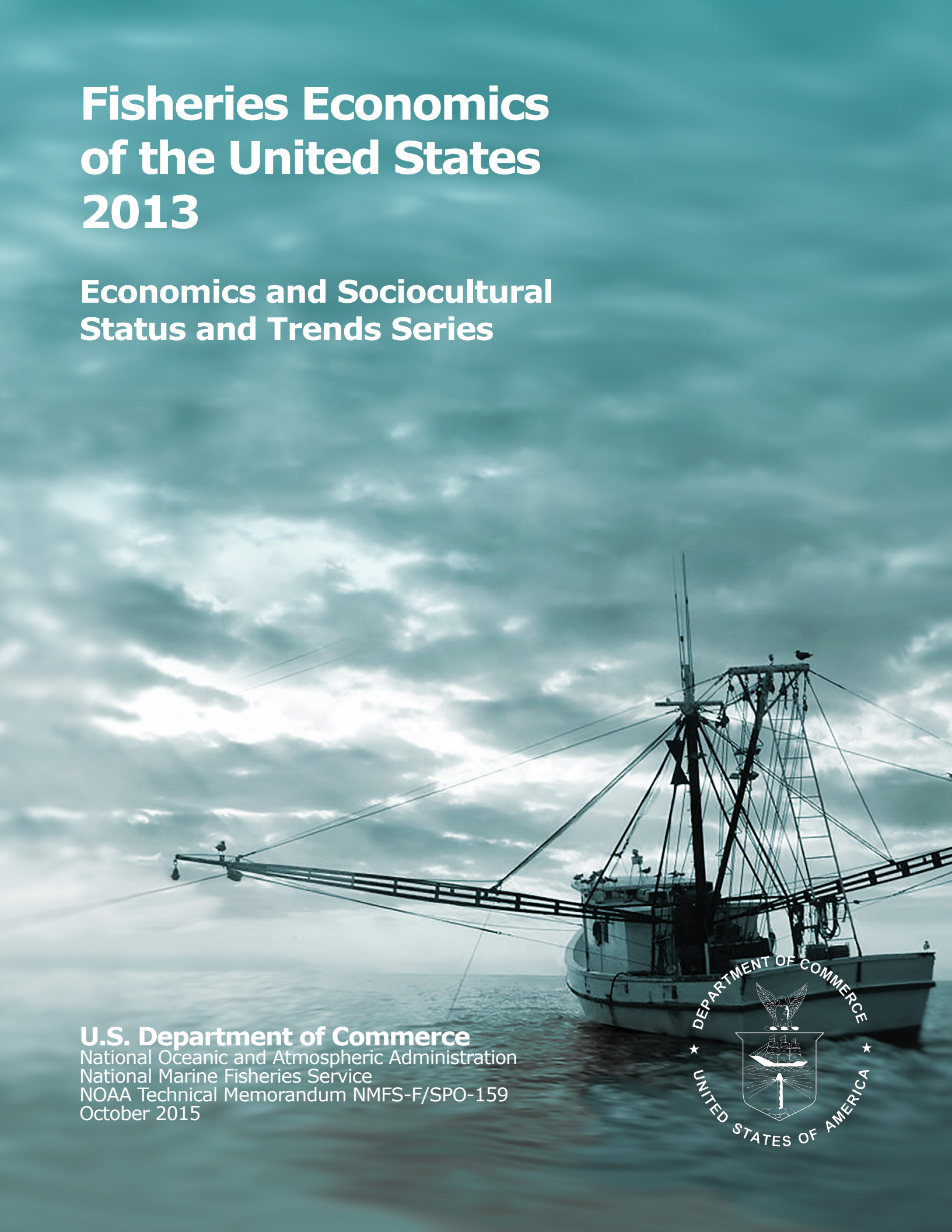
Fisheries Economics of the United States 2013

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-159
October 2015

Front cover: Commercial shrimp vessel, Florida (photo credit: NOAA Fisheries)
Inside cover: Fishing tackle for sale, San Diego, California (photo credit: James Hilger)

Fisheries Economics of the United States 2013

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-159
OCTOBER 2015

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

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 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/

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, which will be extended to non-catch share fisheries in the next edition. http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2013

SUGGESTED CITATION:

National Marine Fisheries Service. 2015. Fisheries Economics of the United States, 2013. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-F/SPO-159, 235p.

A COPY OF THIS REPORT MAY BE OBTAINED FROM:

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

Or online at:

http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2013

Contents

Recreational fishing in Morro Bay, CA
(photo credit: Sabrina Lovell, NOAA/NMFS/OST)

Preface

Fisheries Economics of the United States, 2013

Fisheries Economics of the United States, 2013 is the eighth 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 2004 to 2013 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, which will be extended to non-catch share fisheries in the next edition of Fisheries Economics of the United States.

Sources of Data

Information in this report came from many sources. Commercial landings, revenue, and price data, and recreational fishing effort and participation data was primarily obtained from the Fisheries Statistics Division, Office of Science and Technology, 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 sector 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 is the editor of this report series; Rita Curtis, Sabrina Lovell and Cara Mayo were primary authors and analysts on this edition of Fisheries Economics of the United States. Key collaborators include Ayeisha Brinson, Lauren Dolinger Few, Karen Greene, Laura Johansen, Jean Lee, Michael Lewis, Michael Liddel, Alan Lowther, Cindy Thomson 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, Stephen Holiman, and Todd Lee. Other colleagues who provided information and expertise included: Mark Fisher (Texas Parks and Wildlife Department), Ed Hibsch (Pacific States Marine Fisheries Commission) and Williams Romberg (Alaska Department of Fish and Game).

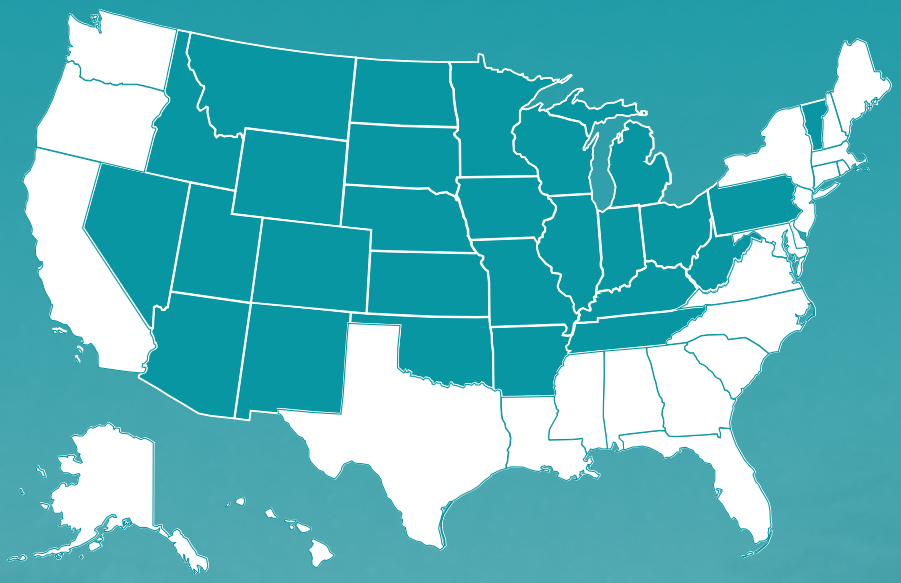
Address all comments and questions to: Kathryn Cuff, Kathryn.Cuff@noaa.gov.

