [www.afsc.noaa.gov](http://www.afsc.noaa.gov)

#### Economic Impacts of the U.S. Commercial Seafood Industry:

- A User's Guide to the National and Coastal State I/O Model. [http://www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2007-2009.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf)

#### Additional information:

- "Data Caveats." Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). <https://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/data-caveats/index>
- "NOAA Fisheries Economics & Social Sciences Program." Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). [www.st.nmfs.noaa.gov/st5/index.html](http://www.st.nmfs.noaa.gov/st5/index.html)

## RECREATIONAL FISHERIES

### Data for New England, Mid-Atlantic, South Atlantic, Gulf of Mexico and Western Pacific Regions:

- Recreational Fishery Statistics Queries." Obtained October 15, 2015. Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries).  
<http://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/run-a-data-query>

### Data for Pacific Region:

- Pacific States Marine Fisheries Commission, Recreational Fisheries Information Network (RecFIN). Obtained July 20, 2015. <http://www.recfin.org>

### Data for North Pacific Region:

- Alaska Department of Fish & Game. Obtained September 28, 2015. <http://www.adfg.state.ak.us>

### Data for Texas (Gulf of Mexico Region):

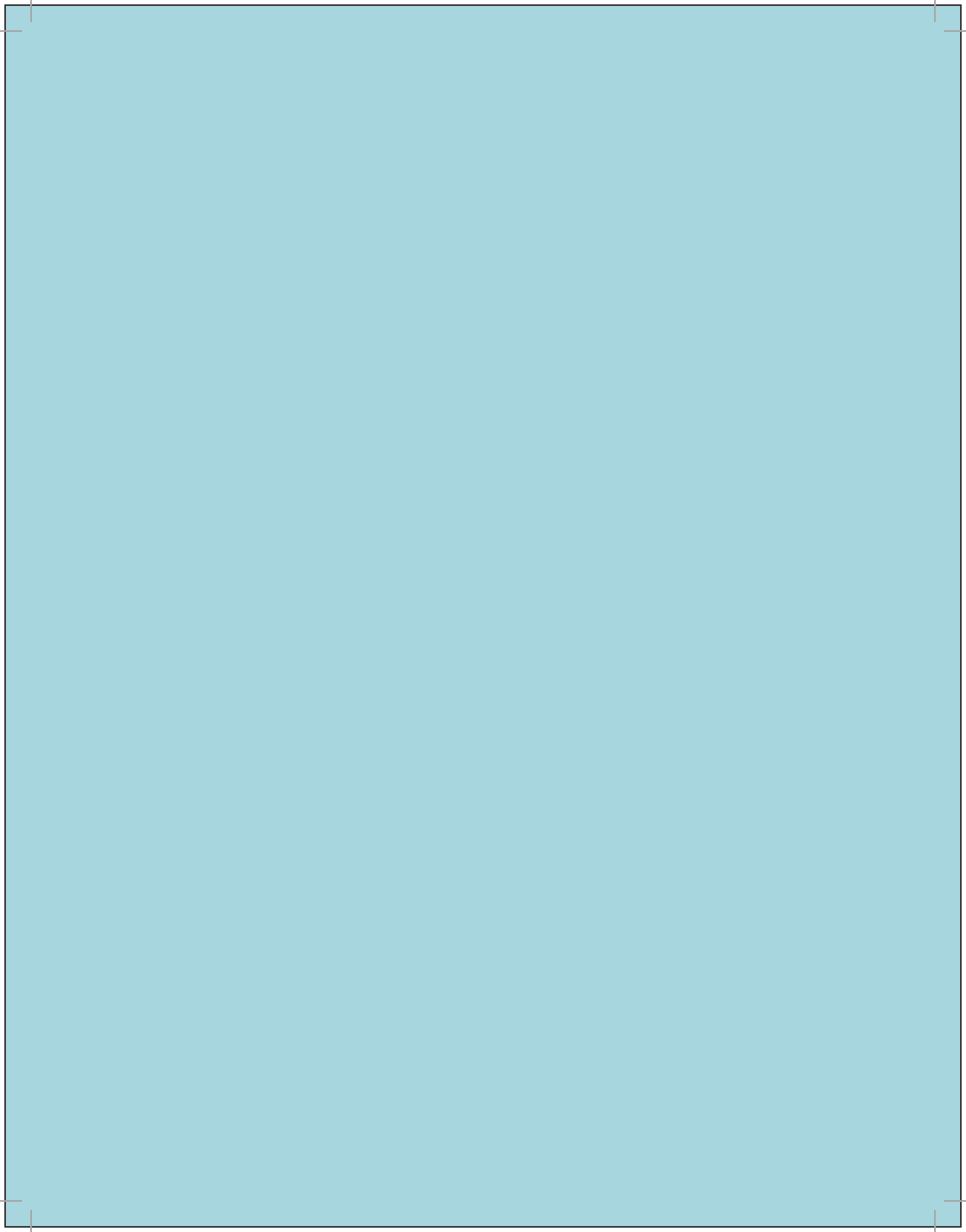
- Texas Parks & Wildlife Department. Obtained July 20, 2015. [www.tpwd.state.tx.us](http://www.tpwd.state.tx.us)
- Louisiana Department of Wildlife and Fisheries. Obtained July 28, 2015. <http://www.wlf.louisiana.gov/about-la-creel>

### Recreational Fishing Expenditures and Impacts:


- Lovell, Sabrina, Scott Steinback, and James Hilger. 2013. The Economic Contribution of Marine Angler Expenditures in the United States, 2011. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-134, 188p.  
<http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011>
- Lovell, J. Sabrina, James Hilger, Scott Steinback, and Clifford Hutt. 2016. The Economic Contribution of Marine Angler Expenditures on Durable Goods in the United States, 2014. U.S. Dept. of Commerce. Draft report.  
<http://www.st.nmfs.noaa.gov/economics/fisheries/recreational/Marine-Angler-Durable-Expenditures/2014-durable-expenditures-survey>

## THE MARINE ECONOMY

- "County Business Patterns Data Series." Obtained July 31, 2015. U.S. Census Bureau.  
<http://www.census.gov/econ/cbp/>
- "Gross Domestic Product by State." Obtained July 31, 2015. Bureau of Economic Analysis.  
<http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=2#reqid=70&step=1&isuri=1>
- "Location Quotient Calculator." Obtained July 31, 2015. Bureau of Labor Statistics.  
[data.bls.gov/LOCATION\\_QUOTIENT/servlet/lqc.ControllerServlet](http://data.bls.gov/LOCATION_QUOTIENT/servlet/lqc.ControllerServlet)
- "Nonemployer Statistics." Obtained July 31, 2015. U.S. Census Bureau.  
<http://www.census.gov/econ/nonemployer/index.html>



# Publications

A teal-tinted photograph showing a person on the deck of a boat, looking out over a body of water towards a range of mountains. The person is wearing a dark jacket and pants. The boat's deck, railing, and a circular light fixture are visible in the foreground. The water is choppy, and the sky is clear.

Charter boat, Santa Barbara, California  
(photo credit: Sabrina Beyer)



## Publications

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Selected publications by NOAA Fisheries Economics and Social Sciences Program staff are grouped by geographic region of focus and then organized under the following categories:

Climate Change Research  
Coastal & Marine Recreation Research  
Commercial Fisheries Economics Research  
Spatial Analysis & Marine Protected Areas Research  
Ocean Policy & Management Research  
Other Marine Environmental Research

Recreational Fisheries Economics Research  
Habitat Economics Research  
Seafood Marketing & Trade Research  
Sociocultural Research  
U.S. Territories & International Fisheries Research  
Protected Resources Economics Research

# United States

## UNITED STATES | Climate Change Research

**Himes-Cornell, A.** and M. Orbach. 2013. Impacts of Climate Change on Human Uses of the Ocean. Oceans and Marine Resources in a Changing Climate: Technical Input to the 2013 National Climate Assessment, **Griffis, R.** and **J. Howard**, eds., Washington, D.C.: Island Press, pp. 64-118.

**Himes-Cornell, A., S. Allen,** G. Auad, M. Boatman, **P. Clay, M. Dalton, S. Herrick,** D. Kotowicz, **P. Little,** C. Lopez, P. Loring, **P. Niemeier, K. Norman, L. Pfeiffer, M. Plummer, M. Rust,** M. Singer, and **C. Speirs.** 2013. Impacts of Climate Change on Human uses of the Ocean and Ocean Services. Section 4, Oceans and Marine Resources in a Changing Climate: Technical Input to the 2013 National Climate Assessment. U.S. Global Change Research Program: Washington, D.C. pp. 73-137.

**Howard, J.,** E. Babij, **R. Griffis,** B. Helmuth, **A. Himes-Cornell, P. Niemier,** M. Orbach, **L. Petes, S. Allen,** G. Auad, **R. Beard,** M. Boatman, N. Bond, **T. Boyer, D. Brown, P. Clay, K. Crane, S. Cross, M. Dalton,** J. Diamond, R. Diaz, **Q. Dortch, E. Duffy,** D. Fauquier, W. Fisher, M. Graham, B. Halpern, L. Hansen, B. Hayum, **S. Herrick, A. Hollowed,** D. Hutchins, **E. Jewett,** D. Jin, N. Knowlton, D. Kotowicz, **T. Kristiansen, P. Little, C. Lopez,** P. Loring, **R. Lumpkin,** A. Mace, K. Mengerink, J. Ru Morrison, Jason Murray, **K. Norman, J. O'donnell, J. Overland, R. Parsons, N. Pettigrew, L. Pfeiffer,** E. Pidgeon, **M. Plummer, J. Polovina,** J. Quintrell, **T. Rowles,** J. Runge, **M. Rust,** E. Sanford, U. Send, M. Singer, **C. Speir, D. Stanitski,** C. Thornber, **C. Wilson,** and **Y. Xue.** 2013. Oceans and Marine Resources in a Changing Climate. *Oceanography and Marine Biology: An Annual Review* 51: 71-192.

Ocean and Coastal Indicator Technical Team (**R. Griffis, L. Mcgilvray,** D. Cahoon, **T. Clay,** E. Curchitser, K. Curtis, J. Devivo, B. Duncan, **S. Gill,** J. Grear, B. Halpern, **J. Hare, A. Himes-Cornell, J. Howard,** R. Johnston, M. Kenney, **D. Legler,** E. Lindstrom, **T. O'Brien,** S. Rumrill, **E. Thunberg,** T. Webler, J. West, **R. Wood, S. Zador, S. Busch,** and **E. Fly**). 2013. Research priorities to advance the oceans and coasts climate indicators system. Report to the National Climate Assessment Indicator System Working Group. Project information available at: <http://www.globalchange.gov/what-we-do/assessment/indicators-system>.



Babji, E., **P. Niemeier**, B. Hayum., **A. Himes-Cornell**, **A. Hollowed**, **P. Little**, M. Orbach, and E. Pidgeon. 2012. International Implications of Climate Change. Section 5 in Oceans and Marine Resources in a Changing Climate: Technical Input to the 2013 National Climate Assessment. U.S. Global Change Research Program: Washington D.C. pp. 138-162.

**Haynie, A.** and **L. Pfeiffer**. 2012. Why Economics Matters for Understanding the Effects of Climate Change on Fisheries. *ICES Journal of Marine Science*. DOI: 10.1093/icesjms/fss021.

McIlgorm, A., S. Hanna, G. Knapp, P. Floc'h, F. Millerd and **M. Pan**. 2010. How will climate change alter fishery governance? Insights from seven international case studies. *Marine Policy* 34(1): 170-177.

**Dalton, M.**, B. O'Neill, A. Prskawetz, L. Jiang, and J. Pitkin. 2008. Population aging and future carbon emissions in the United States. *Energy Economics* 30(2): 642-675.

Hannesson, R., M. Barange, and **S. Herrick**, eds. 2006. Climate Change and the Economics of the World's Fisheries. U.K: Edward Elgar, 310p.

**Dalton, M.** 2002. Synthesizing trends of the twentieth century: population and climate change. *Climatic Change* 55: 409-412.

#### **UNITED STATES | Coastal & Marine Recreation Research**

**Marvasti, A.** 2013. Estimating Outdoor Recreation Demand: A Revealed Preference Approach. *Ocean and Coastal Management* 71(1): 170-175.

#### **UNITED STATES | Commercial Fisheries Economics Research**

**Holland, D., E. Thunberg, J. Agar, S. Crosson, C. Demarest, S. Kasperski, L. Perruso, E. Steiner, J. Stephen, A. Strelcheck,** and **M. Travis**. 2015. U.S. Catch Share Markets: A Review of Data Availability and Impediments to Transparent Markets. *Marine Policy* 57(2015): 103-110.

Kroetz, K., J. Sanchirico, and **D. Lew**. 2015. Efficiency Costs of Social Objectives in Tradable Permit Programs. Forthcoming in the Journal of the Association of Environmental and Resource Economists.

Collier, T., **A. Mamula**, and J. Ruggiero. 2014. Estimation of multi-output production functions in commercial fisheries. *Omega* 42(1): 157-165.

**Holland, D., E. Thunberg, J. Agar, S. Crosson, C. Demarest, S. Kasperski, L. Perruso, E. Steiner, J. Stephen, A. Strelcheck,** and **M. Travis**. 2014. U.S. Catch Share Markets: A Review of Characteristics and Data Availability. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-145, 67p.

**Kasperski, S.** 2014. Optimal Multi-Species Harvesting in Ecologically and Economically Interdependent Fisheries. *Environmental and Resource Economics*. DOI: 10.1007/s10640-014-9805-9.

**Walden, J., J. Agar, R. Felthoven,** A. Harley, **S. Kasperski, J. Lee, T. Lee, A. Mamula, J. Stephen, A. Strelcheck,** and **E. Thunberg**. 2014. Productivity Change in U.S. Catch Share Fisheries. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-146.

## Publications

---

**Crosson, S.**, T. Yandle, and **B. Stoffle**. 2013. Renegotiating property rights in the Florida golden crab fishery. *International Journal of the Commons* 7(2): 521-548.

**Fissel, B.**, B. Gilbert, and J. LaRiviere. 2013. Technology Adoption and Diffusion with Uncertainty in a Commons. *Economic Letters* 120(2): 297-301.

**Lee, M-Y.** and **E. Thunberg**. 2013. An Inverse Demand System for New England Groundfish: Welfare Analysis of the Transition to Catch Share Management. *American Journal of Agricultural Economics* 95(5): 1178-1195.

Schnier, K. and **R. Felthoven**. 2013. Production Efficiency and Exit in Rights-Based Fisheries. *Land Economics* 89(3): 538-557.

Abbott, J., and **A. Haynie**. 2012. What are we Protecting? Fisher behavior and the unintended consequences of spatial closures as a fishery management tool. *Ecological Applications* 22(3): 762-777.

**Hospital, J.** and **C. Beavers**. 2012. Economic and Social Characteristics of Bottomfish Fishing in the Main Hawaiian Islands. U.S. Dept. of Commerce. Administrative Report H-12-01.

**Lian, C.** 2012. West Coast Open Access Groundfish and Salmon Troller Survey: Protocol and Results for 2005 and 2006. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NWFSC-116.

Fell, H. and **A. Haynie**. 2011. Estimating Time-varying Bargaining Power: A Fishery Application. *Economic Inquiry* 49(3): 685-696. DOI: 10.1111/j.1465-7295.2009.00275.x.

**Walden, J.** and **D. Tomberlin**. 2010. Estimating Fishing Vessel Capacity: A Comparison of Nonparametric Frontier Approaches. *Marine Resource Economics* 25(1): 23-36.

Smith, M., C. Roheim, L. Crowder, B. Halpern, M. Turnipseed, J. Anderson, F. Asche, L. Bourilln, A. Guttormsen, A. Khan, L. Liguori, A. McNevin, M. OConnor, **D. Squires**, P. Tyedmers, C. Brownstein, K. Carden, D. Klinger, R. Sagarin, and K. Selkoe. 2010. Sustainability and Global Seafood. *Science* 327(5967): 784-786.

**Squires, D.**, Y. Jeon, R. Grafton, and J. Kirkley. 2010. Controlling Excess Capacity in Common-Pool Resource Industries: The Transition from Input to Output Controls. *Australian Journal of Agricultural and Resource Economics* 54(3): 361-377.

**Herrick, S.**, J. Norton, R. Hannesson, U. Sumaila, M. Ahmed, and J. Pena-Torres. 2010. Global production and economics of small pelagic fish. *Climate Change and Small Pelagic Fish*, Checkley, D.M., J. Alheit, Y. Oozeki and C. Roy, eds., pp. 256-274. New York: Cambridge University Press.

**Holland, D.** 2010. Markets, Pooling and Insurance for Managing Bycatch in Fisheries. *Ecological Economics* 70(1): 121-133.

**Squires, D.** 2010. Fisheries Buybacks: A Review and Guidelines. *Fish and Fisheries* 11(4): 366-387.

Grafton, R., R. Hilborn, **D. Squires**, and M. Williams. 2010. Marine Fisheries Conservation and Management: At the Crossroads, Chapter 1. *Handbook of Marine Fisheries Conservation and Management*. R.Q. Grafton, R. Hilborn, D. Squires, M. Tait, and M. Williams, eds., pp. 1-19. Oxford: Oxford University Press.

**Squires, D.**, T. Groves, R. Grafton, **R. Curtis**, J. Joseph, and R. Allen. 2010. Fisheries Buybacks, Chapter 37. *Handbook of Marine Fisheries Conservation and Management*. R.Q. Grafton, R. Hilborn, D. Squires, M. Tait, and M. Williams, eds., pp. 507-519. Oxford: Oxford University Press.

**Walden, J.**, J. Kirkley, and R. Fre. 2010. Measuring and managing fishing capacity, Chapter 40. *Handbook of Marine Fisheries Conservation and Management*. R.Q. Grafton, R. Hilborn, D. Squires, M. Tait, and M. Williams, eds., pp. 546-554. Oxford: Oxford University Press.

Smith, C. and **P. Clay**. 2010. Measuring Subjective and Objective Well-Being: Examples from Five Commercial Fisheries. *Human Organization* 69(2): 158-168.

**Holland, D.** and G. Herrera. 2010. The Benefits and Risks of Increased Spatial Resolution in Management of Fishery Metapopulations Under Uncertainty. *Natural Resource Modeling* 23(4): 494-520.

**Felthoven, R.**, K. Schnier, and W. Horrace. 2009. Estimating Heterogeneous Primal Capacity and Capacity Utilization Measures in a Multi-Species Fishery. *Journal of Productivity Analysis* 32: 173-189.

Grafton, R., R. Hilborn, L. Ridgeway, **D. Squires**, M. Williams, S. Garcia, T. Groves, R. Hilborn, J. Joseph, K. Kelleher, T. Kompas, G. Libecap, C. Lundin, M. Makino, T. Matthiasson, R. McLoughlin, A. Parma, G. San Marin, B. Satia, C-C Schmidt, M. Tait, and L. Zhang. 2008. Positioning Fisheries in a Changing World. *Marine Policy* 32(4): 630-634.

**Milazzo, M., J. Terry**, and **J. Walden**. 2008. Excess Harvesting Capacity in U.S. Fisheries: A Report to Congress. U.S. Dept. of Commerce. National Oceanic & Atmospheric Administration, National Marine Fisheries Service, 101p. Available at: [http://www.nmfs.noaa.gov/msa2007/docs/042808\\_312\\_b\\_6\\_report.pdf](http://www.nmfs.noaa.gov/msa2007/docs/042808_312_b_6_report.pdf).

**Terry, J., J. Walden**, and J. Kirkley. 2008. National Assessment of Excess Harvesting Capacity in Federally Managed Commercial Fisheries. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-93, 366p. Available at: <http://spo.nwr.noaa.gov/tm/spo93.pdf>.

Kirkley, J., **J. Walden**, and **J. Waters**. 2007. Buyback programs: goals, objectives, and industry restructuring in fisheries. Fisheries Buybacks, R. Curtis and **D. Squires**, eds., pp. 227-237. Blackwell Publishing.

Kirkley, J., **J. Walden**, and **J. Ward**. 2007. The status of U.S.A's commercial fisheries and management and crystal-balling the future. *International Journal of Global Environmental Issues* 7(2/3): 119-136.

**Terry, J.** 2007. An assessment of the use of capacity analysis in U.S. federal fishery management. *Marine Resource Economics* 22: 99-103.

**Curtis, R.** and **D. Squires**, eds. 2007. Fisheries Buybacks. pp. 288. Oxford: Blackwell Publishing.

Grafton, R., R. Arnason, T. Bjørndal, D. Campbell, H. Campbell, C. W. Clark, R. Connor, D. Dupont, R. Hannesson, R. Hilborn, J. Kirkley, T. Kompas, D. Lane, G. Munro, S. Pascoe, **D. Squires**, S. Steinshamn, B. Turriss, and Q. Weninger. 2006. Incentive-based approaches to sustainable fisheries. *Canadian Journal of Fisheries and Aquatic Sciences* 63(3): 699-710.

## Publications

---

Branch, T., R. Hilborn, **A. Haynie**, G. Fay, L. Flynn, J. Griffiths, K. Marshall, J. Randall, J. Scheuerell, E. Ward, and M. Young. 2006. Fleet dynamics and Fishermen Behavior: Lessons for Fisheries Managers. *Canadian Journal of Fisheries and Aquatic Sciences* 63(7): 1647-1668.

Kerstens, K., N. Vestergaard, and **D. Squires**. 2006. A short-run Johansen industry model for common-pool resources: planning a fishery's industrial capacity to curb overfishing. *European Review of Agricultural Economics* 33(3): 1-29.

Kerstens, K., **D. Squires**, and N. Vestergaard. 2006. Methodological reflections on the short-run Johansen industry model in relation to capacity management. *Marine Resource Economics* 20(4): 425-443.

**Seung, C.** and E. Waters. 2006. A Review of Regional Economic Models for Fisheries Management in the U.S. *Marine Resource Economics* 21(1): 101-124.

Grafton, Q., J. Kirkley, T. Kompas, and **D. Squires**. 2006. Economics for Fisheries Management. Aldershot, England: Ashgate Publishing, 165p.

Kirkley, J., **J. Ward**, J. Nance, F. Patella, K. Brewster-Geisz, C. Rogers, **E. Thunberg**, **J. Walden**, W. Daspit, B. Stenberg, **S. Freese**, **J. Hastie**, **S. Holiman**, and **M. Travis**. 2006. Reducing Capacity in U.S. Managed Fisheries. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-76, 45p. Available at <http://spo.nwr.noaa.gov/tm/tm76.pdf>.

**Seung, C.** and E. Waters. 2005. A Review of Regional Economic Models for Alaska fisheries. Alaska Fisheries Science Center Processed Report 2005-01.

**Edwards, S.** 2005. Ownership of multi-attribute fishery resources in Large Marine Ecosystems. Sustaining Large Marine Ecosystems: The Human Dimension. T. Hennessey and J. Sutinen, eds., pp. 137-154. New York: Elsevier.

**Edwards, S., J. Link**, and **B. Rountree**. 2004. Portfolio management of wild fish stocks. *Ecological Economics* 49(3): 317-329.

**Agar, J.** and J. Sutinen. 2004. Rebuilding strategies for multispecies fisheries: a stylized bioeconomic model. *Environmental and Resource Economics* 29(1): 1-29.

**Felthoven, R.** and C. Morrison Paul. 2004. Directions for Productivity Measurement in Fisheries. *Marine Policy* 28: 161-169.

**Ward, J.,** P. Mace, and **E. Thunberg**. 2004. The relationship of fish harvesting capacity to excess capacity and overcapacity. *Marine Resource Economics* 19(4): 525-529.

**Felthoven, R.** 2004. Methods for Estimating Fishing Capacity with Routinely Collected Data: A Comparison. *Review of International Fisheries Law and Policy* 1(2): 125-137.