Economics and Sociocultural Analysis Division

Office of Science and Technology
NOAA Fisheries (NMFS)
1315 East-West Highway, 12th floor
Silver Spring, MD 20910-3282
Phone: 301-427-8121 / Fax: 301-713-4137

National Overview

- Alabama
- Alaska
- California
- Connecticut
- Delaware
- Florida
- Georgia
- Hawai’i
- Louisiana
- Maine
- Maryland
- Massachusetts
- Mississippi
- New Hampshire
- New Jersey
- New York
- North Carolina
- Oregon
- Rhode Island
- South Carolina
- Texas
- Virginia
- Washington



Schooling horse-eye jack, Southeast U.S.
(photo credit: NOAA Fisheries)

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, there are 46 fishery management plans (FMPs)[1] that provide a framework for managing the harvest of 478 fish stocks and stock complexes. These fishery management plans are developed by Regional Fishery Management Councils (FMCs) in each of eight regions nationwide: North Pacific, Pacific, Western Pacific, New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, and Caribbean Regions. Once an FMP is developed, it must be approved by the Secretary of Commerce in consultation with NOAA Fisheries before it is implemented.

There is sufficient information to make an overfishing status determination for 300 out of the 478 stocks and stock complexes (63 percent): 28 are subject to overfishing (9 percent of stocks with known status). The overfished status of 230 stocks (48 percent) is known: 40 stocks (17 percent of stocks with known status) are categorized as overfished.[2]

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 conducted in areas where the EEZ of the U.S. overlaps with other nations (transboundary areas), and in areas beyond the U.S. EEZ (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 of the EEZs of Canada, Japan, and Russia, called the Donut Hole, is an example of international waters. Loss of sea ice will create new trans-boundary 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 conduct research, assess, and adopt measures for the conservation and coordinated management of target species such as bigeye tuna. Some RFMOs also collect data, 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.

Regional Fishery Management Organizations

NOAA Fisheries is party to eight RFMOs globally and the list by ocean basin is provide below.[3]

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 Tuna
- North Atlantic Salmon Conservation Organization
- Northwest Atlantic Fisheries Organization

Antarctic

- Commission for the Conservation of Antarctic Marine Living Resources

[1] 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.
[2] Source: NOAA Fisheries Office of Sustainable Fisheries, Status of Stocks 2013. http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/archive/2013/status_of_stocks_2013_web.pdf.
[3] Source: http://www.nmfs.noaa.gov/ia/agreements/regional_agreements/intlagree.html.

Another issue of particular concern for NOAA Fisheries is illegal, unreported, and unregulated (IUU) fishing activities. IUU fishing generally refers to fishing conducted in violation of 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 transshipments 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 the global value of economic losses from IUU fishing range between $10 billion and $23.5 billion annually, representing between 11 and 26 million tons.[4] NOAA Fisheries is actively working bilaterally and multilaterally with other nations on the adoption of strategies to reduce the level of IUU fishing around the world. Such strategies include strengthening enforcement and data collection programs around the world, and restricting port entry and access to port services to vessels included on the IUU lists of RFMOs with U.S. membership.

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). Currently, NOAA Fisheries has jurisdiction over 125 marine and anadromous listed species. A list by species group is provided in Table 1.

Table 1. Endangered and Threatened Species under NMFS Jurisdiction[5]

Species Group	Number of Species
Marine and Anadromous Fish	57
Marine Mammals	27
Sea Turtles	16
Marine Invertebrates	24
Plants	1
Total Threatened and Endangered Marine Species	125

In addition to the threatened and endangered marine and anadromous species, NOAA Fisheries also engages in activities for identifying candidate and proposed species. Candidate species are those species that are actively being considered for listing as endangered or threatened under the ESA, as well as those species for which NOAA Fisheries has initiated a status review that it has announced in the Federal Register. Proposed species are those candidate species that were found to warrant listing as either threatened or endangered and were officially proposed as such in a Federal Register notice after the completion of a status review and consideration of other protective measures. Currently there are 26 candidate species for listing and 7 proposed species for listing.

NOAA Fisheries is also responsible for providing protection for marine mammals under the Marine Mammal Protection Act.[6] Enacted 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 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 are 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 ad-

[4] 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.
[5] See NOAA Fisheries Office of Protected Resources (http://www.nmfs.noaa.gov/pr/species/esa/) for current and proposed ESA species listings.
[6] The U.S. Fish and Wildlife Service provides protection for walrus, manatees, otters, and polar bears.

ditional 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 there is detailed information 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[7] 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[8] was released to encourage well-designed catch share programs to help maintain or rebuild fisheries, and sustain fishermen, communities and vibrant working waterfronts, including the cultural and resource access traditions that have been part of this country since its founding.

Nationwide, there are currently 15 federal catch share programs, which 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.[9] Implementation dates of these programs span three decades, with five programs established in the 1990s and five programs established since 2010 (see Table 2). Nine programs manage a single species or, in some cases, two species but as separate management units; the other six programs manage multiple species. The most programs (six) are in the Alaska Region. In December 2014, the Final Rule implementing the Atlantic Highly Migratory Species Individual Bluefin Quota (IBQ) Program was issued. This new program begins in 2015, bringing the total number of federal catch share programs to 16.

NOAA Fisheries recently initiated an effort to track catch share program performance.[10] 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 showthat inflation-adjusted revenue from catch share species increased in 12 of the 16 programs and/or sub-components of the catch share program since their initial implementation. In addition, the number of active vessels decreased in all but one program (Central GOA Rockfish) and inflation-adjusted revenue per vessel increased in all programs since their implementation. Further, results show that the 2012 annual catch limit was not exceeded in any catch share program.

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
New England	Northeast Multispecies Sectors	2010
	Northeast General Category Atlantic Sea Scallop IFQ	2010
North Pacific	Western Alaska Community Development Quota	1992
	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 *(pilot implemented in 2007)*	2012
	Non-pollock Trawl Catcher/ Processor Groundfish Cooperatives (Amendment 80)	2008
South Atlantic	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

[7] The Habitat Assessment Improvement Plan is available at: http://www.st.nmfs.noaa.gov/st4/documents/habitatAssesmentImprovement-Plan_052110.PDF.
[8] See http://www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/noaa_cs_policy.pdf.
[9] See Section 303A of the Magnuson-Stevens Act for more information on LAPP requirements.
[10] See http://www.st.nmfs.noaa.gov/Assets/economics/catch-shares/.

Table 3. Economic Performance Indicators for U.S. Federal Catch Share Programs (2010 dollars)[11]

Management Context			Participation		Economic Benefits			
	ACL Exceeded		Active Vessels		Total Revenue from Catch Share Species		Revenue per Active Vessel	
	Baseline	2012	Baseline	2012	Baseline	2012	Baseline	2012
Gulf of Mexico								
Grouper-Tilefish	Y	N	631	463	21,597,221	24,492,190	34,227	53,128
Red Snapper	Y	N	482	365	13,239,277	13,667,961	27,467	37,446
Mid-Atlantic								
Golden Tilefish	na	N	14	11	4,434,874	5,243,472	318,920	476,679
Ocean Quahog	N	N	67	30	27,859,765	25,010,255	415,817	833,675
Surfclam	N	N	137	43	37,540,447	27,407,991	274,018	637,395
New England								
General Category Scallop	na	N	271	142	26,902,861	29,430,996	99,273	207,261
Multispecies Sectors	Y	N	415	286	80,508,936	66,379,515	193,997	232,096
North Pacific								
Alaska Halibut	Y	N	3,432	1,013	86,967,782	126,833,314	25,340	125,206
Alaska Sablefish	Y	N	1,139	354	91,122,569	99,894,486	80,002	282,188
AFA Pollock Cooperatives	Y	N	147	103	366,635,287	473,571,987	2,494,118	4,597,786
BSAI Crab Rationalization	Y	N	264	81	165,603,383	201,931,076	627,286	2,492,976
Amendment 80	N	N	22	19	231,967,927	293,325,864	10,543,997	15,438,203
Central GOA Rockfish	Y	N	42	45	11,704,623	19,045,893	278,682	423,242
Pacific								
Pacific Sablefish	na	N	135	97	6,352,641	8,343,940	47,057	86,020
Whiting Trawl	na	N	36	24	9,139,138	20,031,917	253,865	834,663
Non-whiting Trawl	na	N	115	90	28,780,656	25,507,598	250,267	283,418

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 to permanently decrease the number of participants in the fishery to ease fishing-related pressure on marine resources. To date, there have been ten buyback programs instituted nationwide. The cost of seven of these buyback programs totaled $397 million.[12] 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, 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. Unlike catch share programs, license limitation programs have been implemented in almost all federally-managed commercial fisheries and in every region except the Caribbean.