**Edwards, S.** 2003. Property rights to multi-attribute fishery resources. *Ecological Economics* 44(2-3): 309-323.

**Kitts, A.** and **S. Edwards**. 2003. Cooperatives in fisheries: realizing the potential of the Fishermen's Collective Marketing Act. *Marine Policy* 27: 357-366.

**Curtis, R.** and C. Sarmiento. 2002. Identification of economies of scope in a stochastic production environment. *Canadian Journal of Agricultural Economics* 50(3): 257-267.

Grafton, R. and **D. Squires**. 2002. A property-rights perspective of efficiency: privatizing the commons. Efficiency in the Public Sector. K.J. Fox, ed., pp. 83-100. Boston, Massachusetts: Dordrecht and London.

Kirkley, J., C. Morrison Paul, and **D. Squires**. 2002. Capacity and capacity utilization in common-pool resource industries: definition, measurement, and a comparison of approaches. *Environmental and Resource Economics* 22(1-2): 71-97.

Ward, J., **T. Brainerd, S. Freese**, P. Mace, M. Milazzo, **D. Squires, J. Terry, E.M. Thunberg, M. Travis**, and **J. Walden**. 2001. Report of the National Task Force for Defining and Measuring Fishing Capacity. National Marine Fisheries Service, Office of Science and Technology, Silver Spring, Maryland.

**Ward, J., T. Brainerd**, M. Milazzo, **E. Thunberg, A. Kitts, J. Walden, M. Travis, J. Terry, T. Lee, D. Holland, J. Hastie, D. Squires, S. Herrick**, M. Hamilton, K. Brewster-Geisz, and R. Lent. 2001. Identifying Harvest Capacity and Overcapacity in Federally Managed Fisheries: A Preliminary and Qualitative Report. National Marine Fisheries Service, Offices of Science and Technology and Sustainable Fisheries, Silver Spring, Maryland, 118p.

**Walden, J.** and J. Kirkley. 2000. Measuring Technical Efficiency and Capacity in Fisheries by Data Envelopment Analysis Using the General Algebraic Modeling System (GAMS): A Workbook. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NE-160, 15p. Available at: [http://www.st.nmfs.noaa.gov/st5/commercial/capacity\\_toolbox/documents/gams\\_workbook.pdf](http://www.st.nmfs.noaa.gov/st5/commercial/capacity_toolbox/documents/gams_workbook.pdf).

### UNITED STATES | Habitat Economics Research

**Holland, D.**, J. Sanchirico, R. Johnston, and D. Joglekar. 2010. Economic Analysis for Ecosystem Based Management: Applications to Marine and Coastal Environments. pp. 240. Washington, DC: RFF Press.

### UNITED STATES | Ocean Policy & Management Research

**Queirolo, L.** In progress. When Rationalization Programs Leave Small Fishery-Dependent Communities Out, Innovative Management Structures May Offer a Way Back In. People and the Sea VIII: Geopolitics of the Oceans. Centre for Maritime Research, Universiteit van Amsterdam. Netherlands (2015).

**Seung, C.** 2014. Estimating effects of exogenous output changes: An application of multi-regional social accounting matrix (MRSAM) method to natural resource management. *Regional Science Policy and Practice* 6(2): 177-193.

**Crosson, S.** 2013. The impact of empowering scientific advisory committees to constrain catch limits in U.S. fisheries. *Science and Public Policy* 40(2): 261-273.

Fell, H. and **A. Haynie**. 2013. Spatial Competition with Changing Market Institutions. *Journal of Applied Econometrics* 28(4): 702-719.

### UNITED STATES | Other Marine Environmental Research

**Lipton, D., D. Lew, K. Wallmo**, P. Wiley, and A. Dvaskas. 2014. The Evolution of Non-Market Valuation of U.S. Coastal and Marine Resources. *Journal of Ocean and Coastal Economics* 2014 (6). DOI: <http://cbe.miiis.edu/joce/vol2014/iss1/6/>.



## Publications

---

**Marvasti, A.** 2013. The role of price expectations and legal uncertainties in ocean mineral, exploration activities. *Resources Policy* 38(1): 68-74.

**Lovell, S.** and L. Drake. 2009. Tiny stowaways: analyzing the economic benefits of a U.S. Environmental Protection Agency permit regulating ballast water discharges. *Environmental Management* 43(3): 546-555.

**Marvasti, A.** 2000. Resource Characteristics, Extraction Costs, and Discovery of a New Resource Base. *Environmental and Resource Economics* 17(4): 397-410.

### UNITED STATES | Protected Resources Economics Research

Johnston, R., **D. Jarvis**, **K. Wallmo**, and **D. Lew**. 2015. Characterizing Large Scale Spatial Pattern in Nonuse Willingness to Pay: An Application to Threatened and Endangered Marine Species. Forthcoming in *Land Economics*.

Pienaar, E., **D. Lew**, and **K. Wallmo**. 2015. The Importance of Survey Content: Testing for the Context Dependency of the New Ecological Paradigm Scale. *Social Science Research* 51: 338-349.

Pienaar, E., **D. Lew**, and **K. Wallmo**. 2013. Are Environmental Attitudes Influenced by Survey Context? An Investigation of the Context Dependency of the New Ecological Paradigm (NEP) Scale. *Social Science Research* 42(6): 1542-1554.

Magnusson, G., **K. Bisack**, and **H. Milliken**. 2012. The Cost-effectiveness of Gear Research Relative to a Closure: Pound Nets and Sea Turtles as an Example. Northeast Fisheries Science Center Reference Document 12-01.

**Wallmo, K.** and **D. Lew**. 2012. The Value of Recovering Threatened and Endangered Marine Species: A Multi-Species Choice Experiment. *Conservation Biology* 26(5): 830-839.

**Lew, D.** and **K. Wallmo**. 2011. External Tests of Embedding and Scope in Stated Preference Choice Experiments: An Application to Endangered Species Valuation. *Environmental and Resource Economics* 48(1): 1-23. DOI: 10.1007/s10640-010-9394-1.

**Wallmo, K.** and **D. Lew**. 2011. Valuing Improvements to Threatened and Endangered Marine Species: An Application of Stated Preference Choice Experiments. *Journal of Environmental Management* 92: 1793-1801.

**Tomberlin, D.** 2010. Endangered seabird habitat management as a partially observable Markov decision process. *Marine Resource Economics* 25(1): 93-104.

Dutton, P., H. Gjertsen, and **D. Squires**. 2010. Conservation of the Leatherback Sea Turtle in the Pacific, Chapter 14. Handbook of Marine Fisheries Conservation and Management. R.Q. Grafton, R. Hilborn, D. Squires, M. Tait, and M. Williams, eds., pp. 195-204. Oxford: Oxford University Press.

Janisse, C., **D. Squires**, J. Seminoff, and P. Dutton. 2010. Conservation Investments and Mitigation: The California Drift Gillnet Fishery and Pacific Sea Turtles, Chapter 17. Handbook of Marine Fisheries Conservation and Management. R. Grafton, R. Hilborn, D. Squires, M. Tait, and M. Williams, eds., pp. 231-240. Oxford: Oxford University Press.

Dutton, P. and **D. Squires**. 2008. Reconciling Biodiversity with Fishing: A Holistic Strategy for Pacific Sea Turtle Recovery. *Ocean Development and International Law* 39(2): 200-222.

**UNITED STATES | Recreational Fisheries Economics Research**

Larson, D., and **D. Lew**. 2014. The Opportunity Cost of Travel Time as a Noisy Wage Fraction. *American Journal of Agricultural Economics* 96(2): 420-437.

**Lovell, S.** and **D. Carter**. 2014. The use of sampling weights in regression models of recreational fishing-site choice. *Fishery Bulletin* 112: 243-252.

**Carter, D.** and **C. Liese**. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast U.S.A. *North American Journal of Fisheries Management* 32(4): 613-25.

Kuriyama, K., W. Hanemann, and **J. Hilger**. 2010. A latent segmentation approach to a Kuhn-Tucker model: An application to recreation demand. *Journal of Environmental Economics and Management* 60(3): 209-220.

**Steinback, S., K. Wallmo,** and **P. Clay**. 2009. Saltwater sport fishing in the U.S. for food and income: statistical estimates and policy implications. *Marine Policy* 33: 49-57.

**Gentner, B.** and **S. Steinback**. 2008. The Economic Contribution of Marine Angler Expenditures in the United States, 2006. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-94, p301. Available at: [https://www.st.nmfs.noaa.gov/st5/publication/AnglerExpenditureReport/AnglerExpendituresReport\\_ALL.pdf](https://www.st.nmfs.noaa.gov/st5/publication/AnglerExpenditureReport/AnglerExpendituresReport_ALL.pdf).

**Gentner, B.** 2007. Sensitivity of angler benefit estimates from a model of recreational demand to the definition of the substitute sites considered by the angler. *Fishery Bulletin* 105: 161-167.

Johnston, R., M. Ranson, E. Besedin, and **E. Helm**. 2006. What determines willingness to pay per fish? A meta-analysis of recreational fishing values. *Marine Resource Economics* 21(1): 1-32.

**Olson, J.** 2005. Re-placing the space of community: a story of cultural politics, policies, and fisheries management. *Anthropological Quarterly* 78(1): 233-254.

**Sepez, J.** 2005. Introduction to traditional environmental knowledge in federal natural resource management agencies. *Practicing Anthropology* 27(1): 1-48.

Leeworthy, V., J. Bowker, **J. Hospital,** and E. Stone. 2005. Projected Participation in Marine Recreation: 2005 & 2010. Silver Spring, Maryland: Special Projects, NOS, 164pp.

Kline J., R. Alig, **B. Garber-Yonts**. 2004. Forestland Social Values and Open Space Preservation. *Journal of Forestry* 102(8): 39-45.

**Steinback, S., B. Gentner,** and J. Castle. 2004. The Economic Importance of Marine Angler Expenditures in the U.S. NOAA Professional Paper NMFS 2, 169p.

**Sepez, J.** 2002. Treaty rights and the right to culture: Native American subsistence issues in U.S. law. *Cultural Dynamics* 14(2): 143-159.

**Gentner, B.** and **A. Lowther**. 2002. Evaluating marine sport fisheries in the U.S.A. Recreational Fisheries: Ecological, and Economic, and Social Evaluation. T.J. Pitcher and C.E. Hollingsworth, eds., pp. 186-206. Oxford: Blackwell Science.

## Publications

---

Hicks, R., A. Gautam, **D. Van Voorhees**, M. Osborn, and **B. Gentner**. 2000. Thalassorama: an introduction to the NMFS Marine Recreational Fisheries Statistics Survey with an emphasis on economic valuation. *Marine Resource Economics* 14(2): 375-385.

### UNITED STATES | Seafood Marketing & Trade Research

**Brinson, A., M-Y. Lee**, and **B. Rountree**. 2011. Direct marketing strategies: The rise of community supported fishery programs. *Marine Policy* 35: 542-548.

Kirkley, J., **J. Ward**, C. Moore, C. Hayes, B. Hooker, and **J. Walden**. 2008. International Trade in Seafood and Related Products: An Assessment of U.S. trade Patterns. NOAA, NMFS, Office of Constituent Services.

### UNITED STATES | Sociocultural Fisheries Research

**Clay, P.** and **A. Himes-Cornell**. 2014. Bringing Social Science into U.S. National Climate Policy. *Anthropology News*, April 2014.

**Felthoven, R.** and **S. Kasperski**. 2013. Socioeconomic Indicators for United States Fisheries and Fishing Communities. *PICES Press* 21(2): 20-23.

**Jepson, M.** and **L. Colburn**. 2013. Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-129, 64p.

**Colburn, L.** and **M. Jepson**. 2012. Social Indicators of Gentrification Pressure in Fishing Communities: A Context for Social Impact Assessment. *Coastal Management* 40(3): 289-300.

**Abbott-Jamieson, S.** 2010. Voices from the Fisheries projects combine oral history interviews and place-based education to create learning opportunities for students. *Current: Journal of Marine Education* 26(1): 20-24.

**Abbott-Jamieson, S.** and **P. Clay**. 2010. The Long Voyage to Including Sociocultural Analysis in NOAA's National Marine Fisheries Service. *Marine Fisheries Review* 72(2):14-33.

**Clay, P.** and **J. Olson**. 2008. Defining fishing communities: vulnerability and the Magnuson-Stevens Fishery Conservation and Management Act. *Human Ecology Review* 15(2): 143-160.

**Ingles, P.** and **J. Sepez**. 2007. Anthropology's contributions to fisheries management. *National Association of Practicing Anthropologists Bulletin* 28(1): 1-12.

**Abbott-Jamieson, S.** 2007. Using oral history techniques in a NOAA Fisheries Service (NMFS) education and outreach project: pressing local fisheries knowledge, linking generations, and improving environmental literacy. *National Association of Practicing Anthropologists Bulletin* 28(1): 136-147.

**Clay, P.** and **J. Olson**. 2007. Defining fishing communities: issues in theory and practice. *National Association of Practicing Anthropologists Bulletin* 28(1): 27-42.

**Colburn, L., S. Abbott-Jamieson**, and **P. Clay**. 2006. Anthropological applications in the management of feder-

ally managed fisheries: context, institutional history, and prospectus. *Human Organization* 65(3): 231-239.

**Allen, S.** and A. Gough. 2006. Monitoring environmental justice impacts: Vietnamese-American longline fishermen adapt to the Hawaii swordfish fishery closure. *Human Organization* 65(3): 319-328.

### UNITED STATES | Spatial Analysis & Marine Protected Areas Research

Meiyappan, P., **M. Dalton**, B. O'Neill, and A. Jain. 2014. Spatial modeling of agricultural land use change at global scale. *Ecological Modelling* 291: 152-174.

Mason, J., **R. Kosaka**, **A. Mamula**, and **C. Speir**. 2012. Effort changes around a marine reserve: The case of the California Rockfish Conservation Area. *Marine Policy* 36(5): 1054-1063.

Schnier, K. and **R. Felthoven**. 2011. Accounting for Spatial Heterogeneity and Autocorrelation in Spatial Discrete Choice Models: Implications for Behavioral Predictions. *Land Economics* 3: 382-402.

**Wallmo, K.** and **S. Edwards**. 2007. Estimating Public Values for Marine Protected Areas in the Northeast: A Latent Class Modeling Approach. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-84, 72p. Available at <http://spo.nwr.noaa.gov/tm/tm84.pdf>.

**Holland, D.**, J. Sanchirico, **R. Curtis**, and R. Hicks. 2004. An introduction to spatial modeling in fisheries economics. *Marine Resource Economics* 19(1): 1-6.

**Curtis, R.** and K. McConnell. 2004. Incorporating information and expectations in fishermen's spatial decisions. *Marine Resource Economics* 19: 131-143.

### UNITED STATES | U.S. Territories & International Fisheries Research

Anderson, J., C. Anderson, J. Chu, J. Meredith, F. Asche, G. Sylvia, M. Smith, D. Anggraeni, R. Arthur, A. Guttormsen, M. Schmid, W. Akpalu, F. Alfredsson, H. Eggert, J. Flores, M. Freeman, **D. Holland**, G. Knapp, M. Kobayashi, S. Larkin, K. MacLauchlin, K. Schnier, M. Soboil, S. Tveteras, H. Uchida, D. Valderrama, and T. Ward. 2015. The Fishery Performance Indicators: A Management Tool for the Triple Bottom Line. Forthcoming in *PLOS One*.

Woods, P., C. Bouchard, **D. Holland**, A. Punt, G. and Marteinsdóttir. 2015. Catch-quota balancing mechanisms in the Icelandic multi-species demersal fishery: are all species equal? *Marine Policy* 55: 1-10.

Woods, P., **D. Holland**, A. Punt, and G. Marteinsdóttir. 2015. How a catch-quota balancing system can go wrong: an evaluation of the species quota transformation provisions in the Icelandic multi-species demersal fishery. *ICES Journal of Marine Science*. DOI: 10.1093/icesjms/fsv001.

Chan, V., **R. Clarke**, and **D. Squires**. 2014. Full Retention in Tuna Fisheries: Benefits, Costs and Unintended Consequences. *Marine Policy* 45: 213-221.

Gjertsen, H., **D. Squires**, **P. Dutton**, and T. Eguchi. 2014. Cost-Effectiveness of Alternative Conservation Strategies: An Application to the Pacific Leatherback Turtle. *Conservation Biology* 28(1): 140-149.

Kronbak, L., **D. Squires**, and N. Vestergaard. 2014. Recent Developments in Fisheries Economics Research. *International Review of Environmental and Resource Economics* 7(1): 67-108.

Mengerink, K., C. Van Dover, M. Baker, E. Escobar-Briones, K. Gjerde, J. Koslow, E. Ramirez-Llodara, A. Lara-Lopez, **D. Squires**, T. Sutton, A. Sweetman, and L. Levin. 2014. A Call for Deep Ocean Stewardship. *Science* 344: 696-698.

Smith, M., F. Asch, L. Benneer, E. Havice, A. Read, and **D. Squires**. 2014. Will a Catch Share for Whales Improve Social Welfare? *Ecological Applications* 24(1): 15-23.

**Squires, D.** 2014. Biodiversity Conservation in Asia. *Asia and the Pacific Policy Studies* 1(1): 144-159.

**Squires, D.** and M. Maunder. 2014. Synthesis of Workshop Results: Pros and cons of effort based management. Chapter 2 in **Squires, D.**, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, **S. Herrick**, R. Hannesson, I. del Valle, and P. Andersen, eds., *Effort Rights in Fisheries Management: General principles and case studies from around the world*. FAO Fisheries and Aquaculture Proceedings P34. Rome: Food and Agriculture Organization of the United Nations.

**Squires, D.**, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, **S. Herrick**, R. Hannesson, I. del Valle, and P. Andersen. 2014. Effort Rights in Fisheries Management: General principles and case studies from around the world. Chapter 1 in **Squires, D.**, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, **S. Herrick**, R. Hannesson, I. del Valle, and P. Andersen, eds., *Effort Rights in Fisheries Management: General principles and case studies from around the world*. FAO Fisheries and Aquaculture Proceedings P34. Rome: Food and Agriculture Organization of the United Nations.

**Squires, D.**, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, **S. Herrick**, R. Hannesson, I. del Valle, and P. Anderson, eds., 2014. *Effort Rights in Fisheries Management: General Principles and Case Studies from Around the World*. 2014. FAO Fisheries and Aquaculture Proceedings P34. Rome: Food and Agriculture Organization of the United Nations.

**Squires, D.**, M. Maunder, **S. Herrick**, M. Helvey, and **R. Clarke**. 2014. Effort Rights-Based Management. 2014. Chapter 3 in **Squires, D.**, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, **S. Herrick**, R. Hannesson, I. del Valle, and P. Andersen, eds., *Effort Rights in Fisheries Management: General principles and case studies from around the world*. FAO Fisheries and Aquaculture Proceedings P34. Rome: Food and Agriculture Organization of the United Nations.

**Squires, D.**, V. Chan, and **R. Clarke**. 2014. Subsidies, Public Goods, and External Benefits in Fisheries. *Marine Policy* 45: 222-227

Grafton, R. and **D. Squires**. 2013. Theory and Practice of Water and Fisheries. In J. Shogren, ed., *Encyclopaedia of Energy, Natural Resource, and Environmental Economics*. Elsevier Publishing, Vol. 2, pp. 31-38.

Guillotreau, P., **D. Squires**, J. Sun, and G. Compean. 2013. Local, Regional and Global Markets: What Drives the Fisheries? In A. Hobday, R. Brill, L. Dagorn, eds., *Tunas and Their Fisheries: Safeguarding Sustainability in the 21st Century*, Wiley-Blackwell.

**Squires, D.** and N. Vestergaard. 2013. Technical Change and the Commons. *Review of Economics and Statistics* 95(5): 1769-1787.

**Squires, D.** and N. Vestergaard. 2013. Technical Change in Fisheries. *Marine Policy* 42: 286-292.



**Squires, D.**, R. Allen, and V. Restrepo. 2013. Rights-Based Management in International Tuna Fisheries. FAO Fisheries and Aquaculture Technical Paper No. 571. Rome: Food and Agriculture Organization of the United Nations.

Wolff, F-C., P. Guillotreau, and **D. Squires**. 2013. The Firm's Management in Production: Management, Firm, and Time Effects in an Indian Ocean Tuna fishery. *American Journal of Agricultural Economics* 95(3): 547-567.

Grafton, R. and **D. Squires**. 2012. Theory and Practice of Fisheries and Water Economics, in J. Shogren, ed., Encyclopedia of Energy, Natural Resources, and Environmental Economics. Elsevier.

Valdes-Pizzini, M. and **J. Agar**, 2012. Papa-dem (puertorriquenos), crucenos y britanicos (garrets): el etnopaisaje de la diaspora de los pescadores en la Isla de Santa Cruz, en las Islas Virgenes Estadounidenses (IVE). *Op. Cit.: Revista del Centro de Investigaciones Historicas* 20: 143-179.

Dalzell, P., **P. Dutton**, K. Simonds, and **D. Squires**. 2011. Introduction to the Conservation of Pacific Sea Turtles, Chapter 1 in **P. Dutton, D. Squires**, and M. Ahmed, eds., 2010. Conservation of Pacific Sea Turtles. Honolulu: University of Hawaii Press.

**Dutton, P.** and **D. Squires**. 2011. A Holistic Strategy for Pacific Sea Turtle Conservation, Chapter 3 in P. Dutton, D. Squires, and M. Ahmed, eds., 2011. Conservation of Pacific Sea Turtles. Honolulu: University of Hawaii Press.

**Dutton, P., D. Squires**, and M. Ahmed, eds., 2011. Conservation of Pacific Sea Turtles. Honolulu: University of Hawaii Press.

Yeo, B., **D. Squires**, K. Ibrahim, H. Gjertsen, S. Kamil, T. Groves, M. Hong, and C. Tan. 2011. Can Coastal Fisheries Bear the Cost of Sea Turtle Conservation? Evidence from the East Coast of Peninsular Malaysia, Chapter 16 in **P. Dutton, D. Squires**, and M. Ahmed, eds., 2011. Conservation of Pacific Sea Turtles. Honolulu: University of Hawaii Press.

**Squires, D.** 2010. Review of Bjorndal et al., Advances in Fisheries Economics, in *Fish and Fisheries*.

Joseph, J., **D. Squires**, W. Bayliff, and T. Groves. 2010. Addressing the Problem of Excess Fishing Capacity in Tuna Fisheries, Chapter 2. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires**, eds., pp. 11-38. Wiley-Blackwell.

**Squires, D.**, J. Joseph, and T. Groves. 2010. Buybacks in Transnational Fisheries, Chapter 11. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires** eds., pp. 181-194. Wiley-Blackwell.

Hallman, B., S. Barrett, R. Clarke, J. Joseph, and **D. Squires**. 2010. Limited Access in Transnational Tuna Fisheries, Chapter 12. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires** eds., pp. 195-214. Wiley-Blackwell.

Gjertsen, H., M. Hall, and **D. Squires**. 2010. Incentives to Address Bycatch Issues, Chapter 15. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires**, eds., pp. 225-250. Wiley-Blackwell.

Allen, R., J. Joseph, **D. Squires**, and E. Stryjewski. 2010. Introduction, Chapter 1. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires**, eds., pp. 3-10. Wiley-Blackwell.

## Publications

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**Squires, D.** 2010. Property and use Rights in Fisheries, Chapter 3. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires**, eds., pp. 39-64. Wiley-Blackwell.

Allen, R., W. Bayliff, J. Joseph, and **D. Squires**. 2010. Rights-Based Management in Transnational Tuna Fisheries, Chapter 4. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires** eds., pp. 65-86. Wiley-Blackwell.

Allen, R., W. Bayliff, J. Joseph, and **D. Squires**. 2010. The Benefits and Costs of Transformation of Open Access on the High Seas, Chapter 5. Conservation and Management of Transnational Tuna Fisheries. R. Allen, J. A. Joseph, and **D. Squires**, eds., pp. 87-98. Wiley-Blackwell.

Allen, J., J. Joseph, and **D. Squires**. 2010. Managing World Tuna Fisheries with Emphasis on Rights-Based Management, Chapter 55. Handbook of Marine Fisheries Conservation and Management. R.Q. Grafton, R. Hilborn, **D. Squires**, M. Tait, and M. Williams, eds., pp. 698-712. Oxford: Oxford University Press.

Hannesson, R., K. Salvanes, and **D. Squires**. 2010. The Lofoten Fishery over Hundred Years. *Land Economics* 86(4): 746-765.

Allen, R., J. Joseph, and **D. Squires**, eds. 2010. Conservation and Management of Pacific Tunas. Ames, Iowa: Wiley-Blackwell Publishing, 392p.

**Brinson, A.**, D. Die, P. Bannerman, and Y. Diatta. 2009. Socioeconomic performance of West African fleets that target Atlantic billfish. *Fisheries Research* 99: 55-62.

Jeon, Y., R. Allen, J. Joseph, T. Groves, and **D. Squires**. 2009. Rights-Based Transnational Fishery Management and Its Implementation to Korean Tuna Fishery. *Korean Journal of Law and Economics* 6(2): 223-254.

**Liese, C.** 2009. Fishery Management for Artisanal Reef Fisheries in Developing Countries: A Holistic Economic Approach. Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 2008(July): 1116-1120.

**Squires, D.**, C. Reid, and Y. Jeon. 2008. Productivity growth in natural resource industries and the environment: an application to the Korean tuna purse-seine fleet in the Pacific. *International Economic Journal* 22(1): 81-94.

Jeon, Y., C. Reid, and **D. Squires**. 2008. Is there a global market for tuna? Policy implications for tropical tuna fisheries. *Ocean Development and International Law* 39(1): 32-50.

**Liese, C.**, M. Smith, and R. Kramer. 2007. Open access in a spatially delineated artisanal fishery: the case of Minahasa, Indonesia. *Environment and Development Economics* 12(1): 123-143.

Ahmed, M., P. Boonchuwongse, W. Dechboon, and **D. Squires**. 2007. Overfishing in the Gulf of Thailand: policy challenges and bioeconomic analysis. *Environment and Development Economics* 12(1): 145-172.

**Miller, M.**, **D. McClellan**, J. Wiener, and **B. Stoffle**. 2007. Comment: apparent rapid fisheries escalation at a remote Caribbean island. *Environmental Conservation* 34(2): 1-3.

**Squires, D.**, J. Kirkley, J. Joseph, T. Groves, and C. Reid. 2007. Relating Estimates of Fishing Capacity Obtained from Data Envelopment Analysis to Traditional Measures of Fishing Capacity. *FAO Fisheries Proceeding 8: Methodological Workshop on the Management of Tuna Fishing Capacity*, W.H. Bayliff and J. Majkowski, eds., pp. 141-152. Rome: Food and Agriculture Organization of the United Nations.

**Squires, D.**, J. Joseph, and T. Groves. 2007. Buybacks in Fisheries. *FAO Fisheries Proceeding 8: Methodological Workshop on the Management of Tuna Fishing Capacity*, W.H. Bayliff and J. Majkowski, eds., pp. 193-218. Rome: Food and Agriculture Organization of the United Nations.

Reid, C. and **D. Squires**. 2007. Measuring Fishing Capacity in Tuna Fisheries: Data Envelopment Analysis, Industry Surveys and Data Collection. *FAO Fisheries Proceeding 8: Methodological Workshop on the Management of Tuna Fishing Capacity*, W.H. Bayliff and J. Majkowski, eds., pp. 87-98. Rome: Food and Agriculture Organization of the United Nations.

**Squires, D.**, T. Groves, J. Kirkley, C. Reid, and J. Joseph. 2007. Relating DEA Estimates of Capacity Utilization to Traditional Measures of Fishing Capacity. *FAO Fisheries Proceeding 8: Methodological Workshop on the Management of Tuna Fishing Capacity*, W.H. Bayliff and J. Majkowski, eds., pp. 87-98. Rome: Food and Agriculture Organization of the United Nations.

Scott, T., J. Kirkley, R. Rinaldo, and **D. Squires**. 2007. Assessing Capacity in the U.S. Northwest Atlantic Pelagic Longline Fishery for Highly Migratory Species with Undesirable Outputs. *FAO Fisheries Proceeding 8: Methodological Workshop on the Management of Tuna Fishing Capacity*, W.H. Bayliff and J. Majkowski, eds., pp. 99-106. Rome: Food and Agriculture Organization of the United Nations.

Joseph, J., **D. Squires**, W. Bayliff, and T. Groves. 2007. Requirements and Alternatives for the Limitation of Fishing Capacity in Tuna Purse-Seine Fleets. *FAO Fisheries Proceeding 8: Methodological Workshop on the Management of Tuna Fishing Capacity*, W.H. Bayliff and J. Majkowski, eds., pp.153-192. Rome: Food and Agriculture Organization of the United Nations.

**Stoffle, B.** and R. Stoffle. 2007. At the sea's edge: elders and children in the littorals of Barbados and the Bahamas. *Human Ecology* 35(5): 547-558.

Yeo, B., **D. Squires**, K. Ibrahim, H. Gjertsen, S. Syed Mohd Kamil, R. Zulkifi, T. Groves, M. Hong, and C. Tan. 2007. Fisher Profiles and Perceptions of Sea Turtle-Fishery Interactions: Case Study of East Coast Peninsular Malaysia. *The WorldFish Center Discussion Series No. 6*, 69p. Penang, Malaysia: The WorldFish Center.

Jeon, Y., O. Ishak, K. Kuperan, **D. Squires**, and I. Susilowati. 2006. Developing country fisheries and technical efficiency: the Java Sea purse seine fishery. *Applied Economics* 38(13): 1541-1552.

**Bisack, K.D.** and J. Sutinen. 2006. A New Zealand ITQ Fishery With an In-Season Stock Externality. *Marine Resource Economics* 21(3): 231-249.

Reid, C., J. Kirkley, **D. Squires**, and J. Ye. 2005. Analysis of the Fishing Capacity of the Global Tuna Purse Seine Fleet. *Management of Tuna Fishing Capacity: Conservation And Socio Economics* 2: 117-156.

Vestergaard, N., **D. Squires**, F. Jensen, and J. Andersen. 2003. Technical efficiency of the Danish trawl fleet: are the industrial vessels better than others? *Danish Journal of Economics* 141: 225-242.

**Squires, D.**, O. Ishak, Y. Jeon, J. Kirkley, K. Kuperan, and I. Susilowati. 2003. Excess capacity and sustainable development in Java Sea fisheries. *Environment and Development Economics* 8(1): 105-127.

## Publications

---

**Squires, D.**, R. Grafton, F. Alam, and O. Ishak. 2003. Technical efficiency of the Malaysian artisanal gill net fishery. *Environment and Development Economics* 8: 481-504.

Vestergaard, N., **D. Squires**, and J. Kirkley. 2003. Measures of Capacity in a Multispecies Danish Fishery. FAO Fisheries Technical Paper 445: Measuring capacity in fisheries, S. Pascoe and D. Greboval, eds., pp. 169-180. Rome: Food and Agriculture Organization of the United Nations of the United Nations.

Kirkley, J., **D. Squires**, M. Alam, and O. Ishak. 2003. Capacity and Offshore Fisheries Development: The Malaysian Purse Seine Fishery. FAO Fisheries Technical Paper 445: Measuring capacity in fisheries, S. Pascoe and D. Greboval, eds., pp. 193-212. Rome: Food and Agriculture Organization of the United Nations of the United Nations.

Kirkley, J., R. Fre, S. Grosskopf, K. McConnell, **D. Squires**, and I. Strand. 2003. Assessing Capacity and Capacity Utilization in Fisheries When Data Are Limited. FAO Fisheries Technical Paper 445: Measuring capacity in fisheries, S. Pascoe and D. Greboval, eds., pp. 213-232. Rome: Food and Agriculture Organization of the United Nations of the United Nations.

**Squires, D.**, Y. Jeon, R. Grafton, and J. Kirkley. 2003. Tradable Property Rights and Overcapacity: Organization of the United Nations, 181-192. FAO Technical Paper 445: Measuring capacity in fisheries, S. Pascoe and D. Greboval, eds., pp. 181-192. Rome: Food and Agriculture Organization of the United Nations of the United Nations.

Vestergaard, N., **D. Squires**, and J. Kirkley. 2003. Measuring capacity and capacity utilization in fisheries: the case of the Danish gill-net fleet. *Fisheries Research* 60: 357-368.

Alam, F., O. Ishak, and **D. Squires**. 2002. Sustainable fisheries development in the tropics: trawlers and license limitation in Malaysia. *Applied Economics* 34(3): 325-337.

Kuperan, K., O. Ishak, Y. Jeon, J. Kirkley, **D. Squires**, and I. Susilowati. 2002. A fishing capacity and fishing skill in developing country fisheries: the Kedah, Malaysia trawl fishery. *Marine Resource Economics* 16(4): 293-313.

Dupont, D., R. Grafton, J. Kirkley, and **D. Squires**. 2002. Capacity utilization measures and excess capacity in multi-product privatized fisheries. *Resource and Energy Economics* 24(3): 193-210.

Kremen, C., J. Niles, **M. Dalton**, G. Daily, P. Ehrlich, J. Fay, D. Grewal, and R. Guillery. 2000. Economics of rain forest conservation across scales. *Science* 288(5472): 1828-1832.

# North Pacific

## NORTH PACIFIC | Climate Change Research

Punt, A., D. Poljak, **M. Dalton**, and R. Foy. 2014. Evaluating the impact of ocean acidification on fishery yields and profits: The example of red king crab in Bristol Bay. *Ecological Modelling* 285: 39-53.

**Haynie, A.** and **L. Pfeiffer**. 2013. Climatic and economic drivers of the Bering Sea pollock (*Theragra chalcogramma*) fishery: Implications for the future. *Canadian Journal of Aquatic and Fisheries Science* 70(6): 841-853. 10.1139/cjfas-2012-0265.

C. Carothers, K. Criddle, **C. Chambers**, P. Cullenberg, J. Fall, **A. Himes-Cornell**, J. Johnsen, N. Kimball, C. Menzies, and E. Springer (eds.). 2012. Fishing People of the North: Cultures, Economies, and Management Responding to Change. Alaska Sea Grant, University of Alaska—Fairbanks.

### **NORTH PACIFIC | Coastal & Marine Recreation Research**

Wolf, P., R. Gimblett, L. Kennedy, R. Itami, and **B. Garber-Yonts**. 2008. Monitoring and Simulating Recreation and Subsistence use in Prince William Sound, Alaska. Monitoring, Simulation and Management of Visitor Landscapes, R. Gimblett and H. Skov-Petersen, eds., Tucson, AZ: University of Arizona Press.

### **NORTH PACIFIC | Commercial Fisheries Economics Research**

Abbott, J., **A. Haynie**, and M. Reimer. 2015. Hidden Flexibility: Institutions, Incentives and the Margins of Selectivity in Fishing. *Land Economics* 91(1): 169–195.

Call, I. and **D. Lew**. 2015. Tradable Permit Programs: What are the Lessons for the New Alaska Halibut Catch Sharing Plan? *Marine Policy* 52: 125-137.

**Fissel, B.** 2015. Methods for the Alaska Groundfish First-Wholesale Price Projections. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-[NTIS # pending].

**Seung, C.** 2015. Untangling Economic Impacts for Alaska Fisheries: A Structural Path Analysis. Forthcoming in *Marine Resource Economics*.

Abbott, J., **A. Haynie**, and M. Reimer. 2014. Targeting Ability Under Rights-Based Management: The Amendment 80 Bering Sea/Aleutian Islands Groundfish Fishery. Forthcoming in *Land Economics*.

**Felthoven, R., J. Lee**, and K. Schnier. 2014. Cooperative Formation and Peer Effects in Fisheries. *Marine Resource Economics* 29(2): 133-156.

**Fissel, B.** 2014. Economic Indices for the North Pacific Groundfish Fisheries: Calculation and Visualization. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-279, 59p.

**Haynie, A.** 2014. Estimating the Value of a Fishing Right: An Analysis of Changing Usage and Value in the Western Alaska Community Development Quota (CDQ) Program. *Fisheries Science* 80(2): 181-191.

Peterson, M., F. Mueter, K. Criddle, and **A. Haynie**. 2014. Costs incurred by Alaskan sablefish, Pacific halibut and Greenland turbot longliners due to killer whale depredation. *PLOS ONE* 9(2): e88906. DOI: 10.1371/journal.pone.0088906.

**Seung, C.** 2014. Measuring Spillover Effects of Shocks to Alaska Economy: An Interregional Social Accounting Matrix (IRSAM) Model Approach. *Economic Systems Research* 26(2): 224-238. DOI: 10.1080/09535314.2013.803039.

**Seung, C., E. Waters**, and **J. Leonard**. 2014. Economic Impacts of Alaska Fisheries: A Multiregional Computable General Equilibrium (MRCGE) Analysis. *Review of Urban and Regional Development Studies*. DOI: 10.1111/rurd.12026.

Torres, M. and **R. Felthoven**. 2014. Productivity Growth and Product Choice in Catch Share Fisheries: the Case of the Alaska Pollock. *Marine Policy* 50, Part A: 280-289. DOI: 10.1016/j.marpol.2014.07.008.



## Publications

---

Waters, E., **C. Seung**, M. Hartley, and **M. Dalton**. 2014. Measuring the Multiregional Economic Contribution of an Alaska Fishing Fleet with Linkages to International Markets. *Marine Policy* 50, Part A: 238-248.

**Kasperski, S.** and **D. Holland**. 2013. Income Diversification and Risk for Fishermen. *Proceedings of the National Academies of Science* 110(6): 2076-2081.

**Seung, C.** and E. Waters. 2013. Calculating Impacts of Exogenous Output Changes: Application of a Social Accounting Matrix (SAM) Model to Alaska Fisheries. *The Annals of Regional Science* 51(2): 553-573.

**Pfeiffer, L.** and **A. Haynie**. 2012. The Effect of Decreasing Seasonal Sea-Ice Cover on the Winter Bering Sea Pollock Fishery. *ICES Journal of Marine Science*. DOI: 10.1093/icesjms/fss097.

Punt, A., M. Siddeek, **B. Garber-Yonts**, **M. Dalton**, L. Rugolo, D. Stram, B. Turnock, and J. Zheng. 2012. Evaluating the impact of buffers to account for scientific uncertainty when setting TACs: Application to red king crab in Bristol Bay, Alaska. *ICES Journal of Marine Science* 69(4): 624-634. DOI: 10.1093/icesjms/fss047.

**Seung, C.** and C. Zhang. 2012. Developing Socioeconomic Indicators for Fisheries off Alaska: a Multi-Attribute Utility Function Approach. *Fisheries Research* 112: 117-126.

Lazrus, H., **J. Sepez**, **R. Felthoven**, and **J. Lee**. 2011. Post-Rationalization Restructuring of Commercial Crew Member Opportunities in Bering Sea and Aleutian Island Crab Fisheries. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-217.

Morrison Paul, C., **R. Felthoven**, and M. Torres. 2010. Economic Performance in Fisheries: Modeling, Measurement and Management. *Australian Journal of Agricultural and Resource Economics* 54(3): 343-360.

**Seung, C.** and E. Waters. 2010. Evaluating Supply-Side and Demand-Side Shocks for Fisheries: a Computable General Equilibrium (CGE) Model for Alaska. *Economic Systems Research* 22(1): 87-109.

**Seung, C.** 2010. Estimating Economic Information for Fisheries using Unequal Probability Sampling. *Fisheries Research* 105(2): 134-140.

**Haynie, A.** and D. Layton. 2010. An Expected Profit Model for Monetizing Fishing Location Choices. *Journal of Environmental Economics and Management* 59(2): 165-176.

Waters, E. and **C. Seung**. 2010. Impacts of Recent Shocks to Alaska Fisheries: A Computable General Equilibrium (CGE) Model Analysis. *Marine Resource Economics* 25(2): 155-183.

Abbott, J., **B. Garber-Yonts**, and J. Wilen. 2010. Employment and Renumeration Effects of IFQs in the Bering Sea/Aleutian Islands Crab Fisheries. *Marine Resource Economics* 25(4): 33-354.

**Haynie, A.**, R. Hicks, and K. Schnier. 2009. Common Property, Information, and Cooperation: Commercial Fishing in the Bering Sea. *Ecological Economics* 69(2): 406-413.

Morrison Paul, C., M. Torres, and **R. Felthoven**. 2009. Fishing Revenue, Productivity, and Product Choice in the Alaskan Pollock Fishery. *Environmental and Resource Economics* 44: 457-474.

**Seung, C.** and E. Waters. 2009. Measuring the Economic Linkage of Alaska Fisheries: A Supply-Driven Social Accounting Matrix (SDSAM) Approach. *Fisheries Research* 97: 17-23.

**Felthoven, R.**, C. Morrison Paul, and M. Torres. 2009. Measuring Productivity Change and its Components for Fisheries: The Case of the Alaskan Pollock Fishery, 1994-2002. *Natural Resource Modeling* 22(1): 105-136.

Layton, D., and **S. Lee**. 2006. Embracing model uncertainty: strategies for response pooling and model averaging. *Environmental and Resource Economics* 34(1): 51-85.

**Felthoven, R.** and C. Morrison Paul. 2004. Multi-output, non-frontier primal measures of capacity and capacity utilization. *American Journal of Agricultural Economics* 86(3): 615-629.

**Felthoven, R.**, T. Hiatt, and **J. Terry**. 2004. Measuring fishing capacity and utilization with commonly available data: an application to Alaskan fisheries. *Marine Fisheries Review* 64(4): 29-39.

**Felthoven, R.**, C. Morrison Paul, V. Ball, and R. Nehring. 2002. Costs of Production and Environmental Risk: Resource-Factor Substitution in U.S. Agriculture. *Agricultural Productivity: Measurement and Sources of Growth*, V.E. Ball and G.W. Norton, eds., pp. 293-310. Boston: Kluwer Academic Press.

**Felthoven, R.** 2002. Effects of the American Fisheries Act on Capacity, Utilization and Technical Efficiency. *Marine Resource Economics* 17(3): 181-205.

**Felthoven, R.**, T. Hiatt, and **J. Terry**. 2002. Quantitative Estimates of Fishing Capacity, Capacity Utilization, and Fishery Utilization for Alaskan Commercial Fisheries, 2001. National Marine Fisheries Service, Alaska Fisheries Science Center.

### **NORTH PACIFIC | Ocean Policy & Management Research**

Sanchirico, J., **D. Lew**, **A. Haynie**, D. Kling, and D. Layton. 2013. Conservation Values in Marine Ecosystem-Based Management. *Marine Policy* 38: 523-530.

### **NORTH PACIFIC | Other Marine Environmental Research**

Johnson, K., P. Bettinger, J. Kline, T. Spies, M. Lennette, G. Lettman, **B. Garber-Yonts**, and T. Larsen. 2006. Simulating Forest Structure, Timber Production, and Socio-Economic Effects in a Multi-Owner Province. *Ecological Applications* 17(1): 34-47.

Spies, T., K. Johnson, K. Burnett, J. Ohmann, B. McComb, G. Reeves, P. Bettinger, J. Kline, and **B. Garber-Yonts**. 2006. Cumulative Ecological and Socio-Economic Effects of Forest Policies in Coastal Oregon. *Ecological Applications* 17(1): 5-17.

**Garber-Yonts, B.** 2004. The Economics of Amenities and Migration in the Pacific Northwest: Review of Selected Literature with Implications for National Forest Management. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR. General Technical Report PNW-GTR-617. 48p.

Morrison Paul, C., V. Ball, **R. Felthoven**, A. Grube, and R. Nehring. 2002. Effective Costs and Chemicals use in U.S. Agricultural Production: Benefits of using the Environment as a Free Input. *American Journal of Agricultural Economics* 84(4): 897-901.

## Publications

---

### NORTH PACIFIC | Protected Resources Economics Research

**Lew, D.**, D. Layton and R. Rowe. 2010. Valuing Enhancements to Endangered Species Protection Under Alternative Baseline Futures: The Case of the Steller Sea Lion. *Marine Resource Economics* 25(2): 133-54.

### NORTH PACIFIC | Recreational Fisheries Economics Research

**Lew, D.**, G. Sampson, **A. Himes-Cornell**, and **J. Lee**. 2015. Costs, Earnings, and Employment in the Alaska Saltwater Sport Fishing Charter Sector, 2011-2013. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-2738, 134p.

**Lew, D.** and **C. Seung**. 2014. On the Statistical Significance of Regional Economic Impacts from Changes in Recreational Fishing Harvest Limits in Southern Alaska. *Marine Resource Economics* 29(3): 241-257.

**Lew, D.**, and D. Larson. 2014. Is a Fish in Hand Worth Two in the Sea? Evidence from a Stated Preference Study. *Fisheries Research* 157: 124-135.

Larson, D. and **D. Lew**. 2013. How Do Harvest Rates Affect Angler Trip Patterns? *Marine Resource Economics* 28(2): 155-173.

**Seung, C.** and **D. Lew**. 2013. Accounting for Variation in Exogenous Shocks in Economic Impact Modeling. *The Annals of Regional Science*. DOI: 10.1007/s00168-012-0550-0.

**Lew, D.** and D. Larson. 2012. Economic Values for Saltwater Sport Fishing in Alaska: A Stated Preference Analysis. *North American Journal of Fisheries Management* 32(4): 745-759.

**Lew, D.** and D. Larson. 2011. A Repeated Mixed Logit Approach to Valuing a Local Sport Fishery: The Case of Southeast Alaska Salmon. *Land Economics* 87: 712-729.

**Lew, D.** and **C. Seung**. 2010. The Economic Impact Of Saltwater Sportfishing Harvest Restrictions In Alaska: An Empirical Analysis Of Non-Resident Anglers. *North American Journal Of Fisheries Management* 30: 538-551.

**Lew, D.**, **J. Lee**, and D. Larson. 2010. Saltwater Sport Fishing In Alaska: A Summary and Description of the Alaska Saltwater Sport Fishing Economic Survey, 2007. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-214, 229p.

### NORTH PACIFIC | Seafood Marketing & Trade Research

**Carothers, C.**, **D. Lew**, and **J. Sepez**. 2010. Fishing Rights and Small Communities: Alaska Halibut IFQ Transfer Patterns. *Ocean and Coastal Management* 53(9): 518-523.

**Seung, C.** 2008. Estimating dynamic impacts of seafood industry in Alaska. *Marine Resource Economics* 23(1): 87-104.

**Seung, C.** and E. Waters. 2006. The role of the Alaska seafood industry: a social accounting matrix (SAM) model approach to economic base analysis. *The Annals of Regional Science* 40(2): 335-360.

### NORTH PACIFIC | Sociocultural Fisheries Research

**Himes-Cornell, A.** and K. Hoelting. 2015. Resilience strategies in the face of short and long term change: Outmigration and fisheries regulation in Alaska fishing communities. *Ecology and Society* 20(2): 9.

**Himes-Cornell, A.** and **S. Kasperski.** 2015. Using indicators to assess the vulnerability and resiliency of Alaskan fishing communities to climate change. *Fisheries Research* 162: 1-11.

**Lew, D., A. Himes-Cornell,** and **J. Lee.** 2015. Weighting and Data Imputation for Missing Data in Fisheries Economic and Social Survey. *Marine Resource Economics* 30(2): 219-230.

**Himes-Cornell, A.** and K. Kent 2014. Involving Fishing Communities in Data Collection: A Summary and Description of the Alaska Community Survey, 2011. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC284, 171p.

**Himes-Cornell, A.** and K. Kent. 2014. Involving Fishing Communities in Data Collection: A Summary and Description of the Alaska Community Survey, 2010. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC280, 170p.