Ecolabels are a market-based tool 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.

Table 4. U.S. Fisheries with MSC Certification[13]

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 Boast Owners Association albacore tuna North Pacific	2010
	US North Pacific halibut	2006
	US 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 dungeness crab	2010
	Oregon pink shrimp	2011
	Pacific hake mid-water trawl	2009
	US West Coast limited entry groundfish trawl	2014
Gulf	Louisiana blue crab	2012
North-east	Maine lobster trap fishery	2013
	US Atlantic spiny dogfish	2012
	US North Atlantic swordfish	2013
	US Atlantic sea scallop	2013

[11] The South Atlantic Wreckfish ITQ is not included due to confidentiality restrictions and the Western Alaska CDQ program was excluded because it is the only CDQ and thus fundamentally different in nature relative to 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" is used to indicate that the question of whether the ACL was exceeded is not applicable.
[12] 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.
[13] For more information about these fisheries and the Marine Stewardship Council certification process see: https://www.msc.org/.

The Marine Stewardship Council (MSC) has one of the most recognizable ecolabeling programs in the world. There are currently more than 190 fisheries worldwide that meet MSC sustainability standards, 21 of which are U.S. fisheries (see Table 4). Fisheries obtaining MSC certification for the first time in 2013 or 2014 include the U.S. North Atlantic swordfish and West coast groundfish trawl.

COMMERCIAL FISHERIES

Commercial fishermen in the U.S. harvested 9.8 billion pounds of finfish and shellfish in 2013, earning $5.5 billion for their catch. Pacific salmon ($757 million) followed by shrimp ($588 million), sea scallop ($467 million), and American lobster ($460 million) contributed most to total revenue in the U.S. The top three species in terms of pounds landed, walleye pollock (3 billion pounds), menhaden (1.4 billion), and Pacific salmon (1.1 billion), comprised over half of U.S. landings in 2013.

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 (just over 1 billion pounds) and earned $680 million for their catch in 2013. Tuna was caught in large numbers in Hawai'i (just under 21 million pounds) and generated $82 million in landings revenue. Maine fishermen contributed most to the total landings of American lobster (127 million pounds) and earned $368 million for their catch in 2013. In Massachusetts, sea scallopers harvested 29 million pounds landed and earned $335 million for their catch. More blue crab was caught in Louisiana (39 million pounds) than any other state, earning fishermen in this state over $51 million. Louisiana also accounted for more than half of the menhaden landed in 2013, with fishermen landing 849 million pounds worth $85 million in dockside revenue. Sea scallop garnered the highest average ex-vessel price per pound ($11.41) from among the key species and species group in 2013, with state-specific prices ranging from $10.18 in New York to $12.27 in Maryland.

Economic Impacts[14]

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 2013, this industry supported 1.35 million full- and part-time jobs and generated $142 billion in sales, $40 billion in income, and almost $60 billion in value added impacts nationwide (see Table 5).

Seafood retailers, which generated the largest job, income and value added impacts, contributed 668,000 jobs, $34 billion in sales impacts, $14 billion in income, and $19 billion in value added impacts to the national economy in 2013 (see Table 5). The seafood import sector, which generated the largest sales impacts, contributed 202,000 jobs, $55 billion in sales, $9 billion in income, and $17 billion in value added impacts. Wholesalers and distributors contributed 60,000 jobs, over $8 billion in sales, $3 billion in income, and $4 billion in value added impacts to the national economy.

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

	2010	2011	2012	2013
Jobs	1,196,683	1,233,204	1,270,141	1,350,627
Sales (Billions)	$133.1	$129.4	$140.7	$142.2
Income (Billions)	$36.3	$36.6	$38.7	$39.8
Value Added (Billions)	$55.4	$55.3	$59.0	$60.3
Total Revenue (Billions)	$4.5	$5.3	$5.1	$5.6

Employment impacts from the U.S. seafood industry were 6% higher in 2013 than in 2012. Similarly, industry-wide economic impacts in terms of sales (up 1.1%), income (up 2.7%), and value added (up 2.2%) were also higher. Year-over-year increases in economic impacts were concentrated in three sectors: commercial harvesters (employment up 13.1%), retailers (employment up 9.5%), and wholesalers and distributors (employment up 5.0%).

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

The highest sales impacts were generated by the seafood industry in California with $21 billion in sales followed by Florida and Massachusetts (see Table 7). The importers sector generated the highest level of sales

[14] 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.

impacts in all three states. The lowest sales impacts were generated in Delaware. The greatest value added impacts were generated by the seafood industry in California, Florida, and Massachusetts and Washington. The smallest value added impacts were generated in Delaware.

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

State	Jobs	State	Jobs
U.S.	1,350,627	Virginia	16,162
California	132,035	Georgia	13,763
Massachusetts	100,108	Maryland	12,419
Florida	78,378	Alabama	12,090
Alaska	68,540	Hawai'i	9,959
Washington	64,599	North Carolina	9,579
New York	48,732	Rhode Island	9,560
New Jersey	41,319	Mississippi	6,432
Louisiana	39,743	New Hampshire	5,004
Maine	35,306	Connecticut	2,991
Texas	31,553	South Carolina	1,742
Oregon	21,063	Delaware	406

Table 7. Sales, income and value added impacts generated by the U.S. Seafood Industry, 2013 ($ Million)

State	Sales	Income	Value Added
U.S.	142,249.1	39,756.7	60,309.2
California	21,019.4	4,576.7	7,557.5
Florida	15,319.4	2,878.3	5,136.6
Massachusetts	7,706.1	2,021.5	3,073.3
Washington	7,270.6	2,030.0	3,050.1
New Jersey	6,397.5	1,421.1	2,313.2
New York	5,809.4	1,247.1	2,060.2
Alaska	4,693.0	2,097.4	2,600.6
Texas	2,555.8	754.5	1,123.5
Louisiana	2,074.3	742.8	1,023.0
Georgia	1,932.1	424.9	701.7
Maine	1,914.5	635.4	917.8
Oregon	1,359.7	478.2	669.8
Maryland	1,244.1	320.7	490.6
Virginia	1,148.7	364.7	522.9
Rhode Island	980.9	250.2	389.0
North Carolina	821.5	231.0	343.9
Hawai'i	751.3	236.9	343.1
New Hampshire	626.1	149.1	235.8
Alabama	526.8	200.5	265.6
Connecticut	469.2	99.0	164.6
Mississippi	268.4	107.3	138.8
South Carolina	124.6	40.7	57.9
Delaware	56.3	11.2	18.7

Landings Revenue

Landings revenue in the U.S. totaled $5.5 billion in 2013 (Table 8). This was a 47% increase in nominal value from 2004 levels (an 8% percent increase in real terms, that is, after adjusting for inflation). Landings revenue in 2013 represented a year-over-year increase of 9% from 2012. Finfish landings revenue of $2.7 billion in 2013 represented a 50% increase (9.9% in real terms) from 2004 and a 12% increase from 2012. U.S. shellfish landings revenue totaled just under $2.9 billion in 2013, increasing 45% (8% in real terms) from 2004 to 2013 and a 7% increase from 2012.

The five species with highest landings revenue were Pacific salmon, shrimp, sea scallop, American lobster, and walleye pollock. The landings revenue of these five species groups totaled almost $2.7 billion, or 48% of total revenue. The largest increases in total landings revenue among these species from 2004 to 2013 were experienced by: Pacific salmon (up 150% in nominal terms, 83% in real terms), menhaden (72%, 26% in real terms), and tunas (63%, 20% in real terms). Five of the key species or species groups showed decreases in real revenue over the same 10 year period: Pacific halibut (down 33%, -51% in real terms), sablefish (down 25%, -45% in real terms). Relative to 2012 totals, key species or species groups with the largest increases in total revenue were: Pacific salmon (up 55%), menhaden (up 20%), and walleye pollock (up 18%).

Table 8. Commercial Fisheries Landings Revenue by Region, 2013 ($ Million)

Region	Landings Revenue	Region	Landings Revenue
U.S.	5,556.5	Pacific	829.6
North Pacific	1,903.4	Mid-Atlantic	457.9
New England	1,162.0	South Atlantic	161.2
Gulf of Mexico	936.7	Western Pacific	107.9

Table 9. Commercial Fisheries Landings Revenue by State, 2013 ($ Million)

State	Landings Revenue	State	Landings Revenue
Alaska	1,903.4	Rhode Island	86.4
Massachusetts	566.9	North Carolina	79.1
Maine	473.9	New York	78.3
Louisiana	399.5	Maryland	75.9
Washington	361.4	Alabama	55.4
Texas	267.5	East Florida	48.7
California	255.3	Mississippi	34.7
West Florida	179.5	South Carolina	21.6
Oregon	179.2	New Hampshire	20.2
Virginia	163.3	Connecticut	14.6
New Jersey	132.9	Georgia	11.8
Hawai'i	107.9	Delaware	7.4

Overall, the greatest portion of the nation's landings revenue in 2013 was generated in Alaska ($1.9 billion), which contributed 34% to the U.S. total (see Table 9). More than half of Alaska's landings revenue came from walleye pollock and salmon. Massachusetts ($472 million) and Maine ($401 million) contributed the most to total U.S. shellfish revenue, 16% and 14%, respectively. Sea scallop accounted for the majority of landings revenue in Massachusetts and American lobster accounted for the majority of landings revenue in Maine.

Landings

In 2013, U.S. commercial fishermen landed 9.8 billion pounds of finfish and shellfish – an increase of 1.2% from 2004 and an increase of 5.7% from 2012 (see Table 10). Finfish landings totaled 8.5 billion pounds in 2013, a 0.2% increase from 2004 and a 7% increase from 2012. Over 60% of total catch in 2013 was made up of the ten U.S. key species and species groups. Walleye pollock and menhaden had the highest landings in 2013, with 3 billion pounds and 1.4 billion pounds landed, respectively. These two species accounted for 45% of U.S. landings in 2013.

Table 10. Commercial Fisheries Landings by Region, 2013 (Millions of Pounds)

Region	Landed Weight	Region	Landed Weight
U.S.	9,809.1	New England	635.9
North Pacific	5,886.6	Mid-Atlantic	582.7
Gulf of Mexico	1,392.4	South Atlantic	91.9
Pacific	1,263.4	Western Pacific	32.5

Table 11. Commercial Fisheries Landings by State, 2013 (Millions of Pounds)

State	Landings	State	Landings
Alaska	5,886.6	West Florida	62.4
Louisiana	1,041.2	North Carolina	50.2
Virginia	381.7	Maryland	43.9
California	363.6	New York	33.0
Oregon	339.6	Hawai'i	32.5
Washington	272.6	Alabama	23.1
Maine	265.1	East Florida	21.4
Massachusetts	264.6	Georgia	10.6
Mississippi	180.5	South Carolina	9.7
New Jersey	120.0	New Hampshire	8.3
Rhode Island	90.0	Connecticut	8.0
Texas	85.2	Delaware	4.0

The greatest increases in landings between 2004 and 2013 were experienced by American lobster (66%) and Pacific salmon (45%). All other key species and species groups experienced landing declines over this period.

Tuna landings experienced the smallest decline (1%) while Pacific halibut experienced the largest decline in landings (62%) between 2004 to 2013.The largest increase in landings of key species or species groups between 2012 and 2013 was experienced by Pacific salmon (68%) and the largest decrease was experienced by sea scallop (28%).

Commercial Fisheries Facts

Landings revenue

- The 10 U.S. key species or species groups accounted for 61% of total landings revenue in 2013.
- Finfish and other fishery products ($2.7 billion) contributed slightly less than shellfish ($2.9 billion) to total landings revenue in the U.S. in 2013.
- The top two species, Pacific salmon and shrimp, combined to account for 24% of total commercial fishing revenue.

Landings

- The 10 U.S. key species and species groups accounted for 63% of total landings in 2013.
- Finfish and other fishery products accounted for 87% of total U.S. landings in 2013 or 8.5 billion pounds.
- Walleye pollock (31%) contributed the most to total landings, followed by menhaden (14%) and Pacific salmon (11%).

Prices

- Of the top 10 key species or species groups, sea scallop ($11.41), Pacific halibut ($3.92), and American lobster ($3.08) had the highest national average ex-vessel price per pound in 2013.
- Walleye pollock ($0.14) and menhaden ($0.09) had the lowest ex-vessel price per pound in 2013.

Alaska fishermen harvested the majority (60%) of the nation's total landings, landing 5.9 billion pounds of finfish and shellfish (see Table 11). Alaska also accounted for the majority of finfish landings, 5.8 billion pounds or 68% of the U.S. finfish total. Walleye pollock comprised 51% of Alaska's landings in 2013. More shellfish was landed in California (274 million pounds), Louisiana (169 million pounds), and Maine (146 million pounds) than in any other state. Together they accounted for 46% of all shellfish landed in the U.S. in 2013.

Prices

Of the ten U.S. key species and species groups, sea scallop, Pacific halibut, and American lobster received the highest national average ex-vessel prices in 2013, $11.41 per pound, $3.92 per pound, and $3.08 per pound, respectively. Menhaden and walleye pollock had the lowest ex-vessel prices in 2013 at $0.09 and $0.14 per pound, respectively. Landings of these species were the largest among the U.S. key species and species groups: 3.0 billion pounds of walleye pollock and 1.4 billion pounds of menhaden were landed in 2013.

Over the 10 year period from 2004 to 2013, significant price increases were observed for sea scallop (up 129%, 68% in real terms) and menhaden (up 80%, 32% in real terms). The average ex-vessel price of blue crab (up 70%), Pacific halibut (up 76%), Pacific salmon (up 73%), tunas (up 64%), and walleye pollock (up 75%) also increased substantially since 2004. Prices for blue crab (up 35%) and shrimp (up 22%) had the largest year-over-year increases from 2012 to 2013. Prices for tunas (down 5%), Pacific halibut (down 13%), and sablefish (down 24%) all declined from 2012 to 2013.