**Kasperski, S.** and **A. Himes-Cornell.** 2014. Indicators of Fishing Engagement and Reliance of Alaskan Fishing Communities. AFSC Quarterly Report Feature (January-February-March 2014), 7p.

**Package-Ward, C.** and **A. Himes-Cornell.** 2014. Utilizing oral histories to understand the social networks of Oregon fishermen in Alaska. *Human Organization* 73(3): 277-288.

**Himes-Cornell, A.,** K. Hoelting, C. Maguire, L. Munger-Little, **J. Lee,** J. Fisk, **R. Felthoven,** and **P. Little.** 2013. Community Profiles of North Pacific Fisheries: Alaska, 2nd edition. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-259 (1-12).

**Himes-Cornell, A., C. Package,** and A. Durland. 2011. Improving Community Profiles for the North Pacific Fisheries. NOAA Tech. Memo. NMFS-AFSC-230.

**Lew, D.** and **A. Himes-Cornell.** 2011. A Guide to Designing, Testing, and Implementing AFSC Economic and Social Surveys. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-228, 43p.

Vaccaro, I., L. Zanotti, and **J. Sepez.** 2009. Commons and Markets: Opportunities for Development of Local Sustainability. *Environmental Politics* 18(4): 522-538.

**Sepez, J.** 2008. Historical Ecology of Makah Subsistence Foraging Patterns. *Journal of Ethnobiology* 28(1): 110-133.

Etnier, M. and **J. Sepez** 2008. Changing Patterns of Sea Mammal Exploitation among the Makah Pp. Time and Change: Archaeology and Anthropological Perspectives on the Long-Term in Hunter-Gatherer Societies, R. Layton, H. Maschner, and D. Papagianni, eds., pp. 143-158. Woodbridge, CT: Oxbow Press.

**Sepez, J., K. Norman,** and **R. Felthoven.** 2007. A quantitative model for ranking and selecting communities most involved in commercial fisheries. *National Association of Practicing Anthropologists Bulletin* 28(1): 43-56.

**Sepez, J.,** C. Package, P. Malcolm, and A. Poole. 2007. Unalaska, Alaska: Memory and Denial in the Globalization of the Aleutian Landscape. *Polar Geography* 30(3): 193-209.

**Norman, K., J. Sepez,** H. Lazrus, N. Milne, C. Package, S. Russell, K. Grant, R. Petersen, J. Primo, M. Styles, B. Tilt, and I. Vaccaro. 2007. Community Profiles for West Coast and North Pacific Fisheries-Washington, Oregon, California, and other U.S. States. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NWFSC-85, 602p. Available at: [http://www.nwfsc.noaa.gov/research/divisions/sd/communityprofiles/California/Santa\\_Rosa\\_CA.pdf](http://www.nwfsc.noaa.gov/research/divisions/sd/communityprofiles/California/Santa_Rosa_CA.pdf).

## Publications

---

Poole, A. and **J. Sepez**. 2006. Distribution and abundance of human populations in the Bering Sea and Aleutian Islands. 2005 North Pacific Groundfish Stock Assessment and Fishery Evaluation Reports for 2006, Economic Status of the Groundfish Fisheries Off Alaska, 2006. T. Hiatt, ed., pp. 255-276. Seattle: Alaska Fisheries Science Center.

**Sepez, J., K. Norman**, A. Poole, and B. Tilt. 2006. Fish scales: scale and method in social science research for North Pacific and West Coast fishing communities. *Human Organization* 65(3): 280-293.

**Sepez, J.** and H. Lazrus. 2005. Traditional Environmental Knowledge in Federal Natural Resource Management Agencies. *Practicing Anthropology* 27(1): 1-48.

Lazrus, H. and **J. Sepez**. 2005. The NOAA Fisheries Alaska Native Traditional Knowledge Database. *Practicing Anthropology* 27(1): 33-37.

**Sepez, J.**, B. Tilt, C. Package, H. Lazrus, and I. Vaccaro. 2005. Community Profiles for North Pacific Fisheries-Alaska. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-AFSC-160, 552p.

Package, C. and **J. Sepez**. 2004. Fishing communities of the North Pacific: social science research at the Alaska Fisheries Science Center. AFSC Quarterly Report, April-May-June 2004, 11p. Available at: <http://www.afsc.noaa.gov/Quarterly/amj2004/amj04feat.pdf>.

**Sepez, J.** 2003. Makah. Dictionary of American History, 3rd Edition. Charles Scribner's Sons, New York.

# Pacific

## PACIFIC | Coastal & Marine Recreation Research

Polasky, S., E. Nelson, J. Camm, B. Csuti, P. Fackler, E. Lonsdorf, C. Montgomery, D. White, J. Arthur, **B. Garber-Yonts**, R. Haight, J. Kagan, A. Starfield, and C. Tobalske. 2008. Where to Put Things? Spatial Land Management to Sustain Biodiversity and Economic Returns. *Biological Conservation* 141(6): 1505-1524.

**Lew, D.** and D. Larson. 2005. Valuing recreation and amenities at San Diego County beaches. *Coastal Management* 33(1): 71-86.

**Garber-Yonts, B.** 2005. Conceptualizing and Measuring Demand for Recreation on National Forests: A Review and Synthesis. General Technical Report PNW-GTR-645.40. U.S. Department of Agriculture, U.S. Forest Service, Pacific Northwest Research Station, Portland, OR.

**Garber-Yonts, B.**, J. Kerkvliet, and R. Johnson. 2004. Public Values for Biodiversity Conservation Policies in the Oregon Coast Range. *Forest Science* 50(5): 589-602.

Harris, T., **C. Seung**, T. Darden, and W. Riggs. 2002. Rangeland fires in Northern Nevada: an application of computable general equilibrium modeling. *Western Economics Forum* 1(2): 3-10.



**PACIFIC | Commercial Fisheries Economics Research**

Rose, K., J. Fiechter, E. Curchitser, K. Hedstrom, M. Bernal, S. Creekmore, **A. Haynie**, S. Ito, S. Lluch-Cota, **B. Megrey**, C. Edwards, D. Checkley, T. Koslow, **S. McClatchie**, **F. Werner**, **A. MacCall**, and V. Agostini. 2015. Demonstration of a fully coupled end-to-end model for small pelagic fish using sardine and anchovy in the California Current. Forthcoming in *Progress in Oceanography*. Available online: <http://www.sciencedirect.com/science/article/pii/S0079661115000233>

Collier, T., **A. Mamula**, and J. Ruggiero. 2014. Estimation of a Multi-Output Production Functions in Commercial Fisheries. *Omega: The International Journal of Management Science* 42(1): 157:165.

**Speir, C.**, C. Pomeroy, and J. Sutinen. 2014. Port Level Fishing Dynamics: Assessing Changes in the Distribution of Fishing Activity over Time. *Marine Policy* 46: 171-191.

**Mamula, A.** and **J. Walden**. 2013. Proceedings of the National Marine Fisheries Service Productivity Workshop (Santa Cruz, June 11-12, 2012). U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-503.

**Thomson, C.** 2010. Data requirements for integrating socioeconomic considerations into regulatory analysis: examples from California commercial fisheries. In: R.M. Starr et al. (eds.). *Managing Data-Poor Fisheries: Case Studies, Models and Solutions*. California Sea Grant College Program, Publication No. T-070.

**Tomberlin, D.**, and G. Holloway. 2010. Bayesian hierarchical estimation of technical efficiency in a fishery. *Applied Economics Letters* 17(2): 201-204.

Grafton, R., R. Hannesson, B. Shallard, D. Sykes, and **J. Terry**. 2010. The Economics of Allocation in Tuna Regional Fisheries Management Organizations. *Conservation and Management of Transnational Tuna Fisheries*, R. Allen, J. A. Joseph, and **D. Squires**, eds., pp. 155-162. Wiley-Blackwell.

Hannesson, R. and **S. Herrick**. 2010. The value of Pacific sardine as forage fish. *Marine Policy* 34(5): 935-942.

**Lian, C.** 2010. West Coast limited entry groundfish trawl cost earnings survey protocols and results for 2004. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NWFSC-107, 35p. Available at: [http://www.nwfsc.noaa.gov/assets/25/7569\\_11092010\\_161408\\_CostEarningsSurveyTM107WebFinal.pdf](http://www.nwfsc.noaa.gov/assets/25/7569_11092010_161408_CostEarningsSurveyTM107WebFinal.pdf).

Hannesson, R., **S. Herrick**, and J. Field. 2009. Ecological and economic considerations in the conservation and management of the Pacific sardine (*Sardinops sagax*). *Canadian Journal of Fisheries and Aquatic Sciences* 66(5): 859-868.

**Lian, C.**, R. Singh, and Q. Weninger. 2010. Fleet Restructuring, Rent Generation and the Design of Individual Fishing Quota Programs: Empirical Evidence from the Pacific Coast Groundfish Fishery. *Marine Resource Economics* 24: 329-359.

Norton, J., **S. Herrick**, and J. Mason. 2009. Fisheries abundance cycles in ecosystem and economic management of California fish and invertebrate resources. *The future of fisheries science in North America*, R.J. Beamish and B.J. Rothschild, eds., pp. 227-244. Springer, B.V.

Hannesson, R. and **S. Herrick**. 2008. Catch strategies for the Pacific sardine. *California Cooperative Oceanic Fisheries Investigations (CalCOFI) Reports* 49: 222-231.

**Herrick, S.**, J. Norton, J. Mason, and C. Bessey. 2007. Management application of an empirical model of sardine-climate regime shifts. *Marine Policy* 31: 71-80.

## Publications

---

**Thomson, C.**, D. VenTresca, and D. Colpo. 2007. Logbook Pilot Program for California's Nearshore Groundfish Fishery: Results and Lessons Learned. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-NMFS-SWFSC-408.

**Herrick, S.**, K. Hill and C. Reiss. 2006. An optimal harvest policy for the recently renewed United States Pacific sardine fishery. *Climate Change and the Economics of the World's Fisheries*, R. Hannesson, M. Barange, and **S. Herrick**, eds., pp. 126-150. United Kingdom: Edward Elgar.

**Squires, D.**, Y. Jeon, T. Kim, and R. Clarke. 2006. Price linkages in Pacific tuna markets: implications for the South Pacific tuna treaty and the Western and Central Pacific region. *Environment and Development Economics* 11(6): 747-767.

**Plummer, M.** 2006. The grand unified theory of natural resource economics: a special case. *Explorations in Environmental & Natural Resource Economics: Essays in Honor of Gardner M. Brown* D.F. Layton and R. Halvorsen, eds., pp. 150-160. United Kingdom: Edward Elgar.

Holloway, G. and **D. Tomberlin**. 2006. Bayesian ranking and selection of fishing boat efficiencies. *Marine Resource Economics* 21(4): 415-432.

**Squires, D.**, J. Joseph, and T. Groves. 2006. Tuna resource management: buybacks in transnational fisheries. *Pacific Economic Bulletin* 21(3): 63-74.

Reid, C., J. Kirkley, **D. Squires**, and J. Ye. 2005. An analysis of the fishing capacity of the global tuna purse seine fleet. *FAO Fisheries Proceedings 2: Management of Tuna Fishing Capacity: Conservation and Socio-economics*. pp. 117-156. Rome: Food and Agriculture Organization of the United Nations.

Holloway, G., **D. Tomberlin**, and X. Irz. 2005. Hierarchical analysis of production efficiency in a coastal trawl fishery. *Sustaining Large Marine Ecosystems: The Human Dimension*, T.M. Hennessey and J.G. Sutinen, eds., pp. 159-185. Amsterdam: Elsevier B.V.

Haraden, J., **S. Herrick**, **D. Squires**, and C. Tisdell. 2004. Economic benefits of dolphins in the United States Eastern Tropical Pacific purse seine tuna industry. *Environmental and Resource Economics* 28: 451-468.

**Dalton, M.** and S. Ralston. 2004. The California Rockfish Conservation Area and groundfish trawlers at Moss Landing Harbor. *Marine Resource Economics* 19(1): 67-83.

Kirkley, J., P. Morrison, J. Catherine, and **D. Squires**. 2004. Deterministic and stochastic capacity estimation for fishery capacity reduction. *Marine Resource Economics* 19(3): 271-294.

Kirkley, J., **D. Squires**, F. Alam, and H. Ishak. 2003. Excess capacity and asymmetric information in developing country fisheries: the Malaysian purse seine fishery. *American Journal of Agricultural Economics* 85(3): 647-662.

Fox, K., R. Grafton, J. Kirkley, and **D. Squires**. 2003. Property rights, productivity, and profits in a common-pool resource. *Journal of Environmental Economics and Management* 46(1): 156-177.

Reid, C., **D. Squires**, Y. Jeon, L. Clarke, and R. Clarke. 2003. Fishing capacity of tuna purse seine vessels in the Western and Central Pacific Ocean. *Marine Policy* 27(6): 449-469.

**Thomson, C.** 2001. Human ecosystem dimension. *California's Living Marine Resources: A Status Report*, T. Larinto, ed., pp. 47-66. Monterey: California Department of Fish and Game.

**Dalton, M.** 2001. El Nino, expectations, and fishing effort in Monterey Bay, California. *Journal of Environmental Economics and Management* 42(3): 336-359.

Viswanathan, K., I. Omar, Y. Jeon, J. Kirkley, **D. Squires**, and I. Susilowati. 2001. Fishing skill in developing country fisheries: the Kedah, Malaysia trawl fishery. *Marine Resource Economics* 16(4): 293-314.

Grafton, R., **Squires, D.**, and K. Fox. 2000. Private property and economic efficiency: a study of a common-pool resource. *Journal of Law and Economics* 43(2): 679-713.

Campbell, H., **S. Herrick**, and **D. Squires**. 2000. The role of research in fisheries management: the conservation of dolphins in the Eastern Tropical Pacific and the exploitation of southern bluefin tuna in the Southern Ocean. *Ocean Development and International Law* 31(4): 347-375.

### **PACIFIC | Habitat Economics Research**

**Speir, C., A. Mamula**, and D. Ladd. In press. Effects of Water Supply on Labor Demand and Agricultural Production in California's San Joaquin Valley. Forthcoming in *Water Economics and Policy*.

**Thomson, C.** 2012. Resighini Rancheria Tribe Fishery Socioeconomics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** 2012. Hoopa Valley Tribe Fishery Socioeconomics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** 2012. Karuk Tribe Fishery Socioeconomics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** 2012. Klamath Tribes Fishery Socioeconomics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** 2012. Commercial Fishing Economics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** 2012. Yurok Tribe Fishery Socioeconomics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** and A. Mamula. 2012. Ocean Sport Fishing Economics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Thomson, C.** and C. Speir. 2011. Inriver Sport Fishing Economics Technical Report for the Secretarial Determination on Whether to Remove Four Dams on the Klamath River in California and Oregon.

**Plummer, M.** 2009. Assessing benefit transfer for the valuation of ecosystem services. *Frontiers in Ecology and the Environment* 7(1): 38-45.

Benson, S., H. Dewar, P. Dutton, C. Fahy, C. Heberer, **D. Squires**, and **S. Stohs**. 2009. Swordfish and Leatherback use of Temperate Habitat (SLUTH). Administrative Report LJ-09-06.

## Publications

---

Schneidler, M., and **M. Plummer**. 2009. Human Well-being Indicators: Background and Applications for the Puget Sound Partnership. Northwest Fisheries Science Center Processed Report 38p+Appendix. Available at: <http://sites.google.com/site/pspartnershipdocuments/Home>.

**Thomson, C.** and **C. Pinkerton**. 2008. Habitat Restoration Cost References for Salmon Recovery Planning. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-425.

**Plummer, M.** 2007. Welcome to the data-poor real world: incorporating benefit-cost principles into environmental policymaking. *Research in Law and Economics* 23: 103-130.

Hildner, K. and **C. Thomson**. 2007. Using the California Habitat Restoration Project Database to estimate habitat restoration costs for ESA-listed salmonids. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-403.

Hildner, K. and **C. Thomson**. 2007. Salmon Habitat Restoration Cost Modeling: Results and Lessons Learned. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-404.

**Tomberlin, D.** and V. Bosetti. 2006. An Iterative Finite Difference Approach to Project Valuation under Multiple, Interacting Options. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-389, 16p. Available at: <http://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-389.PDF>.

O'Hanley, J. and **D. Tomberlin**. 2005. Optimizing the removal of small fish passage barriers. *Environmental Modeling and Assessment* 10(2): 85-98.

**Plummer, M.** 2005. The economic evaluation of stream and watershed restoration projects. *Methods for Monitoring Stream and Watershed Restoration*, P. Roni, ed., pp. 310-330. Bethesda: American Fisheries Society.

Ise, J. and **S. Abbott-Jamieson**. 2005. Students gather local fisheries knowledge as part of a NOAA Fisheries education and outreach project. *Practicing Anthropology* 27(1): 29-32.

### PACIFIC | Spatial Analysis & Marine Protected Areas Research

Field, J., Punt, A., Methot, R., and **C. Thomson**. 2006. Does MPA mean major problem for assessments? Considering the consequences of place-based management systems. *Fish and Fisheries* 7: 284-302.

**Dalton, M.** and S. Ralston. 2006. Empirical Evaluation of Regional Scale Marine Reserves and the Groundfish Trawl Fishery. California Sea Grant College Program, Research Completion Reports, Paper MA06 01. Available at: <http://nsgl.gso.uri.edu/casg/casgt06010.pdf>.

### PACIFIC | Ocean Policy & Management Research

**Wells, B., T. Wainwright, C. Thomson, T. Williams, N. Mantua, L. Crozier, S. Breslow, and K. Fresh**. 2014. CCIEA Phase III Report 2014: Ecosystem Components, Protected Species – Pacific Salmon. Available at: [http://www.noaa.gov/iea/Assets/iea/california/Report/pdf/8.Salmon\\_2013.pdf](http://www.noaa.gov/iea/Assets/iea/california/Report/pdf/8.Salmon_2013.pdf)

Khanna, M. and **C. Speir**. 2013. Motivations for Proactive Environmental Management. *Sustainability* 5: 2664-2692. DOI: 10.3390/su5062664.

**Norman, K., D. Holland, and S. Kasperski**. 2013. Resilient and Economically Viable Coastal Communities. In: **Levin, P., B. Wells, and M. Sheer** (eds.), *California Current Integrated Ecosystem Assessment: Phase II Report*. Available at: <http://www.noaa.gov/iea/CCIEA-Report/index.html>.

**Squires, D.** 2009. Opportunities in social science research. The Future of Fisheries Science in North America R. Beamish and B. Rothschild, eds., pp. 637-696. Netherlands: Springer, American Institute of Fisheries Research Biologists.

### **PACIFIC | Other Marine Environmental Research**

Harvey, C. Bartz, J. Davies, T. Francis, T. Good, A. Guerry, M. Hanson, K. Holsman, J. Miller, **M. Plummer**, J. Reum, L. Rhodes, C. Rice, J. Samhoury, G. Williams, N. Yoder, P. Levin, and M. Ruckelshaus. 2010. A mass-balance model for evaluating food web structure and community-scale indicators in the central basin of Puget Sound. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NWFSC-106, 180p. Available at: [http://www.nwfsc.noaa.gov/assets/25/7363\\_08042010\\_120050\\_MassBalanceModelTM106WebFinal.pdf](http://www.nwfsc.noaa.gov/assets/25/7363_08042010_120050_MassBalanceModelTM106WebFinal.pdf).

### **PACIFIC | Recreational Fisheries Economics Research**

**Hilger, J.** and J. Englin. 2009. Utility theoretic semi-logarithmic incomplete demand systems in a natural experiment: Forest fire impacts on recreational values and use. *Resource and Energy Economics Volume 31(4)*: 287-298.

**Lew, D.** and D. Larson. 2008. Valuing a beach day with a repeated nested logit model of participation, site choice, and stochastic time value. *Marine Resource Economics 23(3)*: 233-252.

Layton, D. and **S. Lee**. 2006. From ratings to rankings: the econometric analysis of stated preference ratings data. Explorations in Environmental & Natural Resource Economics: Essays in Honor of Gardner M. Brown, D.F. Layton and R. Halvorsen, eds., pp. 224-244. United Kingdom: Edward Elgar.

**Lew, D.** and D. Larson. 2005. Accounting for stochastic shadow values of time in discrete-choice recreation demand models. *Journal of Environmental Economics and Management 50(2)*: 341-361.

Larson, D. and **D. Lew**. 2005. Measuring the utility of ancillary travel: revealed preferences in recreation site demand and trips taken. *Transportation Research 39(2-3)*: 237-55.

**Gentner, B., S. Steinback**, and M. Price. 2001. Marine Angler Expenditures in the Pacific Coast Region, 2000. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-49, 57p. Available at: [http://www.st.nmfs.noaa.gov/st5/RecEcon/Publications/NMFS\\_F\\_SPO\\_49rev.pdf](http://www.st.nmfs.noaa.gov/st5/RecEcon/Publications/NMFS_F_SPO_49rev.pdf).

### **PACIFIC | Sociocultural Fisheries Research**

**Breslow, S., D. Holland, P. Levin, K. Norman**, M. Poe, **C. Thomson**, R. Barnea, P. Dalton, N. Dolsak, **C. Greene**, K. Hoelting, **S. Kasperski, R. Kosaka**, D. Ladd, **A. Mamula, S. Miller**, B. Sojka, **C. Speir, S. Steinbeck**, and **N. Tolimieri**. 2014. Human Dimensions of the CCIEA. In: Levin, P., B. Wells, and M. Sheer (eds.), California Current Integrated Ecosystem Assessment: Phase III Report 2013. Available from [http://www.noaa.gov/iea/Assets/iea/california/Report/pdf/10.Human%20Dimensions\\_2013.pdf](http://www.noaa.gov/iea/Assets/iea/california/Report/pdf/10.Human%20Dimensions_2013.pdf).

**Holland, D.** and **S. Kasperski**. 2014. Fishery Income Diversification and Risk for Fishermen and Fishing Communities of the US West Coast and Alaska – Updated to 2012, Appendix HD1, Appendix to: Human Dimensions of the CCIEA. In: **Levin, P., B. Wells**, and M. Sheer (Eds.). California Current Integrated Ecosystem Assessment: Phase III Report 2013. Available from [http://www.noaa.gov/iea/Assets/iea/california/Report/pdf/11.Human%20dimensions%20Appendix\\_2013.pdf](http://www.noaa.gov/iea/Assets/iea/california/Report/pdf/11.Human%20dimensions%20Appendix_2013.pdf).

Pomeroy, C., **C. Thomson**, and M. Stevens. 2010. California's North Coast Fishing Communities: Historical Perspective and Recent Trends. California Sea Grant College Program. Publication No. T-072.

Vaccaro, I. and **K. Norman**. 2008. Social sciences and landscape analysis: opportunities for the improvement of conservation policy design. *Journal of Environmental Management 88(2)*: 360-371.



## Publications

---

**Sepez, J., K. Norman,** A. Poole, and B. Tilt. 2005. Fish Scales: Scale and Method in Social Science Research for North Pacific and West Coast Fishing Communities. *Human Organization* 65(3): 280-293.

### **PACIFIC | Spatial Analysis & Marine Protected Areas Research**

**Wallmo, K.** and **R. Kosaka.** 2014. Public Preferences for Marine Protected Areas Off the U.S. West Coast: The Significance of Restrictions and Size on Economic Value. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-144.

**J. Mason, R. Kosaka, A. Mamula,** and **C. Speir.** 2012. Effort Changes Around a Marine Reserve: The Case of the California Rockfish Conservation Area. *Marine Policy* 36(5): 1054-1063.

# Western Pacific

### **WESTERN PACIFIC | Coastal & Marine Recreation Research**

Hu, W., K. Boehle, L. Cox, and **M. Pan.** 2009. Economic Values of Dolphin Excursions in Hawaii: A Stated Choice Analysis. *Marine Resource Economics* 24: 61-76.