RECREATIONAL FISHERIES

In 2013, there were approximately 11 million recreational saltwater anglers across the U.S. who took 72 million saltwater fishing trips around the country. These anglers spent $4.9 billion on fishing trips and $20 billion on durable fishing-related equipment. Recreational fishing activity supported 370,000 jobs nation-wide. Of the U.S. key recreational species or species groups, seatrout (45 million fish), and Atlantic croaker and spot (43 million fish) were the most often caught by saltwater anglers in 2013.

Key U.S. Recreational Species

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

Economic Impacts and Expenditures[15]

Economic impacts from recreational fishing activities (impacts from fishing trips and durable equipment combined) supported 370,000 full- and part-time jobs across the U.S. in 2013 (see Table 12). Sales impacts from recreational angling trips and durable expenditures totaled $52 billion and value added impacts totaled $29 billion. Durable equipment impacts contributed most to these totals, accounting for 79% 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 8 percent of sales, jobs, income and value added impacts.

Table 12. Recreational Economic Impacts Trends for the United States

	2010	2011	2012	2013
Jobs	326,188	363,932	380,898	369,779
Sales (Billions)	$49.8	$55.8	$58.4	$52.4
Income (Billions)	$14.6	$18.2	$19.0	$17.9
Value Added (Billions)	$23.2	$29.1	$30.4	$29.0
Total Trips (Millions)	73.5	71.3	72.0	71.9

Table 13. Sales, income and value added impacts generated by the Recreational Fishing Industry, 2013

State	Sales ($ Million)	Income ($ Million)	Value Added ($ Million)
West Florida	9,086.3	3,423.8	5,341.4
East Florida	3,992.4	1,618.0	2,486.5
Louisiana	2,162.5	801.4	1,249.1
Texas	1,697.5	644.5	1,030.3
California	1,679.4	679.7	1,069.5
North Carolina	1,601.5	633.8	989.1
New Jersey	1,534.0	665.0	999.6
Alabama	927.4	358.8	569.1
Virginia	774.3	321.6	516.8
Massachusetts	755.5	349.5	507.2
Alaska	642.4	261.4	386.4
Maryland	606.8	271.7	404.8
Washington	477.2	177.3	299.8
New York	406.5	185.2	274.6
South Carolina	384.4	145.8	231.9
Oregon	327.8	138.0	202.9
Rhode Island	226.1	102.1	155.4
Georgia	214.5	88.6	137.7
Mississippi	146.3	53.6	87.7
Maine	128.2	50.3	77.1
Hawaii	127.2	43.8	69.4
Connecticut	87.2	36.9	62.6
Delaware	83.0	34.3	53.1
New Hampshire	62.8	29.6	41.2

[15] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).

U.S. anglers spent a total of $4.9 billion on fishing trips and related expenditures in 2013. Of this total, expenditures for private boat fishing trips contributed the most ($2 billion) followed by shore-based fishing trips ($1.7 billion), and for-hire fishing trips ($1.2 billion). Expenditures on fishing-related durable equipment totaled $20.2 billion in 2013. Anglers spent more on boat expenses ($10.3 billion) than any other durable good. Other major expenditures include fishing tackle ($3.8 billion), vehicle expenses ($2.6 billion), and second home expenses ($2 billion).

The highest sales impacts from marine recreational fishing expenditures were generated in West Florida followed by East Florida, Louisiana, Texas, and California (see Table 13). The lowest sales impacts were generated in New Hampshire. The greatest employment impacts from expenditures on saltwater recreational fishing were generated in West Florida followed by East Florida, Louisiana, North Carolina, and Texas (see Tale 14). New Hampshire had the fewest number of jobs supported by recreational fishing with 666 jobs.

Table 14. Jobs Supported by the U.S. Recreational Fishing Industry

State	Jobs	State	Jobs
West Florida	76,236	South Carolina	4,280
East Florida	36,557	Washington	3,847
Louisiana	18,991	New York	3,835
North Carolina	16,150	Oregon	3,458
Texas	14,436	Rhode Island	2,520
California	13,954	Georgia	2,177
New Jersey	13,010	Mississippi	1,583
Alabama	10,163	Maine	1,364
Virginia	7,987	Hawaii	1,071
Massachusetts	6,923	Delaware	875
Maryland	5,869	Connecticut	703
Alaska	5,457	New Hampshire	666

Participation[16]

Nationwide, 10.9 million people participated in marine recreational saltwater fishing in 2013. Approximately 9.3 million of 2013 anglers were residents of a U.S. coastal county and 1.5 million anglers were residents of a non-coastal county. Between 2004 and 2013, the total number of U.S. saltwater anglers fishing in their home states decreased 8%.

Fishing Trips[17]

The total number of fishing trips taken in the U.S. decreased 16% from 2004 to 2013. Relative to 2012, total fishing trips taken in the U.S. increased 1% with the largest increase occurring in the for-hire mode (21%). West Florida, East Florida and California had the greatest number of recreational fishing trips in 2013 (see Table 16).

Table 15. Recreational Fishing Trips by Region (2013 – Millions of Fishing Trips)

Region	Trips
U.S. Total	71.9
Gulf of Mexico	25.2
South Atlantic	16.6
Mid-Atlantic	14.2
Pacific	7.5
New England	6.3
Hawaii	1.5

Table 16. Recreational Fishing Trips by State (2013 – Thousands of Fishing Trips)

State	Trips	State	Trips
West Florida	15,949	South Carolina	1,977
East Florida	8,981	Mississippi	1,761
California	5,519	Hawai'i	1,513
North Carolina	4,968	Washington	1,266
Louisiana	4,661	Rhode Island	1,229
New Jersey	4,364	Connecticut	1,210
New York	3,873	Delaware	765
Alabama	2,862	Oregon	711
Massachusetts	2,939	Georgia	690
Maryland	2,735	Maine	596
Virginia	2,480	New Hampshire	313

Harvest and Release[18]

Among the ten key U.S. recreational species or species groups, seatrout, Atlantic croaker and spot, summer flounder, and striped bass were the most commonly caught by anglers in 2013. These species or groups were caught in large numbers relative to the other species or groups: seatrout (45 million fish), Atlantic croaker and spot (43 million fish), summer flounder (16 million fish), and striped bass (11 million fish). Anglers fishing in the Mid-Atlantic and New England caught most of the Atlantic croaker, summer flounder, and striped bass in 2013, while most seatrout were caught in the Gulf of Mexico and the South Atlantic.

Recreational catch of rockfishes experienced a 49% increase between 2004 and 2013, the largest change during this 10 year time period. Recreational catch of sharks also increased substantially, 33% over the 10 year time period. Striped bass, little tunny and Atlantic bonito, large Atlantic tunas, summer flounder, salmon, and Pacific halibut catch all declined from 2004 to 2013.

[16] Participation estimates include Puerto Rico but do not include Alaska or Texas. Hawai'i is included for 2004-2006 only.
[17] Trip estimates include Puerto Rico but do not include Alaska or Texas. Hawai'i trip estimates are only available for the shore and private boat mode.
[18] Harvest and release estimates include Puerto Rico but do not include Alaska. For Hawai'i, these estimates are only available for the shore and private boat mode.

Recreational Fisheries Facts

Participation

- An average of 11.8 million anglers fished in U.S. annually from 2004 to 2013.
- In 2013, coastal county residents made up 86% of total anglers. These anglers averaged 87% of total anglers annually over the 10 year time period.

Fishing trips

- In the U.S., an average of 78.8 million fishing trips were taken annually from 2004 to 2013.
- Private or rental boat and shore-based fishing trips accounted for 34 million and 34 million fishing trips, respectively, in 2013. Together, these made up 95% of the fishing trips taken in 2013.