### **WESTERN PACIFIC | Commercial Fisheries Economics Research**

Richmond, L., D. Kotowicz, and **J. Hospital.** 2015. Monitoring socioeconomic impacts of Hawaii's 2010 bigeye tuna closure: Complexities of local management in a global fishery. *Ocean and Coastal Management* 106: 87-96. DOI: 10.1016/j.ocecoaman.2015.01.015.

**Hospital, J.** and **C. Beavers.** 2014. Catch shares and the main Hawaiian Islands bottomfish fishery: Linking fishery conditions and fisher perceptions. *Marine Policy* 44: 9-17. DOI: 10.1016/j.marpol.2013.08.006.

Arita, S., **M. Pan, J. Hospital,** and P. Leung. 2013. The distributive economic impacts of Hawaii's commercial fishery: a SAM analysis. *Fisheries Research* 145: 82-89. DOI: 10.1016/j.fishres.2013.02.005.

**Hospital, J.** and **M. Pan.** 2009. Demand for Hawaii bottomfish revisited: incorporating economics into total allowable catch management. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-PIFSC-20, 19p + Appendix. Available at: [http://www.pifsc.noaa.gov/tech/NOAA\\_Tech\\_Memo\\_PIFSC\\_20.pdf](http://www.pifsc.noaa.gov/tech/NOAA_Tech_Memo_PIFSC_20.pdf).

**Pan, M.** and A. Griesemer. 2006. Economic Analysis of Bottomfish Fishing Vessels Operating in the Northwestern Hawaiian Islands in 2003. Pacific Islands Fisheries Science Center Administrative Report, H-06-03, 12p.

Cai, J., P. Leung, **M. Pan,** and **S. Pooley.** 2005. Economic linkage impacts of Hawaii's longline fishing regulations. *Fisheries Research* 74(1-3): 232-242.

Cai, J., P. Leung, **M. Pan,** and **S. Pooley.** 2005. Linkage of Fisheries Sector to Hawaii's Economy and Economic Impacts of Longline Fishing Regulations. SOEST Publication 05-01, JIMAR Contribution 05-355, 24p.

O'Malley, J. and **S. Pooley.** 2002. A Description and Economic Analysis of Large American Samoa Longline Vessels. SOEST Publication 02-2, JIMAR Contribution 02-345, 24p.

O'Malley, J. and **S. Pooley.** 2002. Economic and Operational Characteristics of the Hawaii-based Longline Fleet in 2000. SOEST Publication 03-01, JIMAR Contribution 03-348, 31p.

Pan, M., P. Leung, and **S. Pooley**. 2001. A decision support model for fisheries management in Hawaii: a multilevel and multiobjective programming approach. *North American Journal of Fisheries Management* 21: 293-309.

**Curtis, R.** and R. Hicks. 2000. The cost of sea turtle preservation: the case of Hawaii's pelagic longliners. *American Journal of Agricultural Economics* 82(5): 1191-1197.

**Pan, M.**, P. Leung, F. Ji, S. Nakamoto, and **S. Pooley**. 2000. A Multilevel and Multiobjective Programming Model for the Hawaii Fishery: Model Documentation and Application Results. JIMAR Contribution 99-324, University of Hawaii.

Kawamoto K. and **S. Pooley**. 2000. Annual Report of the 1998 Western Pacific Lobster Fishery (with preliminary 1999 data). Southwest Fish. Sci. Cent. Admin. Rep. H-00-02, 38p. Available at: [http://www.pifsc.noaa.gov/admin-rpts/2000-present/SWFC\\_Admin\\_Report\\_00-02.pdf](http://www.pifsc.noaa.gov/admin-rpts/2000-present/SWFC_Admin_Report_00-02.pdf).

### WESTERN PACIFIC | Recreational Fisheries Economics Research

**Pan, M.**, A. Griesemer, and R. Mamiit. 2006. Economic assessment of open fishing tournament in Hawai'i. Newsletter Volume 11, Number 2, Pelagic Fisheries Program, University of Hawaii.

Curran, D., P. Dalzell, J. Schultz, J. O'Malley, and **S. Pooley**. 2006. Recreational Metadata: Using Tournament Data to Describe a Poorly Documented Pelagic Fishery. SOEST Publication 06-03, JIMAR Contribution 06-363, 40p.

Leeworthy, V., P. Wiley,, and **J. Hospital**. 2004. Importance-satisfaction Ratings Five-year Comparison, SPA & ER use, and Socioeconomic and Ecological Monitoring Comparison of Results 1995-96 to 2000-01. Silver Spring, Maryland: Special Projects, NOS, 59p.

### WESTERN PACIFIC | Sociocultural Fisheries Research

**Allen, S.** and A. Gough. 2007. Filipino crew community in Hawai'i-based longline fishing fleet. *National Association of Practicing Anthropologists Bulletin* 28(1): 87-98.

**Allen, S.** and A. Gough. 2007. Hawaii Longline Fishermen's Experiences with the Observer Program. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-PIFSC-8, 39p. Available at: [http://www.pifsc.noaa.gov/tech/NOAA\\_Tech\\_Memo\\_PIFSC\\_8.pdf](http://www.pifsc.noaa.gov/tech/NOAA_Tech_Memo_PIFSC_8.pdf).

**Allen, S.** and A. Gough. 2006. A Sociocultural Assessment of Filipino Crew Members Working in the Hawaii-based Longline Fleet. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-PIFSC-6, 54p. Available at: [http://www.pifsc.noaa.gov/tech/NOAA\\_Tech\\_Memo\\_PIFSC\\_6.pdf](http://www.pifsc.noaa.gov/tech/NOAA_Tech_Memo_PIFSC_6.pdf).

## New England

### NEW ENGLAND | Commercial Fisheries Economics Research

**Holland, D., P. Pinto da Silva,** and **A. Kitts**. 2015. Social Capital and Economic Performance of New England Groundfish Harvest Cooperatives: An Evolving Story. Forthcoming in *Marine Resource Economics*.

**Olson, J.** 2010. Seeding nature, ceding culture: Redefining the boundaries of the marine commons through spatial management and GIS. *Geoforum* 41(2): 293-303.

## Publications

---

**Holland, D.** and J. Wiersma. 2010. Free form property rights for fisheries: The decentralized design of rights-based management through groundfish sectors in New England. *Marine Policy* 34(5): 1076-1081.

**Lee, M.** 2010. Economic tradeoffs in the Gulf of Maine ecosystem: Herring and whale-watching. *Marine Policy* 34: 156-162.

**Holland, D.** and G.E. Herrera. 2009. Uncertainty in the Management of Fisheries: Contradictory Implications and a New Approach. *Marine Resource Economics* 24(3): 289-299.

**Thunberg, E.** 2009. Trends in Selected Northeast Region Marine Industries. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS NE 211, 107p. Available at: <http://www.nefsc.noaa.gov/publications/tm/tm211/>.

**Rountree, B., A. Kitts** and **P. Pinto da Silva**. 2008. Complexities of collaboration in fisheries management: the Northeast U.S. tilefish fishery. FAO Fisheries Technical Paper No. 504: Case Studies in Fisheries Self-governance, R. Townsend, R. Shotton, and H. Uchida, eds., pp. 135-147. Rome: FAO.

**Steinback, S., R. Allen,** and **E. Thunberg**. 2008. The benefits of rationalization: the case of the American lobster fishery. *Marine Resource Economics* 23(1): 37-63.

**Bisack, K.** 2008. Integrating Porpoise and Cod Management: A comparison of Days-at-Sea, ITQs and Closures. *Marine Resource Economics* 23(4): 361-378.

Jin, D., **E. Thunberg**, and P. Hoaglund. 2008. Economic impact of the 2005 red tide event on commercial shellfish fisheries in New England. *Ocean and Coastal Management* 51(5): 420-429.

**Thunberg, E., A. Kitts,** and **J. Walden**. 2007. A case study of New England groundfish fishing capacity reduction. Fishery Buybacks, **D. Squires** and **R. Curtis**, eds., pp. 239-248. Blackwell Publishing.

**Kitts, A., P. Pinto da Silva,** and **B. Rountree**. 2007. Evolution and outcomes of collaborative management institutions in the NE U.S. tilefish fishery. *Marine Policy* 31: 192-200.

**Thunberg, E.** 2007. Demographic and Economic Trends in the Northeastern United States Lobster (*Homarus americanus*) Fishery, 1970-2005. U.S. Dept. of Commerce. Northeast Fisheries Science Center Reference Document 07-17. National Marine Fisheries Service, Woods Hole, MA.

Fare, R., J. Kirkley, and **J. Walden**. 2007. Estimating Capacity and Efficiency in Fisheries with Undesirable Outputs. VIMS Marine Resource Report No. 2007-6. Available at: <http://www.vims.edu/Greylit/VIMS/mrr07-6.pdf>.

Fare, R., J. Kirkley, and **J. Walden**. 2006. Adjusting technical efficiency to reflect discarding: the case of the U.S. Georges Bank multi-species otter trawl fishery. *Fisheries Research* 78(2006): 257-265.

**Bisack, K.** and J. Sutinen. 2006. Harbor porpoise bycatch: ITQs or time/area closures in the New England gillnet fishery. *Land Economics* 82(1): 85-102.

Jin, D., P. Hoagland, and **E. Thunberg**. 2006. An analysis of the relationship between fish harvesting and processing sectors in New England. *Marine Resource Economics* 21(1): 47-62.

**Walden, J.** 2006. Estimating vessel efficiency using a bootstrapped data envelopment analysis model. *Marine Resource Economics* 21(2): 181-192.

Jin, D. and **E. Thunberg**. 2005. An analysis of fishing vessel accidents in fishing areas off the Northeastern United States. *Safety Science* 43(8): 523-540.

**Edwards, S., J. Link,** and **B. Rountree**. 2005. Portfolio management of fish communities in Large Marine Ecosystems. *Sustaining Large Marine Ecosystems: The Human Dimension*, T.M. Hennessey and J.G. Sutinen, eds., pp. 181-200. Amsterdam: Elsevier B.V.

**Thunberg, E.,** T. Helser, and R. Mayo. 2002. Bioeconomic analysis of alternative selection patterns in the United States Atlantic silver hake fishery. *Marine Resource Economics* 13(1): 51-74.

**Kitts, A., E. Thunberg,** and J. Robertson. 2000. Willingness to participate and bids in a fishing vessel buyout program: a case study of New England groundfish. *Marine Resource Economics* 15(3): 221-232.

**Steinback, S.** and **E. Thunberg**. 2000. A Method of Analyzing Trip Limits in Northeast Fisheries: A Case Study of the Spiny Dogfish Fishery. Northeast Fisheries Science Center Reference Document 00-06.

### **NEW ENGLAND | Spatial Analysis & Marine Protected Areas Research**

**Wallmo, K.** and **S. Edwards**. 2008. Estimating Non-market Values of Marine Protected Areas: A Latent Class Modeling Approach. *Marine Resource Economics* 23(3): 301-323.

**Edwards, S.** 2008. Ocean zoning, first possession, and Coasean contracts. *Marine Policy* 32(1): 46-54.

### **NEW ENGLAND | Ocean Policy & Management Research**

Sutinen, J., **P. Clay,** C. Dyer, **S. Edwards,** J. Gates, T. Grigalunas, T. Hennessey, L. Juda, **A. Kitts,** P. Logan, J. Poggie Jr., **B. Rountree, S. Steinback, E. Thunberg,** H. Upton, and **J. Walden**. 2005. A framework for monitoring and assessing socioeconomics and governance of large marine ecosystems. *Sustaining Large Marine Ecosystems: The Human Dimension*, T.M. Hennessey and J.G. Sutinen, eds., pp. 27-83. Amsterdam: Elsevier B.V.

### **NEW ENGLAND | Other Marine Environmental Research**

Portman, M., Di Jin, and **E. Thunberg**. 2009. Waterfront land use change and marine resource conditions: the case of New Bedford and Fairhaven, Massachusetts. *Ecological Economics* 68: 2354-2362.

**Steinback, S.** 2004. Using ready-made regional input-output models to estimate backward-linkage effects of exogenous output shocks. *Review of Regional Studies* 34(1): 57-71.

### **NEW ENGLAND | Recreational Fisheries Economics Research**

**Thunberg, E.** and C. Fulcher. 2006. Testing the stability of recreational fishing participation probabilities. *North American Journal of Fisheries Management* 26: 636-644.

Salz, R., D. Loomis, M. Ross, and **S. Steinback**. 2002. A Baseline Socio-economic Study of Massachusetts' Marine Recreational Fisheries. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NE-165, 129p. Available at: <http://www.nefsc.noaa.gov/publications/tm/tm165/tm165.pdf>.

## Publications

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### NEW ENGLAND | Sociocultural Fisheries Research

Johnston, R., **D. Holland** and S. Tuler. 2010. New England Fishing Communities: Prospects and Uncertainties. *Communities and Banking* 21(2): 3-5.

Tuler, S., J. Agyeman, and **P. Pinto da Silva**. 2008. Improving the social sustainability of fisheries management by assessing stakeholder vulnerability. *Human Ecology Review* 15(2): 171-184.

**Pinto da Silva, P.** and M. Hall-Arber, eds. 2008. Weathering the storms: vulnerability and resilience in the North-east fishing industry. *Special issue of Human Ecology Review* 15(2): 141-142.

**Olson, J.** 2006. Changing property, spatializing difference: the sea scallop fishery in New Bedford, Massachusetts. *Human Organization* 65(3): 307-318.

**Pinto da Silva, P.** and **A. Kitts**. 2006. Collaborative fisheries management in the Northeast U.S.: emerging initiatives and future directions. *Marine Policy* 30(6): 832-841.

**Pinto da Silva, P.** 2006. Fishermen at the frontlines of conservation. The Common Property Resource Digest. March 2006 issue.

**Pinto da Silva, P.** and C. Fulcher. 2005. Human dimensions of marine fisheries: Using GIS to illustrate land-sea connections in the Northeast U.S. herring fishery. *Marine Fisheries Review* 67(4): 19-25.

### NEW ENGLAND | U.S. Territories & International Fisheries Research

Pascoe, S., J. Innes, **D. Holland**, M. Fina, O. Thébaud, R. Townsend, J. Sanchirico, R. Arnason, C. Wilcox, and T. Hutton. 2010. Use of incentive-based management systems to limit bycatch and discarding. *International Review of Environmental and Resource Economics* 4(1): 123-161.

## Mid-Atlantic

### MID-ATLANTIC | Commercial Fisheries Economics Research

**Steinback, S.** and **E. Thunberg**. 2006. Northeast region commercial fishing input-output model. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NE-188, 54p. Available at: <http://www.nefsc.noaa.gov/publications/tm/tm188/tm188.pdf>.

**Edwards, S.** 2005. Rents for the taking: a contemporary history of property rights formation in the U.S. Atlantic sea scallop fishery. *Evolving Property Rights in Marine Fisheries*, D. Leal, ed., pp. 111-126. New York: Rowman & Littlefield Publishers.

**Edwards, S.** 2005. Accounting for rents in the U.S. Atlantic sea scallop fishery. *Marine Resource Economics* 20(1): 61-76.

Hoagland, P., D. Jin, **E. Thunberg**, and **S. Steinback**. 2005. Economic activity associated with the Northeast Shelf Large Marine Ecosystem: application of an input-output approach, Chapter 7. *Sustaining Large Marine Ecosystems: The Human Dimension*, T.M. Hennessey and J.G. Sutinen, eds., pp. 157-179. Amsterdam: Elsevier B.V.



**Walden, J.**, J. Kirkley, and **A. Kitts**. 2003. A limited economics assessment of the Northeast groundfish fishery buyout program. *Land Economics* 79(3): 426-439.

**Link, J.**, J. Brodziak, **S. Edwards**, W. Overholtz, D. Mountain, J. Jossi, T. Smith, and M. Fogarty. 2002. Marine ecosystem assessment in a fisheries management context. *Canadian Journal of Fisheries and Aquatic Sciences* 59: 1429-1440.

Jin, D., H. Kite-Powell, **E. Thunberg**, A. Solow, and W. Talley. 2002. A model of fishing vessel accident probability. *Journal of Safety Research* 33: 497-510.

**Edwards, S.** 2002. Rent-seeking and property rights formation in the U.S. Atlantic sea scallop fishery. *Marine Resource Economics* 16: 263-275.

Kirkley, J., R. Fare, S. Grosskopf, T. McConnell, **D. Squires**, and I. Strand. 2001. Assessing efficiency and capacity in fisheries when data are limited. *North American Journal of Fisheries Management* 21(3): 482-497.

### MID-ATLANTIC | Spatial Analysis & Marine Protected Areas Research

**Kasperski, S.** and R. Weiland. 2010. When Is It Optimal To Delay Harvesting? The Role of Ecological Services In The Northern Chesapeake Bay Oyster Fishery. *Marine Resource Economics* 24(4): 361-385.

### MID-ATLANTIC | Recreational Fisheries Economics Research

**Wallmo, K.** and **B. Gentner**. 2008. Catch-and-release fishing: a comparison of intended and actual behavior of marine anglers. *North American Journal of Fisheries Management* 28(5): 1459-1471.

Massey, D., S. Newbold,, and **B. Gentner**. 2006. Valuing water quality changes using a bioeconomic model of a coastal recreational fishery. *Journal of Environmental Economics and Management* 52(1): 482-500.

Massey, M., S. Newbold, and **B. Gentner**. 2005. The effects of water quality on coastal recreation flounder fishing. NCEE Working Paper Series No. 05-03. National Center for Environmental Economics (NCEE), Environmental Protection Agency.

**Thunberg, E.** and J. Milon. 2002. Projecting recreational fishing participation. *Recreational Fisheries Ecological, Economic and Social Evaluation*, T. J. Pitcher and C. Hollingworth, eds., pp. 63-73. United Kingdom: Blackwell Science.

**Steinback, S.** and **B. Gentner**. 2001. Marine Angler Expenditures in the Northeast Region, 1998. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-F/SPO-4.

### MID-ATLANTIC | Sociocultural Fisheries Research

**Olson, J.** and **P. Clay**. 2001. An Overview of the Social and Economic Survey Administered During Round II of the Northeast Multispecies Fishery Disaster Assistance Program. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-NE-164, 80p. Available at: <http://www.nefsc.noaa.gov/publications/tm/tm164/tm164.pdf>.

## South Atlantic

### SOUTH ATLANTIC | Commercial Fisheries Economics Research

**Crosson, S.** 2015. Anticipating exit from North Carolina's commercial fisheries. Forthcoming in *Society and Natural Resources*.

## Publications

---

Shideler, G., **D. Carter**, **C. Liese**, and **J. Serafy**. 2015. Lifting the goliath grouper harvest ban: Angler perspectives and willingness to pay. *Fisheries Research* 161(Jan): 156-165.

Yandle, T., and **S. Crosson**. 2015. Whatever Happened to the Wreckfish Fishery? An Evaluation of the Oldest Finfish ITQ Program in the United States. *Marine Resource Economics* 30(2): 193-217.

Fleming, C., F. Tonioli, and **J. Agar**. 2014. A review of principal coastal economic sectors within the southeast United States and U.S. Caribbean. NOAA Tech. Memo. NMFS-SEFSC-669, 44 p. DOI: 10.7289/V5J10135.

**Tokitch, B.**, C. Meindl, A. Hoare, and **M. Jepson**. 2012. Stakeholder Perceptions of the Northern Gulf of Mexico Grouper and Tilefish Individual Fishing Quota Program. *Marine Policy* 36: 34-41.

**Walter, J.**, **E. Orbesen**, **C. Liese**, and **J. Serafy**. 2012. Can Circle Hooks Improve Western Atlantic Sailfish, *Istiophorus Platypterus*, Populations? *Bulletin of Marine Science* 88(3): 755-770.

**Crosson, S.** 2011. Resistance to Alternative Management in Fisheries: Economic and Cultural Considerations of North Carolina's Commercial Fishers. *Politics and the Life Sciences* 30(2): 31-42.

Matos-Caraballo, D. and **J. Agar**. 2011. Census of Active Commercial Fishermen in Puerto Rico. 2008. *Marine Fisheries Review* 73(1): 13-27.

Tonioli, F. and **J. Agar**. 2011. Synopsis of Puerto Rican Commercial Fisheries. NOAA Tech. Memo. NMFS-SEFSC-622, 47p.

**Crosson, S.** 2010. Trends in the South Atlantic Golden Crab Fishery. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-608, 24p.

**Perrusso, L.**, R. Weldon, and S. Larkin. 2005. Predicting optimal targeting strategies in multispecies fisheries: a portfolio approach. *Marine Resource Economics* 20(1): 25-45.

**Thunberg, E.** 2004. Buyback programs for overcapitalized fisheries: approaches, experiences, and impacts for Southeast fisheries: discussion. *Journal of Agricultural & Applied Economics* 36(2): 347-349.

Porter, R., M. Wendt, **M. Travis**, and I. Strand. 2001. Cost-earnings Study of the Atlantic-based U.S. Pelagic Long-line Fleet. SOEST Publication 01-02, JIMAR Contribution 01-337, 102p.

**Waters, J.**, R. Rhodes, and R. Wiggers. 2001. Description of Economic Data Collected with Random Sample of Commercial Reef Fish Boats in the Florida Keys. U.S. Dept. of Commerce. NOAA Technical Report NMFS-154, 45p.

### **SOUTH ATLANTIC | Commercial Fisheries Economics Research**

Fleming, C., F. Toniolo, and **J. Agar**. 2014. A review of principal coastal economic sectors within the southeast United States and U.S. Caribbean. NOAA Tech. Memo. NMFS-SEFSC-669, 44p. DOI: 10.7289/V5J10135

### **SOUTH ATLANTIC | Recreational Fisheries Economics Research**

**Liese, C.** and **D. Carter**. 2011. Collecting Economic Data from the For-Hire Fishing Sector: Lessons from a Cost and Earnings Survey of the Southeast U.S. Charter Boat Industry, 14p. In: Beard, T. D., Jr., A. J. Loftus, and R. Arlinghaus, (eds). *The Angler and the Environment*. American Fisheries Society, Bethesda, MD.

**Marvasti, A.** 2010. A Welfare Estimation of Beach Recreation with Aggregate Data. *Applied Economics* 42(1-3): 291-96.

**Carter, D.** and D. Letson. 2009. Structural vector error correction modeling of integrated sport fishery data. *Marine Resource Economics* 24(1): 19-41.

**Carter, D.,** C. Rivero, S. Aguilar, and K. Kleisner. 2008. South Florida Sportfishing Geodatabase (SFSGEO) design document. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-578, 27p. Available at: <http://www.sefsc.noaa.gov/sfsgeo/design.pdf>.

### **SOUTH ATLANTIC | Sociocultural Research**

**Stoffle, B.,** J. Contillo, **C. Grace,** and **D. Snodgrass.** 2011. The Socio-Economic Importance of Fishing in St. Thomas, USVI: An Examination of Fishing Community Designation. NOAA Tech. Memo. NMFS-SEFSC-623, 47p.

### **SOUTH ATLANTIC | Spatial Analysis & Marine Protected Areas Research**

**Carter, D.** 2003. Protected areas in marine resource management: another look at the economics and research issues. *Ocean and Coastal Management* 46(5): 439-456.

## **Gulf of Mexico**

### **GULF OF MEXICO | Commercial Fisheries Economics Research**

**Karnaukas, M., M. Schirripa, J. Craig,** G. Cook, C. Kelble, **J. Agar,** B. Black, D. Enfield, D. Lindo-Atichati, **B. Muhling, K. Purcell, P. Richards,** and C. Wang. 2015. Evidence of climate-driven ecosystem reorganization in the Gulf of Mexico. Forthcoming in *Global Change Biology*.

**Agar, J.** and **D. Carter.** 2014. Are the 2012 allocations of gag, red, and black grouper in the Gulf of Mexico economically efficient? U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-660, 40p.