Harvest and release

- Seatrout was the most commonly caught key species or species group from 2004 to 2013, averaging 47 million fish caught over the 10 year time period. Of these, 60% were released rather than harvested.
- Of the ten commonly caught key species or species groups, six were released more often than harvested over this time period. The species or species group that was most commonly released was sharks (97% released).
- 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.

Sharks also experienced the largest year over year increase in catch from 2012 to 2013, increasing 58% to 6.6 million fish. A relatively small proportion of sharks caught are retained by recreational fishermen. Recreational catch of striped bass (up 57%), Pacific salmon (up 42%), and Atlantic croaker and spot (up 41%) also increased substantially from 2012 to 2013. Catch of little tunny and Atlantic bonito, sea trout, large Atlantic tunas, and summer flounder all declined from the previous year.

MARINE ECONOMY[19]

In 2012, there were 7.4 million establishments throughout the entire U.S. economy (including marine and non-marine related establishments). These establishments employed nearly 116 million full- and part-time employees and had a total annual payroll of $5.4 trillion. From 2004 to 2012, the number of establishments and employees both increased by less than 1% and total annual payroll increased 27% nationwide. The nation's gross domestic product was over $16 trillion in 2012 and employee compensation was $8.6 trillion.[20]

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.[21] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

For this report, the marine economy, a subset of the national economy, is comprised of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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

There were 589 employer establishments in seafood product and packaging sector in 2012, a 20% decrease from 2004. These firms employed approximately 31,000 full- and part-time employees in 2012 and had a total annual payroll of $1.2 billion. Relative to 2004 levels, this was a 19% decrease in workers and a 12% decrease in payroll after adjusting for inflation. More

[19] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[20] 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 (accessed September 15, 2014).
[21] U.S. Bureau of Labor Statistics, "Location Quotient Calculator," http://data.bls.gov/location_quotient/ (accessed September 15, 2014).

than one-third of these establishments were located in Alaska (116 establishments) and Washington (90 establishments). In 2012, there were 1,766 nonemployer firms engaged in seafood product preparation and packaging, a 64% increase from 2004 levels. Annual receipts from nonemployer firms in this sector totaled more than $115 million and represent a 24% increase in real terms from 2004. Most of these firms were located in Florida (307 firms), California (151 firms), and New York (133 firms), and Texas (123 firms).

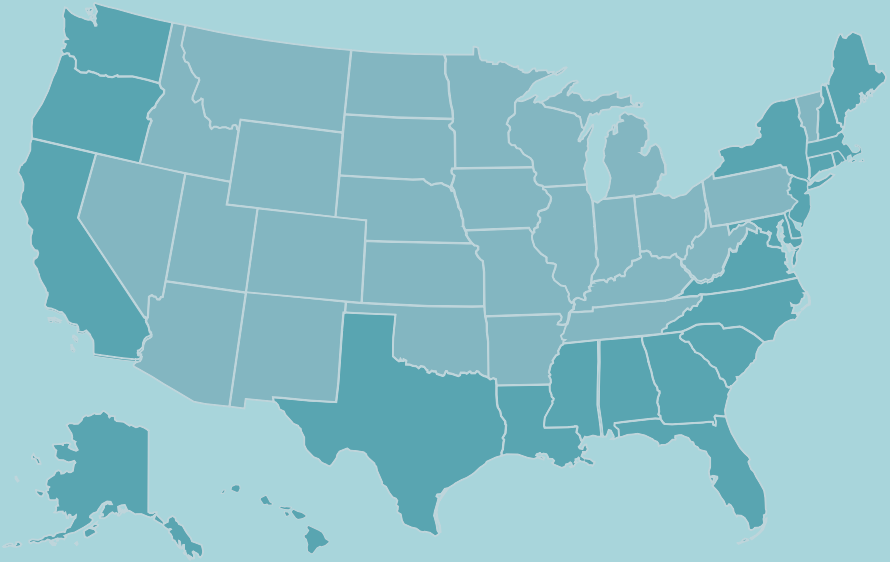
There were 1,954 employer establishments involved in seafood wholesale activities in 2012. These firms employed 20,030 works and had payroll of $867 million. These figures represent an 11% decline in employment and a 5% decline in payroll (after adjusting for inflation) from 2004 to 2012. California (275 establishments), New York (243 establishments), and Florida (226 establishments) had the most establishments in the wholesale seafood sector.

In 2012, there were 1,957 employer establishments in seafood retail sector in 2012, a decline of 9% since 2004. These firms employed approximately 10,293 full- and part-time employees in 2012 (down 4% from 2004) and had a total annual payroll of $238 million (up 5% in real terms from 2004). The employer establishments for retail seafood sales were primarily located in New York (385 establishments), Florida (151), and California (149). There were 2,657 nonemployer firms engaged in retail seafood sales, a 27% increase from 2004 levels. Many of these firms were located in Florida (383 firms), California (236), New York (205), or Louisiana (184).

Transport, Support, and Marine Operations

Within the U.S. transport, support, and marine operations sectors, marinas had by far the highest number of establishments in 2012. There were almost 3,782 marinas that employed nearly 26,000 full- and part-time workers. Compared to 2004 levels, this was a 8% decrease in both establishment and employee numbers. Florida (432) and New York (415) had the most marinas. The ship and boat building sector had both the highest payroll and highest employment among the marine transports, support and operations industries. Payroll in this sector was $7.5 billion (a 16% increase in real terms since 2004) and it had 136,000 employees (a 1% decrease from 2004). Many ship and boat building establishments were located in Florida (258), Washington (141), California (120), and Louisiana (116). California (12,681 employees) and Louisiana (10,933) were the two states with the highest employment in this sector.

Tables | National Overview



2013 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	1,350,627	142,249,051	39,756,670	60,309,157	831,182	54,360,411	19,999,870	28,304,126
Commercial Harvesters	198,647	14,489,402	4,914,438	7,568,450	198,647	14,489,402	4,914,438	7,568,450
Seafood Processors & Dealers	221,448	30,242,095	9,544,208	13,267,517	63,017	8,557,903	2,700,818	3,754,440
Importers	201,735	55,492,874	8,893,792	16,916,658	0	0	0	0
Seafood Wholesalers & Distributors	60,320	8,117,096	2,667,334	3,816,591	29,150	3,922,577	1,288,986	1,844,363
Retail	668,477	33,907,584	13,736,898	18,739,941	540,369	27,390,530	11,095,627	15,136,873

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	3,769,942	3,952,692	4,233,299	4,204,578	4,394,065	3,930,071	4,527,119	5,351,316	5,103,619	5,547,949
Finfish & Other	1,777,802	1,860,060	2,107,034	2,067,933	2,255,004	1,877,866	2,168,796	2,580,323	2,382,328	2,611,300
Shellfish	1,992,140	2,092,632	2,126,265	2,136,645	2,139,061	2,052,205	2,358,323	2,770,993	2,721,291	2,936,649
Key Species										
American lobster	374,306	415,415	404,395	368,528	325,122	311,184	404,092	422,794	429,269	460,077
Blue crab	145,905	140,818	126,034	149,163	160,931	163,291	206,058	181,996	186,882	192,190
Menhaden	75,045	62,520	70,553	92,725	90,995	90,254	92,876	133,015	107,748	129,263
Pacific halibut	176,893	177,599	202,131	227,348	217,726	140,613	207,282	213,465	152,403	117,907
Pacific salmon	302,775	330,816	310,865	381,589	395,253	369,744	554,798	618,332	489,076	756,653
Sablefish	135,316	136,240	132,156	115,610	124,590	128,713	124,385	184,175	140,747	101,614
Sea scallop	320,039	432,514	386,341	386,045	370,053	375,569	455,770	585,157	558,809	467,323
Shrimp	446,043	412,718	452,979	429,993	444,817	379,503	409,334	538,118	506,911	587,867
Tunas	89,952	86,358	86,324	93,875	106,869	96,069	107,966	136,425	163,200	146,227
Walleye pollock	292,027	447,428	380,744	344,550	436,076	254,295	280,413	404,246	453,460	407,844

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	9,688,745	9,712,427	9,552,024	9,313,573	8,360,478	7,900,349	8,046,050	9,894,373	9,280,079	9,809,087
Finfish & Other	8,516,634	8,630,877	8,356,824	8,230,436	7,299,749	6,630,131	6,736,921	8,525,779	7,970,662	8,531,394
Shellfish	1,172,111	1,081,550	1,195,200	1,083,137	1,060,729	1,270,218	1,309,129	1,368,594	1,309,417	1,277,693
Key Species										
American lobster	90,073	87,809	96,119	81,039	87,749	100,775	117,586	126,224	149,542	149,298
Blue crab	174,561	159,242	166,122	157,080	162,384	176,393	199,938	199,218	176,900	134,730
Menhaden	1,495,240	1,243,807	1,306,632	1,484,230	1,344,468	1,407,366	1,259,754	1,899,375	1,410,403	1,389,726
Pacific halibut	79,181	76,264	71,891	69,967	67,000	59,812	56,467	42,864	33,988	30,048
Pacific salmon	738,746	899,759	663,567	886,054	659,196	705,063	787,712	780,073	635,775	1,069,327
Sablefish	52,848	51,093	47,227	43,875	43,285	42,828	40,317	41,279	41,300	39,339
Sea scallop	64,108	56,626	60,123	58,450	53,384	57,921	57,540	59,193	56,875	40,953
Shrimp	316,566	264,163	332,491	273,636	248,647	304,982	249,017	312,185	307,729	290,426
Tunas	56,323	44,252	49,826	50,642	47,882	49,062	48,002	49,846	59,320	55,756
Walleye pollock	3,353,374	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

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.16	4.73	4.21	4.55	3.71	3.09	3.44	3.35	2.87	3.08
Blue crab	0.84	0.88	0.76	0.95	0.99	0.93	1.03	0.91	1.06	1.43
Menhaden	0.05	0.05	0.05	0.06	0.07	0.06	0.07	0.07	0.08	0.09
Pacific halibut	2.23	2.33	2.81	3.25	3.25	2.35	3.67	4.98	4.48	3.92
Pacific salmon	0.41	0.37	0.47	0.43	0.60	0.52	0.70	0.79	0.77	0.71
Sablefish	2.56	2.67	2.80	2.63	2.88	3.01	3.09	4.46	3.41	2.58
Sea scallop	4.99	7.64	6.43	6.60	6.93	6.48	7.92	9.89	9.83	11.41
Shrimp	1.41	1.56	1.36	1.57	1.79	1.24	1.64	1.72	1.65	2.02
Tunas	1.60	1.95	1.73	1.85	2.23	1.96	2.25	2.74	2.75	2.62
Walleye pollock	0.08	0.09	0.10	0.10	0.14	0.15	0.14	0.13	0.12	0.14

2013 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	22,567	2,875,378	1,130,112	1,670,702
	Private Boat	29,800	4,413,440	1,416,990	2,449,397
	Shore	28,272	3,800,928	1,250,747	2,113,678
Total Durable Expenditures		289,140	41,351,811	14,053,155	22,755,611
Total Impacts		369,779	52,441,557	17,851,004	28,989,388

2013 Angler Trip & Durable Expenditures (thousands of dollars)[1]

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-residents	Residents		
For-Hire	NA	1,165,064	Fishing Tackle	3,799,816
Private Boat	NA	2,056,589	Other Equipment	1,513,454
Shore	NA	1,678,855	Boat Expenses	10,266,098
Total	NA	4,900,507	Vehicle Expenses	2,597,502
			Second Home Expenses	2,014,443
			Total Durable Expenditures	20,191,314
Total State Trip and Durable Equipment Expenditures				25,091,821

Recreational Anglers by Residential Area (thousands of anglers)[2]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	10,199	11,330	11,644	12,219	10,533	9,268	9,375	9,099	9,384	9,339
Non-Coastal	1,579	1,492	1,685	1,616	1,591	1,747	1,502	1,428	1,558	1,546
Total Anglers	11,779	12,822	13,329	13,835	12,124	11,015	10,877	10,527	10,941	10,884

Recreational Fishing Effort by Mode (thousands of angler-trips)[3]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	3,424	3,523	3,738	4,179	3,416	3,282	2,601	3,183	3,177	3,855
Private	44,009	43,247	42,718	46,465	44,912	37,649	37,759	35,318	34,705	34,135
Shore	38,017	37,343	38,691	37,024	37,220	33,633	32,104	31,695	32,976	33,882
Total Trips	85,451	84,113	85,147	87,667	85,548	74,563	72,464	70,195	70,857	71,872

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[4]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Drum (Atlantic croaker and spot)	H	19,796	20,356	22,936	26,567	24,018	15,765	13,356	13,319	11,951	17,632
	R	17,819	23,758	19,378	21,369	24,975	20,371	15,978	18,092	18,621	25,493
Drum (seatrouts)	H	16,953	16,099	18,903	17,563	21,077	20,189	16,739	22,240	20,881	17,562
	R	27,216	30,629	30,345	28,976	32,354	25,807	23,937	28,649	31,557	26,983
Little tunny & Atlantic bonito	H	407	182	313	295	203	233	190	283	386	348
	R	1,101	468	869	1,220	725	808	598	701	853	651
Sharks[5]	H	203	226	172	193	159	148	167	117	111	251
	R	4,790	6,087	5,436	5,996	5,561	5,301	5,214	3,744	4,080	6,387
Striped bass	H	2,621	2,491	2,741	2,449	2,345	1,994	1,977	2,250	1,509	2,148
	R	17,479	18,229	23,418	16,220	12,697	8,118	6,357	6,177	5,384	8,686
Summer flounder	H	4,390	4,105	4,035	3,110	2,363	1,828	1,510	1,845	2,277	2,545
	R	16,059	21,868	17,511	17,626	20,547	22,297	22,227	19,724	14,255	13,618
Tunas (large Atlantic species)[6]	H	774	669	567	730	798	528	595	423	676	644
	R	134	110	137	96	89	55	53	68	52	28
Pacific halibut	H	483	500	463	585	516	440	398	394	388	454
	R	369	380	353	438	359	321	304	311	324	324
Salmon	H	1,433	1,419	821	1,231	695	1,466	700	958	899	1,276
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rockfishes & scorpionfishes	H	2,595	3,616	2,677	2,453	2,067	2,200	2,418	3,084	3,589	4,130
	R	984	1,348	896	691	636	838	735	680	1,032	1,189

[1] All anglers reported in this table are U.S. residents; NA = not applicable
[2] Participation estimates include Puerto Rico but do not include Alaska or Texas. Hawai'i is included for 2004-2006 only.
[3] Effort estimates include Puerto Rico but do not include Alaska or Texas. Hawai'i effort estimates are only available for the shore and private boat mode.
[4] Harvest and release estimates include Puerto Rico but do not include Alaska. For Hawai'i, these estimates are only available for the shore and private boat mode.
[5] Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks, and unidentified sharks.
[6] Includes all tunas in the thunnus family.