**Agar, J.** and **D. Carter.** 2014. Is the 2012 allocation of red snapper in the Gulf of Mexico economically efficient? U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-659, 32p.

**Agar, J., J. Stephen, A. Strelcheck,** and A. Diagne. 2014. The Gulf of Mexico Red Snapper IFQ Program: The First Five Years. *Marine Resource Economics* 29(2): 177-198.

**Marvasti, A.** 2014. Crew Injuries and Fatalities, Employment Estimates, and Casualty Rates in the Gulf of Mexico Commercial Fisheries. NOAA Tech. Memo. NMFS-SEFSC-656, 17p.

Solis, D., J. del Corral, **L. Perruso,** and **J. Agar.** 2014. Evaluating the impact of individual fishing quotas (IFQs) on the technical efficiency and composition of the US Gulf of Mexico red snapper commercial fishing fleet. *Food Policy* 46: 74-83.

Solis, D., J. del Corral, **L. Perruso,** and **J. Agar.** 2014. Individual fishing quotas and fishing capacity in the US Gulf of Mexico red snapper fishery. *Australian Journal of Agricultural and Resource Economics* 58: 1-23.

## Publications

---

Solis, D., **L. Perruso**, J. del Corral, **B. Stoffle**, and D. Letson. 2013. Measuring the initial economic effects of hurricanes on commercial fish production: the US Gulf of Mexico grouper (*Serranidae*) fishery. *Natural Hazards* 66(2): 271-289.

**Liese, C.**, and **M. Travis**. 2010. The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Implementation and Descriptive Results for 2008. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-601, 99p. Available at: <http://www.sefsc.noaa.gov/docs/ShrimpEconTM601.pdf>.

**Liese, C.**, **M. Travis** and **J. Waters**. 2009. The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Implementation and Descriptive Results for 2007. U.S. Dept. of Commerce. NOAA Technical Memorandum NMFS-SEFSC-590, 97p. Available at <http://www.sefsc.noaa.gov/docs/ShrimpEconTM590.pdf>.

**Liese, C.**, **M. Travis**, D. Pina, and **J. Waters**. 2009. The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Report on the Design, Implementation, and Descriptive Results for 2006. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-584, 91p. Available at: [http://aquaticcommons.org/2106/1/tm\\_584.pdf](http://aquaticcommons.org/2106/1/tm_584.pdf).

Nance, J., W. Keithly, Jr., C. Caillouet, Jr., J. Cole, W. Gaidry, B. Gallaway, W. Griffin, R. Hart, and **M. Travis**. 2008. Estimation of Effort, Maximum Sustainable Yield, and Maximum Economic Yield in the Shrimp Fishery of the Gulf of Mexico. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-570, 71p.

Keithly, W., H. Diop, R. Kazmierczak, and **M. Travis**. 2006. The Impacts of Imports, Particularly Farm-Raised Product, on the Southeast U.S. Shrimp Processing Sector. Report to the Gulf and South Atlantic Fisheries Foundation, 50p.

**Travis, M.** and W. Griffin. 2004. Update on the Economic Status of the Gulf of Mexico Commercial Shrimp Fishery. SERO-ECON-04-01. National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, Florida, 10p.

Weninger, Q. and **J. Waters**. 2003. Economic benefits of management reform in the Northern Gulf of Mexico reef fish fishery. *Journal of Environmental Economics and Management* 46(2): 207-230.

**Waters, J.** 2001. Quota management in the commercial red snapper fishery. *Marine Resource Economics* 16(1): 65-78.

**Travis, M.** 2000. Data and Modeling Issues in the Gulf of Mexico's Shrimp Fishery. SERO-ECON-00-14. National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, Florida, 17p.

### GULF OF MEXICO | Habitat Economics Research

**Minello, T.**, **L. Rozas**, **P. Caldwell**, and **C. Liese**. 2012. A Comparison of Salt Marsh Construction Costs with the Value of Exported Shrimp Production. *Wetlands* 32(5): 791-799.

### GULF OF MEXICO | Recreational Fisheries Economics Research

**Carter, D.** and **C. Liese**. 2010. Hedonic Valuation of Sportfishing Harvest. *Marine Resource Economics* 25(4): 391-407.

**Carter, D.**, **J. Agar**, and **J. Waters**. 2008. Economic Framework for Fishery Allocation Decisions with an Application to the Gulf of Mexico Red Grouper. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-576, 95p. Available at: <http://www.sefsc.noaa.gov/docs/tm576.pdf>.

Oh, C.-O., Ditton, R., **B. Gentner**, and R. Reichers. 2005. A stated preference choice approach to understanding angler preferences for management options. *Human Dimensions of Wildlife* 10(3): 173-186.

### GULF OF MEXICO | Sociocultural Fisheries Research

Blount, B., S. Jacob, P. Weeks, and **M. Jepson**. 2015. Testing Cognitive Ethnography: Mixed-Methods in Developing Indicators of Well-Being in Fishing Communities. *Human Organization* 74(1).

Jacob, S., P. Weeks, B. Blount, and **M. Jepson**. 2013. Development and Evaluation of Social Indicators of Vulnerability and Resiliency for Fishing Communities in the Gulf of Mexico. *Marine Policy* 37(1): 86-95.

Jacob, S., P. Weeks, B. Blount, and **M. Jepson**. 2010. Exploring Fishing Dependence in Gulf Coast Communities. *Marine Policy* 34(6): 1307-1314.

**Ingles, P.** 2008. Sunken boats, tangled nets, and disrupted lives: impacts of Hurricane Katrina on two coastal areas of Louisiana. *Mitigating Impacts of Natural Disasters on Fisheries Ecosystems*, K.D. McLaughlin, ed. American Fisheries Society, Bethesda, Maryland.

## Caribbean

### CARIBBEAN | Commercial Fisheries Economics Research

**Agar, J., J. Waters**, M. Valdes-Pizzini, M. Shivilani, T. Murray, J. Kirkley, and D. Suman. 2008. U.S. Caribbean Fish Trap Fishery Socioeconomic Study. *Bulletin of Marine Science* 82(3): 315-331.

### CARIBBEAN | Spatial Analysis & Marine Protected Areas Research

Karras, C. and **J. Agar**. 2009. Cruzan fisher's perspectives on the performance of the Buck Island Reef National Monument and the red hind seasonal closure. *Ocean and Coastal Management* 52: 578-585.

### CARIBBEAN | Sociocultural Fisheries Research

Valdes-Pizzini, M., **J. Agar**, K. Kitner, C. Garca-Quijano, M. Tust, and F. Forrestal. 2010. Cruzan Fisheries: A rapid assessment of the historical, social, cultural and economic processes that shaped coastal communities' dependence and engagement in fishing in the island of St. Croix, U.S. Virgin Islands. NOAA Series on U.S. Caribbean Fishing Communities. NOAA Tech. Memo. NMFS-SEFSC-597, 144p.

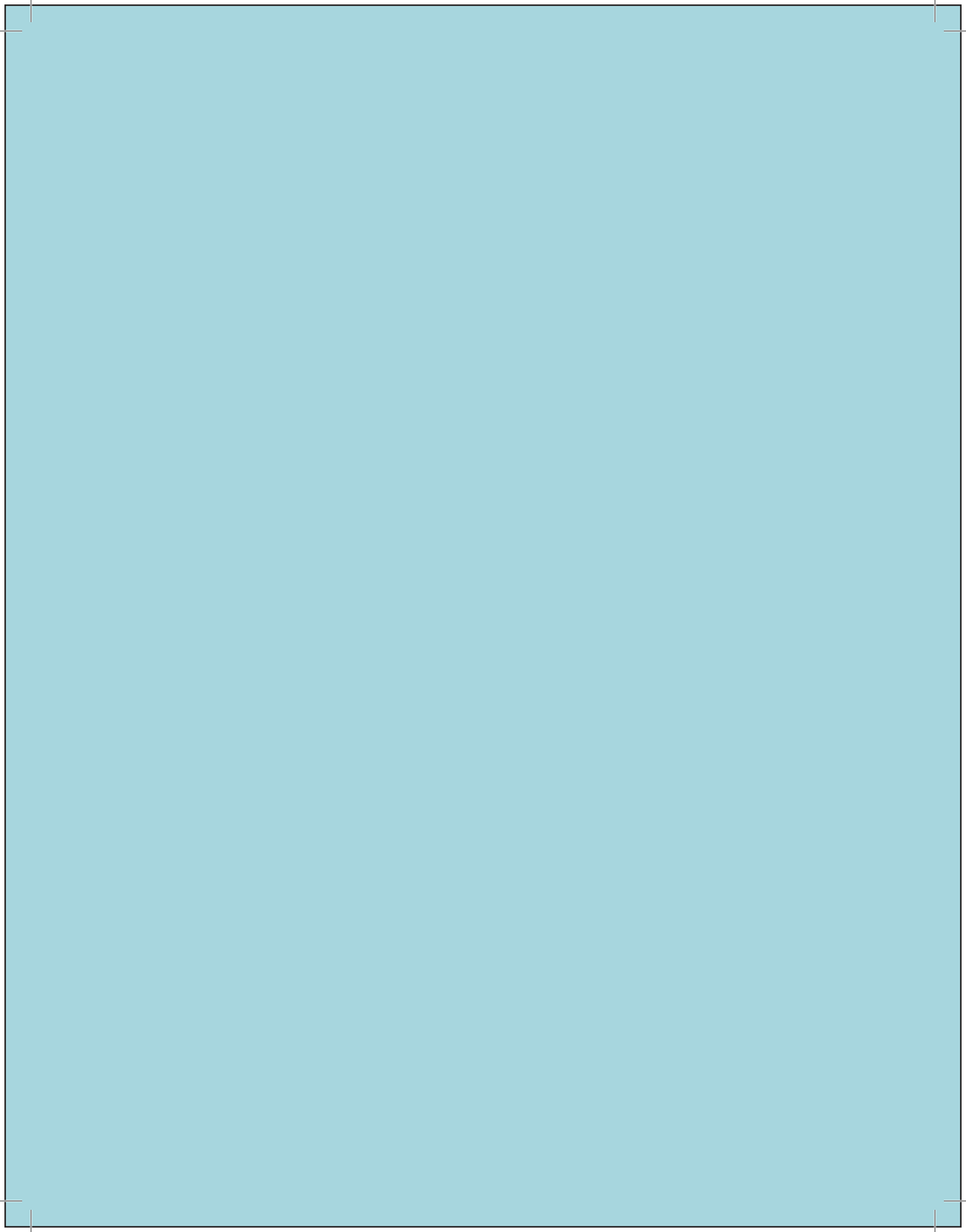
Tonioli, F. and **J. Agar**. 2009. Extending the Bajo de Sico, Puerto Rico, Seasonal Closure: An Examination of Small-scale Fishermen's Perceptions of Possible Socio-economic Impacts on Fishing Practices, Families and Community. *Marine Fisheries Review* 71(2): 15-23.

Pollnac, R., **S. Abbott-Jamieson**, C. Smith, M. Miller, **P. Clay**, and B. Oles. 2008. Toward a Model for Fisheries Social Impact Assessment. *Marine Fisheries Review* 68(1-4): 1-18.

### CARIBBEAN | U.S. Territories & International Fisheries Research

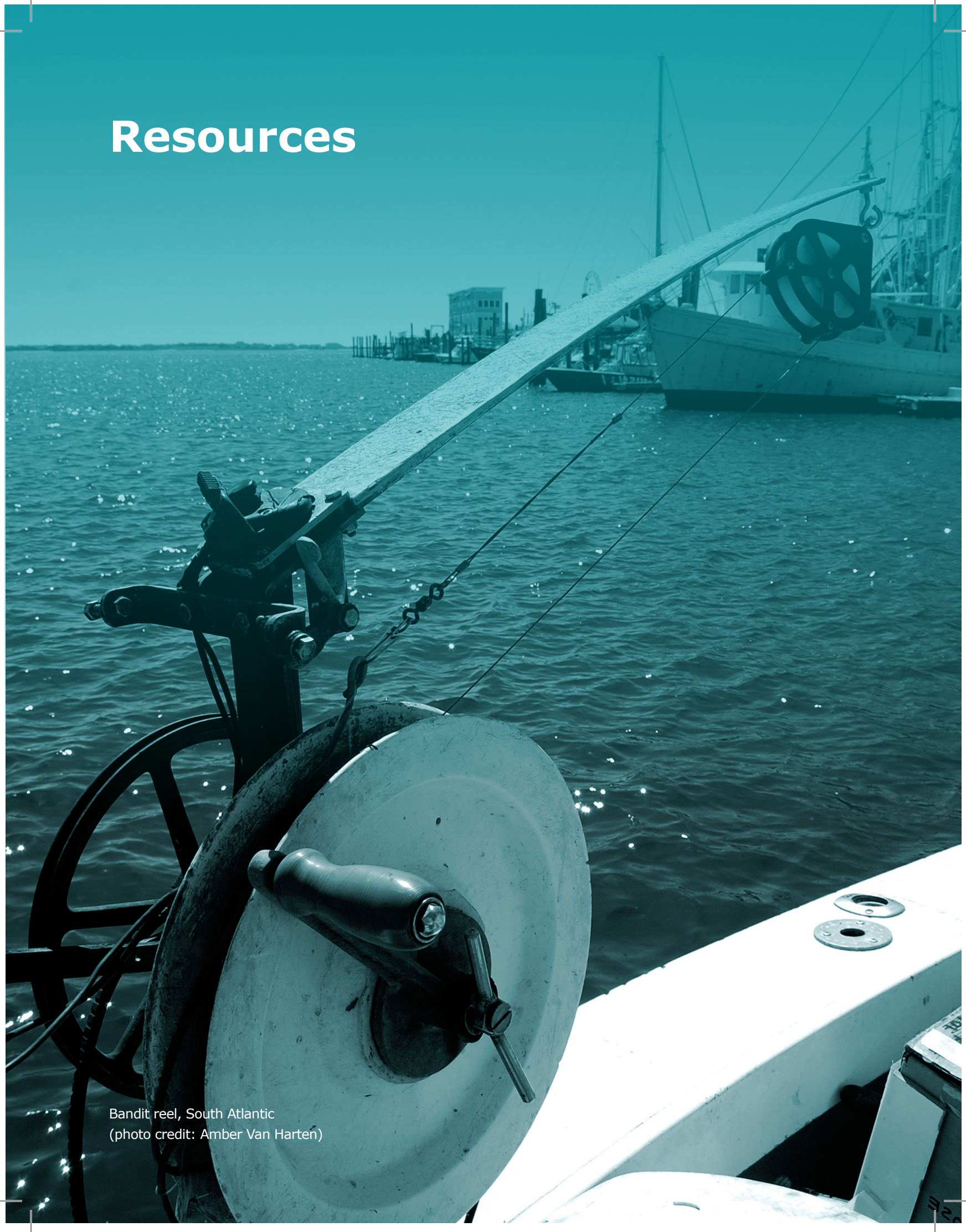
**Agar, J.**, M. Shivilani, **J. Waters**, M. Valdes-Pizzini, T. Murray, J. Kirkley, and D. Suman. 2005. U.S. Caribbean Fish Trap Fishery Costs and Earnings Study. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-534, 127p. Available at: [http://www.sefsc.noaa.gov/docs/Trap\\_May2006.pdf](http://www.sefsc.noaa.gov/docs/Trap_May2006.pdf).





# Resources

Bandit reel, South Atlantic  
(photo credit: Amber Van Harten)





## Resources

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### U.S.

#### Federal Agencies

- Economics & Social Analysis Division, Office of Science & Technology, NOAA Fisheries  
[www.st.nmfs.noaa.gov/economics/](http://www.st.nmfs.noaa.gov/economics/)
- Office of Science & Technology, NOAA Fisheries | <https://www.st.nmfs.noaa.gov/>
- Marine Recreational Information Program  
<http://www.st.nmfs.noaa.gov/recreational-fisheries/index>
- Bureau of Oceans and International Environmental and Scientific Affairs, U.S. Department of State  
[www.state.gov/e/oes/ocns/fish/](http://www.state.gov/e/oes/ocns/fish/)

### NORTH PACIFIC

#### Federal Agencies

- Economic & Social Sciences Research, Alaska Fisheries Science Center, NOAA Fisheries  
<http://www.afsc.noaa.gov/REFM/Socioeconomics/default.php>
- Alaska Fisheries Science Center, NOAA Fisheries | [www.afsc.noaa.gov](http://www.afsc.noaa.gov)
- Alaska Regional Office, NOAA Fisheries | <https://alaskafisheries.noaa.gov/>
- Alaska Region, U.S. Fish & Wildlife Service | <http://www.fws.gov/alaska/>
- District 17, U.S. Coast Guard | [www.uscg.mil/D17](http://www.uscg.mil/D17)

#### State Agencies

- Alaska Department of Fish & Game | [www.adfg.state.ak.us](http://www.adfg.state.ak.us)

#### Councils & Commissions

- North Pacific Fishery Management Council | [www.npfmc.org](http://www.npfmc.org)
- Pacific States Marine Fisheries Commission | [www.psmfc.org](http://www.psmfc.org)
- Fisheries Economics Data Program Pacific States Marine Fisheries Commission | [www.psmfc.org/efin](http://www.psmfc.org/efin)
- International Pacific Halibut Commission | [www.iphc.int](http://www.iphc.int)

### PACIFIC

#### Federal Agencies

- Economics, Groundfish Analysis Program, Northwest Fisheries Science Center, NOAA Fisheries  
<http://www.nwfsc.noaa.gov/research/divisions/fram/economic/>
- Human Dimensions Program, Northwest Fisheries Science Center, NOAA Fisheries  
[www.nwfsc.noaa.gov/research/divisions/cbd/humandim](http://www.nwfsc.noaa.gov/research/divisions/cbd/humandim)
- Northwest Fisheries Science Center, NOAA Fisheries | [www.nwfsc.noaa.gov](http://www.nwfsc.noaa.gov)
- West Coast Regional Office, NOAA Fisheries | [www.westcoast.fisheries.noaa.gov](http://www.westcoast.fisheries.noaa.gov)
- Socioeconomics Research, Southwest Fisheries Science Center, NOAA Fisheries  
<https://swfsc.noaa.gov/textblock.aspx?id=1038&ParentMenuId=109>
- Southwest Fisheries Science Center | <https://swfsc.noaa.gov/>
- Pacific Region, U.S. Fish & Wildlife Service | [www.fws.gov/pacific](http://www.fws.gov/pacific)
- California & Nevada, U.S. Fish & Wildlife Service | [www.fws.gov/cno](http://www.fws.gov/cno)
- District 13, U.S. Coast Guard | [www.uscg.mil/D13](http://www.uscg.mil/D13)

#### State Agencies

- California Department of Fish & Game | [www.wildlife.ca.gov](http://www.wildlife.ca.gov)
- Oregon Department of Fish & Wildlife | [www.dfw.state.or.us](http://www.dfw.state.or.us)
- Washington Department of Fish & Wildlife | <http://wdfw.wa.gov/>

#### Councils & Commissions

- Pacific Fishery Management Council | [www.pcouncil.org](http://www.pcouncil.org)
- Pacific States Marine Fisheries Commission | [www.psmfc.org](http://www.psmfc.org)
- Fisheries Economics Data Program - Pacific States Marine Fisheries Commission | [www.psmfc.org/efin](http://www.psmfc.org/efin)
- International Pacific Halibut Commission | [www.iphc.int](http://www.iphc.int)

## WESTERN PACIFIC

### Federal Agencies

- Socioeconomics & Planning Group, Office of the Director, Pacific Islands Fisheries Science Center, NOAA Fisheries | [www.pifsc.noaa.gov/socioeconomics/](http://www.pifsc.noaa.gov/socioeconomics/)
- Pacific Islands Fisheries Science Center, NOAA Fisheries | [www.pifsc.noaa.gov](http://www.pifsc.noaa.gov)
- Pacific Islands Regional Office, NOAA Fisheries | [www.fpir.noaa.gov](http://www.fpir.noaa.gov)
- Pacific Region, U.S. Fish & Wildlife Service | [www.fws.gov/pacific](http://www.fws.gov/pacific)
- District 14, U.S. Coast Guard | [www.uscg.mil/d14](http://www.uscg.mil/d14)

### State Agencies

- Hawai'i Department of Land & Natural Resources | [www.hawaii.gov/dlnr](http://www.hawaii.gov/dlnr)
- Guam Office of the Governor | [www.guamgovernor.net](http://www.guamgovernor.net)
- Department of Marine & Wildlife Resources, American Samoa Office of the Governor
- Division of Fish & Wildlife, Commonwealth of the Northern Mariana Islands | <http://www.cnmi-dfw.com/>

### Councils & Commissions

- Western Pacific Fishery Management Council | [www.wpcouncil.org](http://www.wpcouncil.org)

## NEW ENGLAND

### Federal Agencies

- Social Sciences Branch, Northeast Fisheries Science Center, NOAA Fisheries | [www.nefsc.noaa.gov/read/socialsci](http://www.nefsc.noaa.gov/read/socialsci)
- Northeast Fisheries Science Center, NOAA Fisheries | [www.nefsc.noaa.gov](http://www.nefsc.noaa.gov)
- Greater Atlantic Regional Fisheries Office, NOAA Fisheries | [www.greateratlantic.fisheries.noaa.gov](http://www.greateratlantic.fisheries.noaa.gov)
- Northeast Region, U.S. Fish & Wildlife Service | [www.fws.gov/northeast](http://www.fws.gov/northeast)
- District 1, U.S. Coast Guard | [www.uscg.mil/D1](http://www.uscg.mil/D1)

### State Agencies

- Maine Department of Marine Resources | [www.maine.gov/dmr/index.htm](http://www.maine.gov/dmr/index.htm)
- Rhode Island Department of Environmental Management | [www.dem.ri.gov](http://www.dem.ri.gov)
- Massachusetts Division of Marine Fisheries | [www.mass.gov/eea/land-use-habitats/marine-fisheries/](http://www.mass.gov/eea/land-use-habitats/marine-fisheries/)
- Connecticut Department of Environmental Protection | [www.ct.gov/dep/site/](http://www.ct.gov/dep/site/)
- New Hampshire Fish & Game Department | [www.wildlife.state.nh.us](http://www.wildlife.state.nh.us)

### Councils & Commissions

- New England Fishery Management Council | [www.nefmc.org](http://www.nefmc.org)
- Atlantic States Marine Fisheries Commission | [www.asmfmc.org](http://www.asmfmc.org)

## Resources

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### MID-ATLANTIC

#### Federal Agencies

- Social Sciences Branch, Northeast Fisheries Science Center, NOAA Fisheries | [www.nefsc.noaa.gov/read/socialsci](http://www.nefsc.noaa.gov/read/socialsci)
- Northeast Fisheries Science Center, NOAA Fisheries | [www.nefsc.noaa.gov](http://www.nefsc.noaa.gov)
- Greater Atlantic Regional Fisheries Office, NOAA Fisheries | [www.greateratlantic.fisheries.noaa.gov](http://www.greateratlantic.fisheries.noaa.gov)
- Northeast Region, U.S. Fish & Wildlife Service | [www.fws.gov/northeast](http://www.fws.gov/northeast)
- District 5, U.S. Coast Guard | [www.uscg.mil/D5](http://www.uscg.mil/D5)

#### State Agencies

- Bureau of Marine Resources, New York Department of Environmental Conservation  
[www.dec.ny.gov/about/796.html](http://www.dec.ny.gov/about/796.html)
- New Jersey Division of Fish & Wildlife | [www.state.nj.us/dep/fgw](http://www.state.nj.us/dep/fgw)
- Pennsylvania Fish & Boat Commission | <http://fishandboat.com/>
- Delaware Division of Fish & Wildlife | [www.fw.delaware.gov](http://www.fw.delaware.gov)
- Fisheries Service, Maryland Department of Natural Resources | [www.dnr.state.md.us/fisheries](http://www.dnr.state.md.us/fisheries)
- Virginia Marine Resources Commission | [www.mrc.state.va.us](http://www.mrc.state.va.us)

#### Councils & Commissions

- Mid-Atlantic Fishery Management Council | [www.mafmc.org](http://www.mafmc.org)
- Atlantic States Marine Fisheries Commission | [www.asmfc.org](http://www.asmfc.org)

### SOUTH ATLANTIC

#### Federal Agencies

- Social Science Research Group, Southeast Fisheries Science Center, NOAA Fisheries  
[www.sefsc.noaa.gov/socialscience.jsp](http://www.sefsc.noaa.gov/socialscience.jsp)
- Southeast Fisheries Science Center, NOAA Fisheries | [www.sefsc.noaa.gov](http://www.sefsc.noaa.gov)
- Southeast Regional Office, NOAA Fisheries | <http://sero.nmfs.noaa.gov/>
- Southeast Region, U.S. Fish & Wildlife Service | [www.fws.gov/southeast](http://www.fws.gov/southeast)
- Southwest Region, U.S. Fish & Wildlife Service | [www.fws.gov/southwest](http://www.fws.gov/southwest)
- District 7, U.S. Coast Guard | [www.uscg.mil/D7](http://www.uscg.mil/D7)

#### State Agencies

- Division of Marine Fisheries, North Carolina Department of Environment & Natural Resources  
<http://portal.ncdenr.org/web/mf/>
- Marine Resources Division, South Carolina Department of Natural Resources | [www.dnr.sc.gov](http://www.dnr.sc.gov)
- Coastal Resources Division, Georgia Department of Natural Resources | <http://www.coastalgadnr.org/>
- Florida Fish & Wildlife Conservation Commission | <http://myfwc.com/>

#### Councils & Commissions

- South Atlantic Fishery Management Council | [www.safmc.net](http://www.safmc.net)
- Atlantic States Marine Fisheries Commission | [www.asmfc.org](http://www.asmfc.org)



## GULF OF MEXICO

### Federal Agencies

- Social Science Research Group, Southeast Fisheries Science Center, NOAA Fisheries  
[www.sefsc.noaa.gov/socialscience.jsp](http://www.sefsc.noaa.gov/socialscience.jsp)
- Southeast Fisheries Science Center, NOAA Fisheries | [www.sefsc.noaa.gov](http://www.sefsc.noaa.gov)
- Southeast Regional Office, NOAA Fisheries | <http://sero.nmfs.noaa.gov/>
- Southeast Region, U.S. Fish & Wildlife Service | [www.fws.gov/southeast](http://www.fws.gov/southeast)
- Southwest Region, U.S. Fish & Wildlife Service | [www.fws.gov/southwest](http://www.fws.gov/southwest)
- District 8, U.S. Coast Guard | [www.uscg.mil/D8](http://www.uscg.mil/D8)

### State Agencies

- Florida Fish & Wildlife Conservation Commission | <http://myfwc.com/>
- Marine Resources Division, Alabama Department of Conservation & Natural Resources  
[www.outdooralabama.com](http://www.outdooralabama.com)
- Mississippi Department of Marine Resources | [www.dmr.state.ms.us](http://www.dmr.state.ms.us)
- Louisiana Department of Wildlife & Fisheries | <http://www.wlf.louisiana.gov/>
- Texas Parks & Wildlife Department | [www.tpwd.state.tx.us](http://www.tpwd.state.tx.us)

### Councils & Commissions

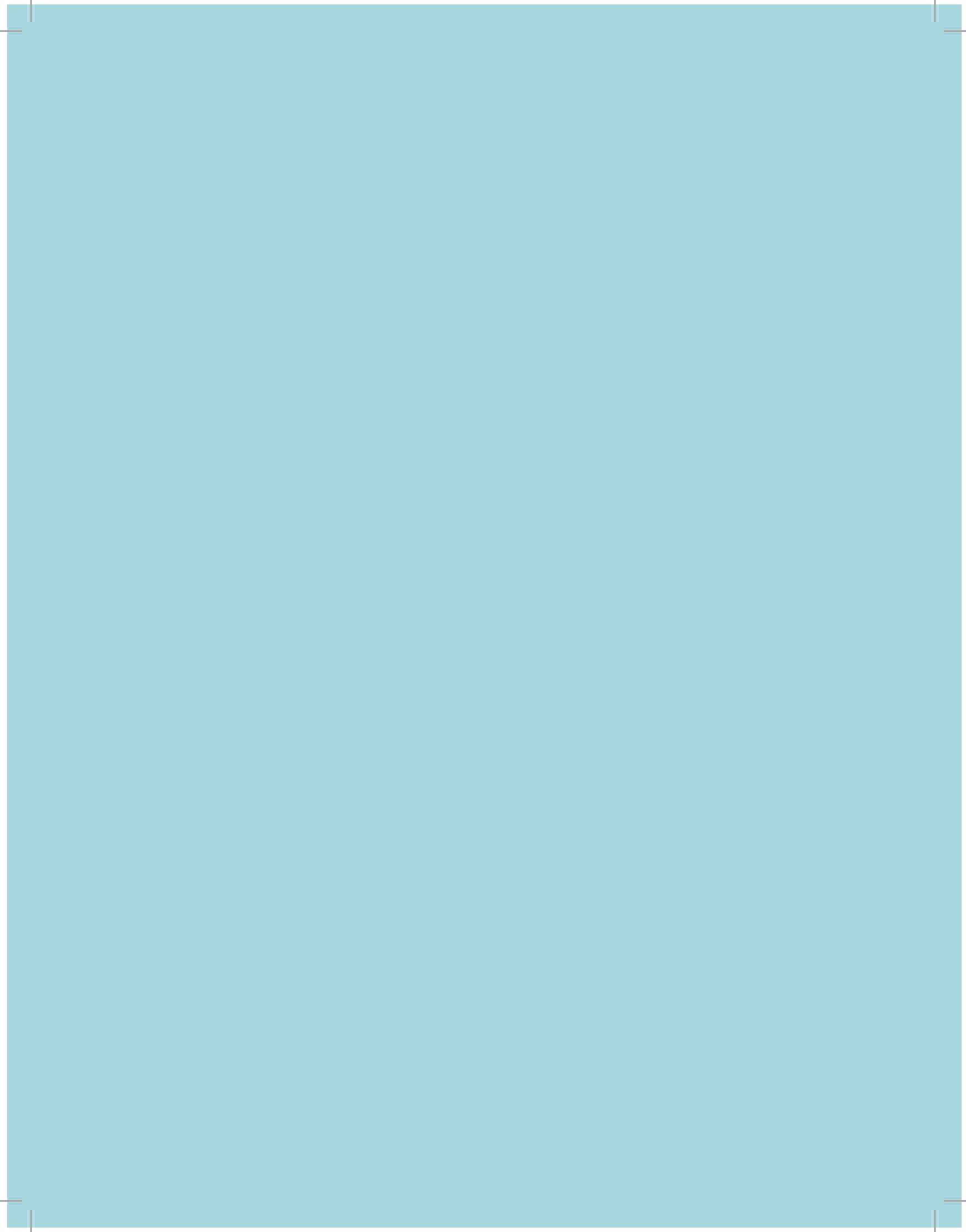
- Gulf of Mexico Fishery Management Council | [www.gulfcouncil.org](http://www.gulfcouncil.org)
- Gulf States Marine Fisheries Commission | [www.gsmfc.org](http://www.gsmfc.org)

## PROFESSIONAL ORGANIZATIONS

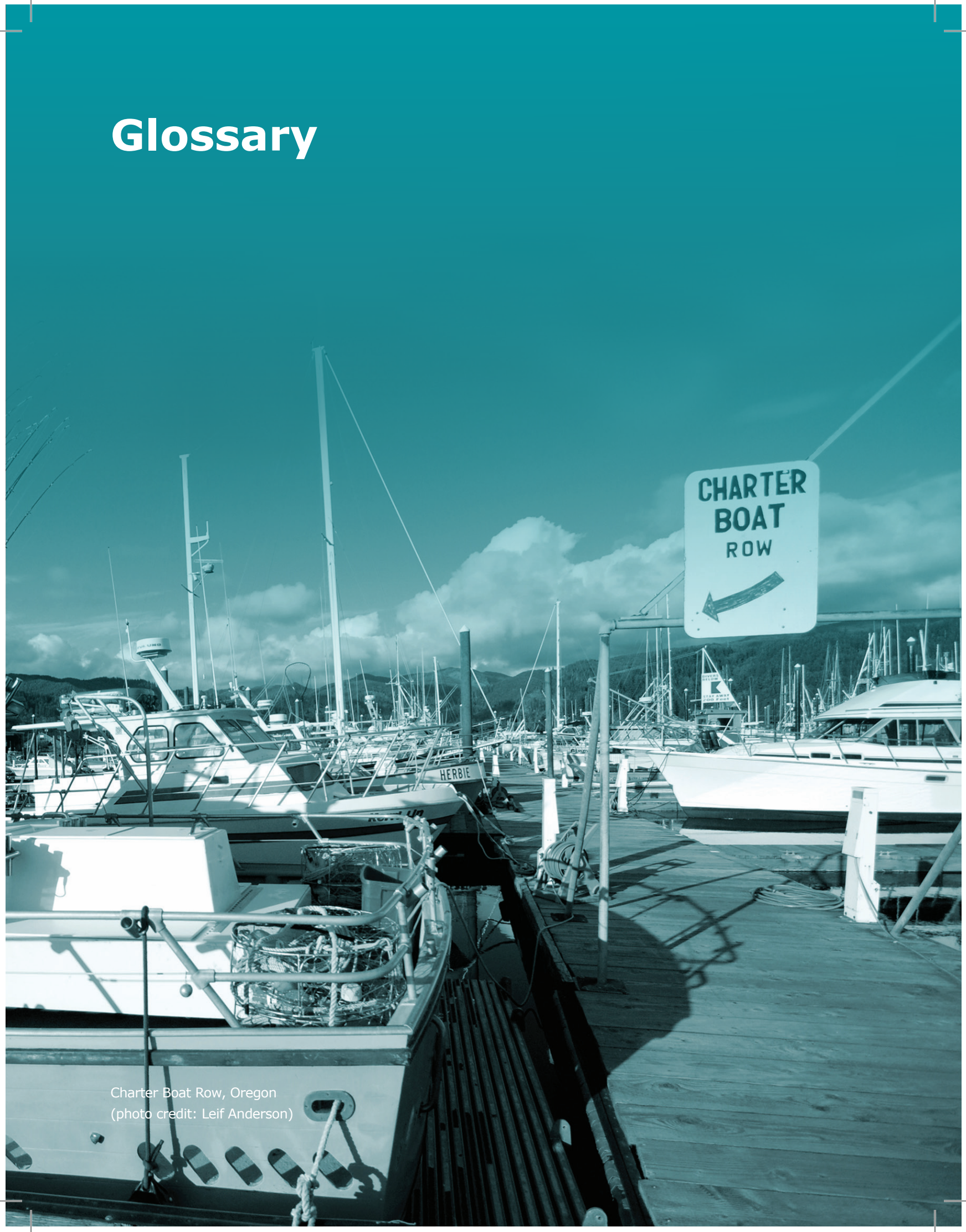
- North American Association of Fisheries Economists | <http://oregonstate.edu/dept/IIFET/NAAFE/Home.html>
- International Institute of Fisheries Economics & Trade | <http://oregonstate.edu/dept/iifet/>

## OTHER ORGANIZATIONS & INFORMATION

- Organisation for Economic Co-operation & Development | <http://www.oecd.org/>
- Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations  
<http://www.fao.org/fishery/capture/en>
- Marine Stewardship Council | [www.msc.org](http://www.msc.org)



# Glossary



Charter Boat Row, Oregon  
(photo credit: Leif Anderson)

## Glossary

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**Angler<sup>1</sup>** – A person catching fish or shellfish with no intent to sell, including people releasing the catch. Also known as a recreational fisherman.

**Annual Payroll<sup>2</sup>** – Includes all forms of compensation such as salaries, wages, reported tips, commissions, bonuses, vacation allowances, sick-leave pay, employee contributions to qualified pension plans, and the value of taxable fringe benefits. For corporations, it includes amounts paid to officers and executives; for unincorporated businesses, it does not include profit or other compensation of proprietors or partners. Payroll is reported before deductions for Social Security, income tax, insurance union dues, etc.

**Annual Receipts<sup>3</sup>** – Includes gross receipts, sales, commissions, and income from trades and businesses, as reported on annual business income tax returns. Business income consists of all payments received for services rendered by nonemployer businesses, such as payments received as independent agents and contractors. The composition of nonemployer receipts may differ from receipts data published for employer establishments. For example, for wholesale agents and brokers without payroll (nonemployers), the receipts item contains commissions or earnings. In contrast, for wholesale agents and brokers with payroll (employers), the sales and receipts item published in the Economic Census represents the value of the goods involved in the transactions.

**Buyback Program<sup>4</sup>** – A management tool available to fishery managers intended to ease fishing-related pressure on marine resources. Fishing vessels are purchased by the government or by the fishing industry itself. Then they are removed from a specific fishery where fish stocks or stock complexes are considered overfished or subject to overfishing.

**Bycatch<sup>1</sup>** – Species other than the primary target species that are caught incidental to the harvest of the primary species. Bycatch may be retained or discarded; discards may occur for regulatory or economic reasons.

**Catch<sup>1</sup>** – 1. To undertake any activity that results in taking fish out of its environment dead or alive, or to bring fish on board a vessel dead or alive; 2. The total number (or weight) of fish caught by fishing operations. Catch should include all fish killed by the act of fishing, not just those landed; 3. The component of fish encountering fishing gear, which is retained by the gear. Catch is usually expressed in terms of wet weight. It refers sometimes to the total amount caught and sometimes only to the amount landed. The fish that are not landed, but returned to the sea, are called discards or bycatch. For this report, recreational catch refers to the total number of individual fish released (thrown back into the sea) and harvested (not thrown back into the sea) by recreational fishermen (anglers).

**Catch Share Program<sup>5</sup>** – This is a generic term used to describe a fishery management program that allocates a specific portion of the total fishery catch to individuals, cooperatives, communities or other entities, including sectors. The term encompasses more specific programs defined in legislation such as Limited Access Privilege Programs (LAPPs) and Individual Fishing Quotas (IFQs). Note that a catch share allocated to a sector is different from a general sectoral allocation or distribution to an entire segment of a fishery (such as a recreational sector allocation or a longline gear sector allocation). The two differ because the recipient of the catch share is responsible for terminating fishing activity when their specific share is reached.

**Coastal County<sup>6</sup>** – A coastal county meets one of the following criteria: 1) at least 15 percent of a county's total land area is located within the nation's coastal watershed; 2) a portion of or an entire county accounts for at least 15 percent of a coastal cataloging unit. Any U.S. county that meets these criteria is classified as coastal.

**Coastal County Angler** – For this report, a coastal county angler refers to a recreational fishermen who lives within a given state and within a coastal county of that state.



**Commercial Fishing Location Quotient (CFLQ)<sup>7</sup>** – For this report, the CFLQ is calculated as the ratio of a state’s distribution of employment in commercial fishing industries compared with the distribution of commercial fishing industries in the U.S. The CFLQ is calculated using the “Location Quotient Calculator” provided by the Bureau of Labor Statistics, U.S. Department of Labor.

**Community Development Quota Program (CDQ)<sup>1</sup>** – A program in western Alaska under which a percentage of the total allowable catch (TAC) of Bering Sea commercial fisheries is allocated to specific communities. Communities eligible for this program must be located within 50 miles of the Bering Sea coast or on an island within the Bering Sea; meet criteria established by the State of Alaska; be a village certified by the Secretary of the Interior pursuant to the Alaska Native Claims Settlement Act; and consist of residents who conduct more than half of their current commercial or subsistence fishing in the Bering Sea or waters surrounding the Aleutian Islands. Currently 7.5 percent of the TAC in the pollock, halibut, sablefish, crab and groundfish fisheries is allocated to the CDQ Program.

**Dedicated Access Privileges (DAPs)<sup>8</sup>** – As defined by the U.S. Commission on Ocean Policy, a DAP program assigns an individual or other entity access to a pre-determined portion of the annual catch in a particular fishery. In some cases, the privilege is transferable and may be bought and sold, creating a market. The term encompasses a range of tools, including access privileges assigned to individuals (that is, individual transferable quotas), and to groups or communities (for example, community development quotas, cooperatives, and area-based quotas). DAP programs are sometimes known as rights-based management, and are of 10 synonymous with Limited Access Privilege Programs (see “Limited Access Privilege Program”). However, “rights-based management” implies granting an individual the “right” to fish. With the exception of certain tribes, U.S. fishermen do not have inalienable rights to fish because the fishery resources of the U.S. belong to all people of the U.S. Under current law, fishermen are granted a “privilege” to fish, subject to certain conditions.

**Discards<sup>1</sup>** – To release or return a fish or other species to the sea, dead or alive, whether or not such fish or other species are brought fully on board a fishing vessel. Estimates of discards can be made in a variety of ways, including samples from observers and logbook records. Fish (or parts of fish) can be discarded for a variety of reasons such as having physical damage, being a non-target species for the trip, and compliance with management regulations like minimum size limits or quotas.

**Durable Equipment Expenditures or Durable Goods Expenditures<sup>9</sup>** – For this report, this term refers to expenses related to equipment used for recreational fishing activities. These expenses include the purchase of semi-durable goods (tackle, rods, reels, line, etc.); durable goods (motor boats and accessories, non-motorized boats, boating electronics, mooring, boat storage, boat insurance, and vehicles or homes); and angling accessories and multi-purpose items (magazines, club dues, saltwater angling-specific clothing, and camping gear).

**Ecolabel or Ecolabelling Scheme<sup>10</sup>** – In fisheries, ecolabelling schemes entitle a fishery product to bear a distinctive logo or statement that certifies that the fish has been harvested in compliance with specified conservation and sustainability standards. The logo or statement is intended to facilitate informed decisions by purchasers whose choices may promote and stimulate the sustainable use of fishery resources.



## Glossary

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**Economic Impact Model<sup>11,12</sup>** – Economic impact models capture how sales in a sector generate economic impacts directly in the sector in which the sale was made. The sales then ripple throughout the state and national economies as each dollar spent generates additional sales by other firms and consumers. The NOAA Fisheries Commercial Fishing & Seafood Industry Input/Output Model uses an IMPLAN platform to estimate the economic impacts associated with the harvesting of fish by U.S. commercial fishermen and other major components of the U.S. seafood industry. As used here, the term fish refers to the entire range of finfish, shellfish and other life (that is, sea urchins, seaweed, kelp and worms) from marine and freshwaters that are included in the landings data maintained by the National Marine Fisheries Service. The NOAA Fisheries Recreational Economic Impact Model, which also uses an IMPLAN platform, estimates the economic impacts generated by expenditures made by saltwater anglers.

**Economic Impacts<sup>11,12</sup>** – For this report, the economic impacts of the commercial fishing sector and seafood industry refer to the employment (full-time and part-time jobs), personal income, and output (sales by U.S. businesses) generated by the commercial harvest sector and other major components of the U.S. seafood industry. These components include processors and dealers, wholesalers and distributors, grocers, and restaurants. Economic impacts of recreational fishing activities refer to the amount of sales generated, the number of jobs supported, and the contribution to gross domestic product (GDP) by state (also known as value-added impacts) from expenditures related to recreational fishing.

**Effort<sup>1</sup>** – For this report, effort refers to the number of fishing trips taken by recreational fishermen (anglers). The term can also refer to the amount of time and fishing power used to harvest fish in commercial fisheries, including gear size, boat size and horsepower.

**Employee Compensation<sup>13</sup>** – This is related to Gross Domestic Product (GDP) by State and is an estimate of the sum of employee wages and salaries and supplements to wages and salaries. Wages and salaries are measured on an accrual, or “when earned” basis, which may be different from the measure of wages and salaries measured on a disbursement, or “when paid” basis. Wages and salaries and supplements of Federal military and civilian government employees stationed abroad are excluded from the measure of GDP by state.

**Employer Establishments<sup>14</sup>** – Businesses with payroll and paid employees with a single physical location at which business is conducted or services or industrial operations are performed. An employee establishment is not necessarily identical to a company or enterprise, which may consist of one or more establishments. When two or more activities are carried on at a single location under a single ownership, all activities generally are grouped together as a single establishment. The entire establishment is classified on the basis of its major activity, and all data are included in that classification.

**Endangered Species<sup>15</sup>** – As defined by the Endangered Species Act (ESA), an endangered species is any species which is in danger of extinction throughout all or a significant portion of its range. See also “Threatened Species.”

**Endangered Species Act (ESA)<sup>15</sup>** – The ESA was signed on December 28, 1973, and provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA replaced the Endangered Species Conservation Act of 1969. Congress has amended the ESA several times.

**Expenditures<sup>9</sup>** – For this report, expenditures are related to recreational fishing activities and described as being one of two types: 1) expenditures related to a specific fishing trip; or 2) durable equipment expenditures.

**Ex-Vessel<sup>10</sup>** – Refers to activities that occur when a commercial fishing boat lands or unloads a catch. For example, the price for the catch that a captain receives at the point of landing is an ex-vessel price.

**Exclusive Economic Zone (EEZ)<sup>1</sup>** – The EEZ is the area that extends 200 nautical miles from the seaward boundaries of the coastal states. The seaward boundary for most states is 3 nautical miles with the exceptions of Texas, Puerto Rico and the Gulf Coast of Florida, which is 9 nautical miles. The U.S. claims and exercises sovereign rights and exclusive fishery management authority over all fish and continental shelf resources through this 200-nautical-mile boundary.

**Fish Stock<sup>1</sup>** – A fish stock refers to the living resources in the community or population from which catches are taken in a fishery. The term “fish stock” usually implies that the particular population is more or less isolated from other stocks of the same species and hence self-sustaining. In a particular fishery, the fish stock may be one or several species of fish. Here, it also includes commercial invertebrates and plants.

**Fishery Management Council (FMC) or Regional Fishery Management Council<sup>4</sup>** – A regional fisheries management body established by the Magnuson-Stevens Act to manage fishery resources in eight designated regions of the United States.

**Fishery Management Plan (FMP)<sup>4</sup>** – 1. A document prepared under supervision of the appropriate fishery management council (FMC) for management of stocks of fish judged to require management. The plan must generally be formally approved. An FMP includes data, analyses and management measures; 2. A plan containing conservation and management measures for fishery resources, and other provisions required by the Magnuson-Stevens Act, developed by fishery management councils or the Secretary of Commerce.

**Fishing Cooperatives<sup>4</sup>** – A market-based fisheries management tool where access to fisheries resources is limited to a specific group of fishermen. See also “Catch Share Program.”

**Fishing Day** – For this report, a fishing day refers to a partial or full day spent in recreational fishing and can be different from a fishing trip. For example, one fishing trip can consist of more than 1 fishing day. This term is used in the Alaska recreational fishing tables.

**Fishing Effort<sup>10</sup>** – The amount of fishing gear of a specific type used on the fishing grounds over a given unit of time. For example, hours trawled per day, number of hooks set per day, or number of hauls of a beach seine per day. When two or more kinds of gear are used, the respective efforts must be adjusted to some standard type before being added. For recreational fishing activities, fishing effort refers to the number of participants (that is, recreational fishermen or anglers) who engage in recreational fishing activities.

**Fishing Mode** – For this report, fishing mode refers to the type of recreational fishing a recreational fisherman (angler) engages in, such as fishing from shore, a private or rental boat, or a for-hire boat.

**Fishing Trip** – For this report, a fishing trip refers to a recreational fishing excursion and can be different from a fishing day. For example, one fishing trip can consist of more than 1 fishing day. Fishing trips are classified as occurring in one of three fishing modes: 1) a shore-based fishing trip; 2) by a private or rental boat; or 3) on a for-hire fishing boat.

**For-Hire Mode** – For this report, this fishing mode refers to trips taken by a recreational fishermen (angler) on a party (also referred to as a headboat) or charter boat.

**Gross Domestic Product (GDP) by State or Gross State Product (GSP)<sup>13</sup>** – Previously known as the Gross State Product, the GDP by state is the value added in production by the labor and capital located in a state. GDP for a state is derived as the sum of the GDP originating in all industries in the state.

## Glossary

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**Harvest<sup>1</sup>** – The total number of weight or fish caught and kept from an area over a period of time. Note that landings, catch and harvest are different. For recreational fishing activities, harvest refers to the number of individual fish not thrown back into the sea by a recreational fisherman (angler). However, in Hawai'i and the Gulf states, harvest includes fish thrown back dead. See also "Catch" and "Release."

**Individual Fishing Quota (IFQ)<sup>1</sup>** – A type of limited entry; an allocation to an individual (a person or a legal entity, for example, a vessel owner or company) of a right (privilege) to harvest a certain amount of fish in a certain period of time. It is also of 10 expressed as an individual share of an aggregate quota, or total allowable catch (TAC). See also "Individual Transferable Quota" and "Catch Share Program."

**Individual Transferable Quota (ITQ)<sup>1</sup>** – A type of individual fishing quota (IFQ) allocated to individual fishermen or vessel owners that can be transferred (sold or leased) to others. See also "Individual Fishing Quota."

**Industry Sector** – For this report, fishing- and marine-related industries were combined into industry sectors. Two industry sectors were included in this report: 1) seafood sales and processing; and 2) transport, support and marine operations. Fishing and marine-related industries were chosen from the County Business Patterns Data Series based on data availability and perceived relevance to fishing or marine activities. These industries were then combined into one of these two industry sectors.

**Key Species or Species Groups** – For this report, up to 10 species or species groups were chosen as "key" species or species groups due to their regional importance to commercial and recreational fisheries. The regional importance of these key species or species groups was chosen based on their economic and/or historical significance to a state or region.

**Landings<sup>1</sup>** – 1. The number or poundage of fish unloaded by commercial fishermen or brought to shore by recreational fishermen for personal use. Landings are reported at the locations at which fish are brought to shore; 2. The part of the catch that is selected and kept during the sorting procedures on board vessels and successively discharged at dockside.

**Limited Access Privilege Program (LAPP) or Limited Access Privilege System<sup>4</sup>** – As defined in the Magnuson-Stevens Act, LAPPs limit participation in a fishery to those satisfying certain eligibility criteria or requirements contained in a fishery management plan (FMP) or associated regulation. A limited access privilege is a federal permit, issued as part of a limited access system, to harvest a quantity of fish expressed by a unit or units representing a portion of the total allowable catch (TAC) of the fishery that may be received or held for exclusive use by a person. A LAPP includes an individual fishing quota (IFQ) or individual tradable quota (ITQ) but does not include community development quotas (CDQs). LAPPs are sometimes known as Dedicated Access Privileges (DAPs). However, unlike LAPPs, DAPs generally encompass CDQs as well as IFQs (see "Dedicated Access Privileges"). LAPPs are a type of catch share program. See also "Catch Share Program."

**License Limitation Program or Limited Entry Program<sup>1</sup>** – A management tool available to fishery managers where the number of commercial fishermen or vessels licensed to participate in a fishery is legally restricted. A management agency of 10 uses this management tool to limit entry into a fishery.

**Limited Entry Program** – Also known as a license limitation program; see "License Limitation Program."

**Location Quotient<sup>7</sup>** – Location Quotients (LQs) are ratios that allow an area’s distribution of employment by industry to be compared to a reference or base area’s distribution. The reference area is usually the U.S., but it can also be a state or a metropolitan area. The reference or base industry is usually the all-industry total. The following discussion assumes the defaults are used. LQs also allow areas to be easily compared with each other. If an LQ is equal to 1, then the industry has the same share of its area employment as it does in the reference area. An LQ greater than 1 indicates an industry with a greater share of the local area employment than in the reference area.

For example (assuming the U.S. as the reference area), Las Vegas will have an LQ greater than 1 in the Leisure and Hospitality industry, because this industry makes up a larger share of the Las Vegas employment total than it does for the country as a whole. LQs are calculated by first dividing local industry employment by the all-industry total of local employment. Next, reference area industry employment is divided by the all-industry total for the reference area. Finally, the local ratio is divided by the reference area ratio.

**Magnuson-Stevens Fishery Conservation and Management Act or Magnuson-Stevens Act (MSA)<sup>1</sup>**

Federal legislation responsible for establishing the Regional Fishery Management Councils (FMCs) and the mandatory and discretionary guidelines for federal fishery management plans (FMPs). This legislation was originally enacted in 1976 as the Fishery Management and Conservation Act. Its name was changed to the Magnuson Fishery Conservation and Management Act in 1980, and in 1996 it was renamed the Magnuson-Stevens Fishery Conservation and Management Act.

**Market-based Management<sup>4</sup>** – Market-based management is an umbrella term that encompasses approaches that provide economic incentives to protect fisheries from overharvest. These approaches contrast with conventional fisheries management approaches, such as buyback programs and license limitation programs (see “Buyback Program” and “License Limitation Program”). One example of a market-based management approach for fisheries is a limited access privilege program (LAPP; see “Limited Access Privilege Program”) that includes an individual fishing quota. A LAPP provides individual fishermen an exclusive, market-based share of a harvest quota or total allowable catch (TAC) of a fishery.

**Marine Coastal County** – For this report, a marine coastal county is a coastal county that is adjacent to an ocean coastline. See also “Coastal County.”

**Marine Economy** – For this report, the marine economy refers to the economic activity generated by fishing- and marine-related industries located in a coastal state. Fishing- and marine-related industries were chosen from industries defined in the County Business Patterns Data Series provided by the U.S. Census Bureau. Industries listed in this report were chosen based on that industry’s direct contribution to fishing and marine activities, and whether data was available for that industry. Information such as the number of establishments, number of employees, and annual payroll for these fishing and marine-related industries was used to determine their relative levels of economic activity in a state. These industries were categorized into one of two industry sectors: 1) seafood sales and processing; and 2) transport, support and marine operations. See also “Industry Sector.”

**Non-Coastal County Angler** – For this report, a non-coastal county angler refers to a recreational fisherman who lives within a given state but not in a coastal county of that state.

**Nonemployer Firms<sup>3</sup>** – A nonemployer business is one that has no paid employees, has annual business receipts of \$1,000 or more (\$1 or more in the construction industries), and is subject to federal income taxes. Most nonemployers are self-employed individuals operating very small unincorporated businesses that may or may not be the owner’s principal source of income.

## Glossary

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**Non-Resident** – For this report, a non-resident in the U.S. table refers to a recreational fisherman (angler) who resides outside the U.S.; a non-resident in the regional and state tables refers to an angler who did not reside in the state where they fished.

**Out-of-state Angler** – For this report, an out-of-state angler is a recreational fisherman (angler) who does not reside within a given coastal state.

**Overcapacity<sup>16</sup>** – When the harvesting capability within a given fishery exceeds the level of harvest allowed for that fishery.

**Overcapitalization<sup>10</sup>** – When the amount of harvesting capacity in a fishery exceeds the amount needed to harvest the desired amount of fish at least cost.

**Overfished<sup>1</sup>** – 1. An overfished stock or stock complex “whose size is sufficiently small that a change in management practices is required to achieve an appropriate level and rate of rebuilding.” A stock or stock complex is considered overfished when its population size falls below the minimum stock size threshold (MSST). A rebuilding plan is required for stocks that are deemed overfished; 2. A stock is considered overfished when exploited beyond an explicit limit past which its abundance is considered “too low” to ensure safe reproduction. In many fisheries, the term is used when biomass has been estimated to be below a biological reference point that is used as the signpost defining an “overfished condition.”

**Overfishing<sup>1</sup>** – 1. According to the National Standard Guidelines, “overfishing occurs whenever a stock or stock complex is subjected to a rate or level of fishing mortality that jeopardizes the capacity of a stock or stock complex to produce maximum sustainable yield (MSY) on a continuing basis.” Overfishing is occurring if the maximum fishing mortality threshold (MFMT) is exceeded for 1 year or more; 2. In general, the action of exerting fishing pressure (fishing intensity) beyond the agreed optimum level. A reduction of fishing pressure would, in the medium term, lead to an increase in the total catch.

**Protected Species<sup>17</sup>** – Refers to any species that is protected by either the Endangered Species Act (ESA) or the Marine Mammal Protection Act (MMPA), and that is under the jurisdiction of NOAA Fisheries. This total includes all threatened, endangered and candidate species, as well as all cetaceans and pinnipeds, excluding walrus.

**Regional Fishery Management Council or Fishery Management Council (FMC)<sup>4</sup>** – The Magnuson-Stevens Act established eight Regional FMCs around the United States. Each council consists of voting and non-voting members who represent various federal, state and tribal government; fishing industry groups (commercial and/or recreational); and non-fishing groups (such as environmental organizations and academic institutions). Each council is tasked with creating fishery management plans for important fisheries within their regions.

**Release** – For this report, release refers to the number of individual fish caught by a recreational fisherman (angler) that are then returned to the sea (dead or alive). In Hawai'i and the Atlantic and Gulf states, release does not include fish returned to the sea that are dead. See also “Catch” and “Harvest.”

**Resident** – For this report, a resident in the U.S. table refers to a recreational fisherman (angler) who resides inside the U.S.; a resident in the regional and state tables refers to an angler who resides in the state where they fished.

**Sector Allocation Program<sup>17</sup>** – A fisheries management tool where a group of fishermen are allocated a quota or share of a total allowable catch (TAC), in accordance with an approved plan. This program is considered a type of catch share program. See also “Catch Share Program.”



**Species<sup>1</sup>** – A group of animals or plants having common characteristics that are able to breed together to produce fertile (capable of reproducing) offspring and maintain their “separateness” from other groups.

**Species Group<sup>1</sup>** – Group of species considered together of 10 because they are difficult to differentiate without detailed examination (very similar species), or because data for the separate species are not available (for example, in fishery statistics or commercial categories).

**Threatened Species<sup>13</sup>** – As defined by the Endangered Species Act (ESA), a threatened species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. See also “Endangered Species.”

**Trip Expenditures** – For this report, trip expenditures refer to expenses incurred by recreational fishermen (anglers) on a fishing trip. Trip expenditures are described for residents (individuals who reside in a coastal or non-coastal county within a given state; a U.S. resident) and non-residents (individuals who do not reside within the U.S.).

**Value-Added<sup>1</sup>** – A firm’s sales minus the cost of the goods and services it purchases from other industries to produce its outputs.

## GLOSSARY NOTES

<sup>1</sup> NOAA Fisheries Glossary. October 2005. K. Blackhart, D.G. Stanton, and A.M. Shimada, eds. Revised edition, June 2006. National Marine Fisheries Service (NOAA Fisheries), National Oceanic & Atmospheric Administration, U.S. Department of Commerce. NOAA Technical Memorandum NMFS-F/SPO-69. Available at: [http://www.st.nmfs.gov/st4/documents/F\\_Glossary.pdf](http://www.st.nmfs.gov/st4/documents/F_Glossary.pdf) [accessed September 19, 2014].

<sup>2</sup> “CBP Definitions.” County Business Patterns, U.S. Census Bureau, U.S. Department of Commerce. Available at: <http://www.census.gov/econ/cbp/definitions.htm> [accessed September 19, 2014].

<sup>3</sup> “Nonemployer Definitions.” Nonemployer Statistics, U.S. Census Bureau, U.S. Department of Commerce. Available at: <http://www.census.gov/epcd/nonemployer/view/define.html/> [accessed September 19, 2014].

<sup>4</sup> Magnuson-Stevens Fishery Conservation and Management Act, as amended through January 12, 2007. (P.L. 94-265, as amended through P.L. 109-479). Available at: [http://www.nmfs.noaa.gov/msa2007/docs/act\\_draft.pdf](http://www.nmfs.noaa.gov/msa2007/docs/act_draft.pdf) [accessed September 19, 2014].

<sup>5</sup> NOAA Catch Share Policy, Office of Policy, National Marine Fisheries Service (NOAA Fisheries), National Oceanic & Atmospheric Administration, U.S. Department of Commerce. Available at: [http://www.nmfs.noaa.gov/sfa/management/catch\\_shares/about/documents/noaa\\_cs\\_policy.pdf](http://www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/noaa_cs_policy.pdf) [accessed September 22, 2014].

<sup>6</sup> “Coastal Counties.” U.S. Census Bureau, U.S. Department of Commerce. Available at: [http://www.census.gov/geo/landview/lv6help/coastal\\_cty.html](http://www.census.gov/geo/landview/lv6help/coastal_cty.html) [accessed September 19, 2014].

<sup>7</sup> Location Quotient Calculator. Bureau of Labor Statistics, U.S. Department of Labor. Available at: [http://data.bls.gov/help/def/lq.htm/#location\\_quotient\\_application](http://data.bls.gov/help/def/lq.htm/#location_quotient_application) [accessed September 19, 2014].

<sup>8</sup> Pages 288-289 in: An Ocean Blueprint for the 21st Century, Final Report. 2004. U.S. Commission on Ocean Policy. Washington, D.C. Available at: <http://www.oceancommission.gov> [accessed September 19, 2014].

<sup>9</sup> P. 4 in: The Economic Contribution of Marine Angler Expenditures in the United States, 2006. 2008. B. Gentner and S. Steinback. National Marine Fisheries Service (NOAA Fisheries), National Oceanic & Atmospheric Administration, U.S. Department of Commerce. NOAA Technical Memorandum NMFS-F/SPO-94. Available at: [http://www.st.nmfs.noaa.gov/st5/publication/marine\\_angler.html](http://www.st.nmfs.noaa.gov/st5/publication/marine_angler.html) [accessed September 19, 2014].

<sup>10</sup> “Fisheries Term Portal.” FAO Fisheries Department, United Nations Food & Agriculture Organization. Available at: <http://www.fao.org/faoterm/collection/fisheries/en/> [accessed September 19, 2014].

<sup>11</sup> The NMFS Commercial Fishing and Seafood Industry Input/Output Model (CFSI I/O Model). August 2009. J. Kirkley. Virginia Institute of Marine Science. Available at: [http://www.st.nmfs.noaa.gov/documents/commercial\\_seafood\\_impacts\\_2006.pdf](http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2006.pdf) [accessed September 19, 2014].

<sup>12</sup> Pages 11-12 in: “The Economic Contribution of Marine Angler Expenditures in the United States, 2006.” November 2008. B. Gentner and S. Steinback. National Marine Fisheries Service (NOAA Fisheries), National Oceanic & Atmospheric Administration, U.S. Dept. of Commerce. NOAA Technical Memorandum NMFS-F/SPO-94, 301p. Available at: <http://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2006> [accessed September 19, 2014].

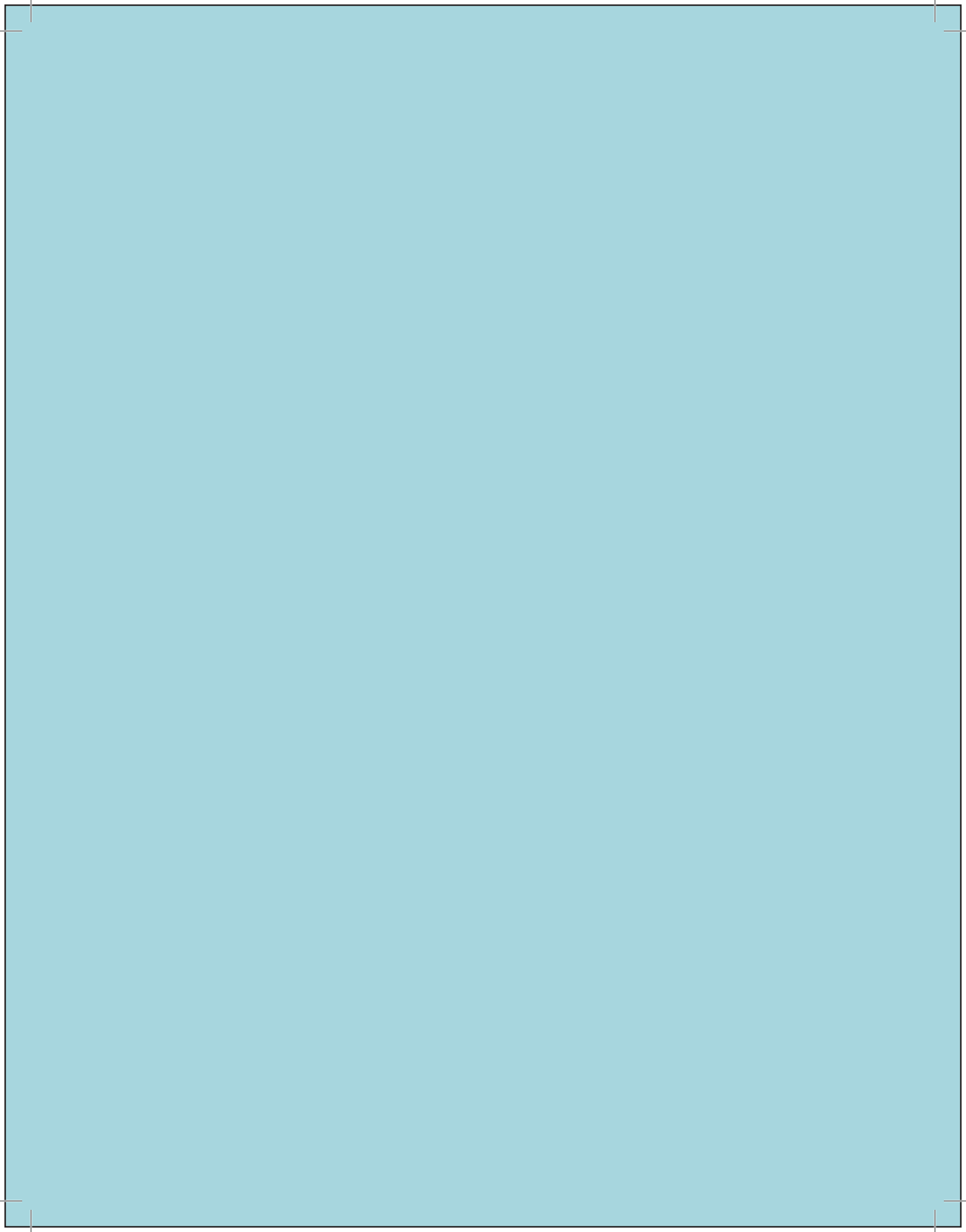
<sup>13</sup> “Regional Definitions.” Regional Economic Accounts, Bureau of Economic Analysis, U.S. Department of Commerce. Available at: <http://www.bea.gov/regional/definitions> [accessed September 19, 2014].

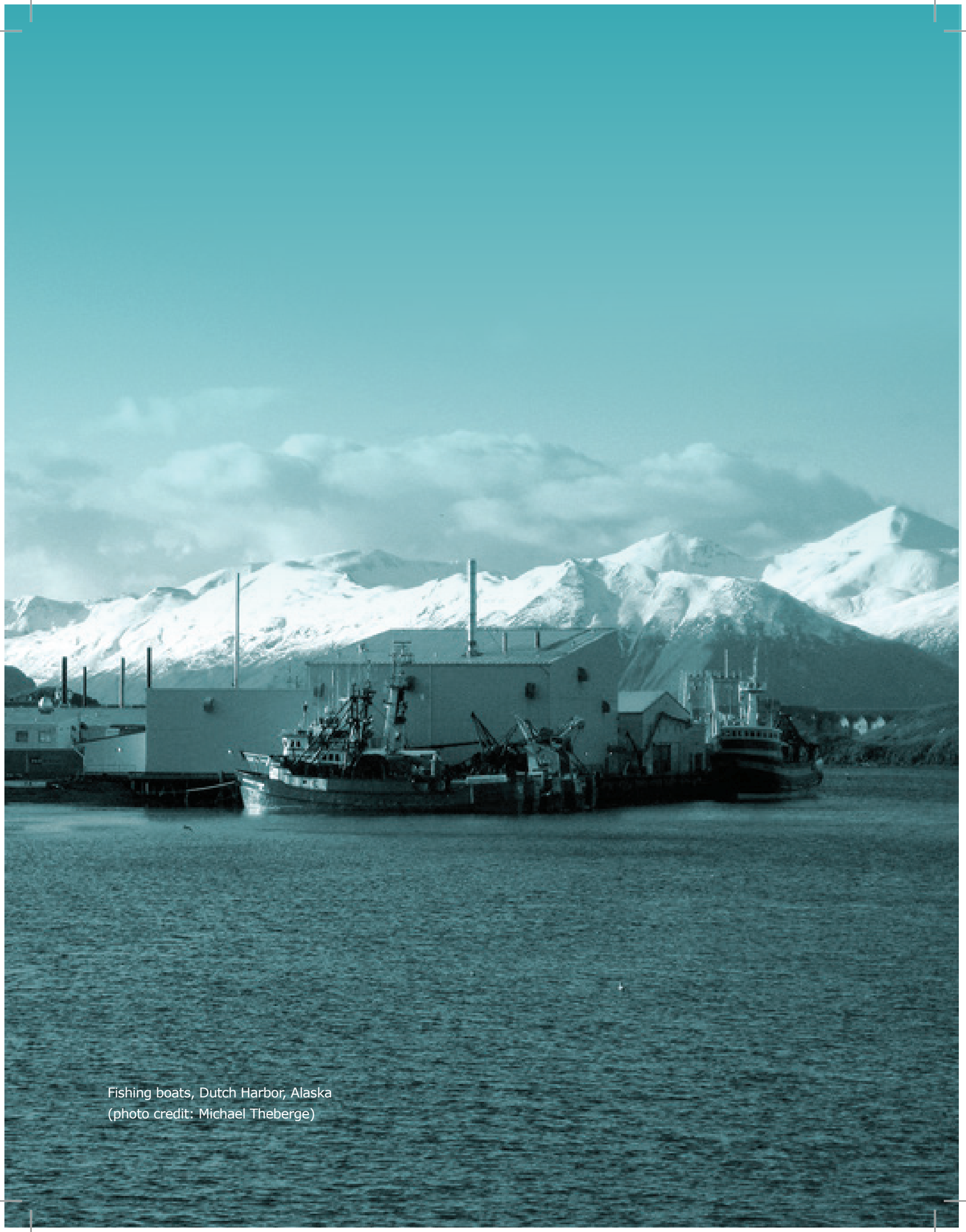
<sup>14</sup> “Economic Census Definitions.” U.S. Census Bureau. Available at: <http://www.census.gov/econ/census/help/sector/definitions.html> [accessed September 22, 2014].

<sup>15</sup> Endangered Species Act of 1973 (P.L. 93-205, as amended through P.L. 100-707). Available at: <http://www.nmfs.noaa.gov/pr/laws/esa/> [accessed September 22, 2014].

<sup>16</sup> “Status of U.S. Fisheries.” Office of Sustainable Fisheries, National Marine Fisheries Service (NOAA Fisheries), National Oceanic & Atmospheric Administration, U.S. Department of Commerce. Available at: <http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm> [accessed September 22, 2014].

<sup>16</sup> P. 4 in: “An Assessment of Excess Harvesting Capacity in Federally Managed Commercial Fisheries.” U.S. Dept. of Commerce, NOAA Technical Memorandum NMFSF/SPO-93, 366p. Available at: [http://www.nmfs.noaa.gov/msa2007/docs/042808\\_312\\_b\\_6\\_report.pdf](http://www.nmfs.noaa.gov/msa2007/docs/042808_312_b_6_report.pdf) [accessed September 22, 2014].





Fishing boats, Dutch Harbor, Alaska  
(photo credit: Michael Theberge)