United States Economy (% of national total)

	Establishments (millions)	Employees (millions)	Annual Payroll ($ trillions)	Employee Compensation ($ trillions)	Gross Domestic Product ($ trillions)	Commercial Location Quotient[1]
2004	7.39	115.07	4.25	6.73	12.21	1
2012	7.43	115.94	5.41	8.59	16.14	1
% change	0.59	0.74	0.02	21.69	24.36	--

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	1,080	1,110	1,142	1,303	1,308	1,395	1,617	1,757	1,766
	Receipts	78,745	81,871	80,066	88,230	89,670	95,219	104,990	110,745	115,167
Seafood sales, retail	Firms	2,098	2,260	2,089	2,610	2,522	2,455	2,513	2,514	2,657
	Receipts	203,951	210,450	211,186	231,776	233,002	207,139	199,810	212,679	217,702

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	734	717	670	685	663	645	638	620	589
	Employees	38,102	37,684	35,894	33,169	33,323	30,894	31,789	31,261	30,988
	Payroll	1,151,780	1,180,396	1,205,890	1,196,086	1,161,637	1,091,727	1,116,305	1,200,263	1,196,207
Seafood sales, wholesale	Establishments	2,330	2,314	2,222	2,438	2,063	2,099	2,183	2,287	1,954
	Employees	22,501	22,666	22,013	24,232	20,116	19,290	19,386	20,622	20,030
	Payroll	771,749	781,459	826,720	924,654	782,178	758,332	798,794	848,454	867,179
Seafood sales, retail	Establishments	2,151	2,155	2,115	2,094	2,044	1,967	1,982	1,972	1,957
	Employees	10,714	10,381	10,545	10,380	9,732	9,439	9,857	10,006	10,293
	Payroll	192,187	194,602	200,971	209,404	205,423	211,264	219,045	222,508	237,619

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	579	610	579	573	513	513	547	549	496
	Employees	21,928	21,025	22,172	22,568	21,019	20,919	17,528	18,590	19,099
	Payroll	1,179,549	1,232,342	1,376,033	1,552,467	1,694,613	1,470,159	1,288,001	1,400,267	1,467,709
Deep sea freight transportation	Establishments	435	465	456	427	365	376	372	378	375
	Employees	11,314	11,357	11,473	11,308	10,231	11,180	10,288	10,362	12,375
	Payroll	735,804	801,863	825,752	855,683	852,063	863,363	867,797	921,990	1,073,529
Deep sea passenger transportation	Establishments	83	87	87	92	71	78	56	55	58
	Employees	12,017	11,376	11,387	ds	ds	ds	ds	ds	ds
	Payroll	652,443	628,793	667,949	ds	ds	ds	ds	ds	ds
Marinas	Establishments	4,092	4,143	4,025	4,085	3,972	3,891	3,937	3,896	3,782
	Employees	28,100	27,511	28,339	28,788	28,686	26,643	26,657	26,557	25,764
	Payroll	814,821	839,848	894,097	945,355	954,032	905,488	927,499	953,497	913,140
Marine cargo handling	Establishments	551	549	540	552	532	541	507	545	343
	Employees	58,618	59,670	61,905	62,941	63,736	56,386	57,275	59,517	43,824
	Payroll	2,899,703	3,034,672	3,261,953	3,428,126	3,272,723	2,776,791	3,026,861	3,159,964	2,601,146
Navigational services to shipping	Establishments	804	803	802	830	868	846	847	836	850
	Employees	11,881	10,819	12,043	12,997	13,419	12,689	13,529	13,441	12,532
	Payroll	591,510	584,689	699,375	756,552	847,938	826,384	937,980	893,889	838,959
Port & harbor operations	Establishments	234	244	229	223	268	258	287	255	525
	Employees	6,888	7,453	7,002	6,573	5,608	5,100	4,844	4,933	25,396
	Payroll	300,692	319,338	323,554	318,608	282,671	250,358	290,467	306,882	1,345,857
Ship & boat building	Establishments	1,793	1,799	1,764	1,771	1,782	1,615	1,540	1,497	1,560
	Employees	137,633	141,620	142,057	148,864	157,512	137,759	127,691	127,522	136,365
	Payroll	5,499,783	5,654,818	5,877,830	6,405,570	7,269,306	6,674,187	6,529,523	6,845,322	7,543,402

[1] 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.
[2] ds = these data are suppressed.

North Pacific Region

- Alaska

Hauling In Alaskan king crab pots
(photo credit: NOAA Fisheries)

MANAGEMENT CONTEXT

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

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

Of the stocks or stock complexes covered in these fishery management plans, only the blue king crab - Pribilof Islands stock is listed as overfished. The Bering Sea/ Aleutian Island octopus complex, the only stock or stock complex in this region subject to overfishing in 2012, was removed from the overfishing list in 2013.

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 $1.2 billion in 2012, which exceeds the total landings revenue of any other state. Below 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 derived 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 and the State of Alaska determined that each CDQ entity has maintained or improved performance over 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 component of this IFQ Program show that relative to its Baseline period (3-year period prior to implementation) 2012 quota, landings, and active vessels decreased while inflation-adjusted halibut revenue and revenue per active vessel increased. Similarly, the Sablefish component of the IFQ Program show 2012 sablefish quota, landings, and active vessels decreased while inflation-adjusted sablefish revenue and revenue per active vessel increased relative to its Baseline.

The American Fisheries Act (AFA) Pollock Cooperatives was established in 1998 and manages two allocations of Bering Sea and Aleutian Islands walleye pollock. The Program objectives were to settle allocation disputes between inshore (catcher vessels) and offshore (catcher/processors) sectors and rationalize the fishery. Key program performance indicators show that relative to its Baseline, 2012 quota, landings, inflation-adjusted pollock revenue and revenue per active vessel increased while the number of active vessels decreased.

Bering Sea and Aleutian Islands (BSAI) Crab Rationalization In 2005, the BSAI Crab Rationalization Program was implemented to address the race to harvest, high by-

catch and discard mortality, product quality issues, and 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 Community Development Quota (CDQ) and Adak Community allocations, and regional landings and processing requirements, as well as several community protection measures. The key performance indicators of this Program show that relative to its Baseline, 2012 quota, landings and the number of active vessels have decreased while inflation-adjusted crab revenue and revenue per active vessel increased.

The Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives, commonly referred to as the Amendment 80 Cooperatives, was implemented in 2007 to create economic incentives to improve retention of all fish caught and 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, 2012 landings and inflation-adjusted catch share species revenue and revenue per active vessel increased while the number of vessels active declined.

The Central Gulf of Alaska Rockfish Program was initially established as a two-year (2007-2008) pilot program by the U.S. Congress and later extended to five years. The NPFMC modified this Program and implemented this Catch Share Program in 2012. Program objectives 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 for 2012 the number of active vessels, landings, and inflation-adjusted catch share species revenue and revenue per active vessel increased relative to the Baseline.

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.

A recent change in recreational fisheries management includes the creation of a new charter program in the existing halibut fishery. The Charter Halibut Limited Access Program established new federal Charter Halibut Permits (CHPs) for operators in the charter halibut fishery in regulatory Areas 2C (Southeast Alaska) and 3A (Central Gulf of Alaska). The program goals are to increase the value of the resource, limit boats to qualified active participants in the guided sport halibut sector, and enhance economic stability in rural coastal communities.

COMMERCIAL FISHERIES

North Pacific fishermen earned over $1.9 billion from their commercial harvest (5.9 billion pounds) in 2013. Landings revenue was dominated by salmon ($680 million), walleye pollock ($406 million), and crab ($230 million), which together accounted for 69% of revenue. Walleye pollock contributed the most to landings in 2013, accounting for 51% of total landings volume (3 billion pounds).

Key North Pacific Commercial Species

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

The North Pacific groundfish fishery is different from most other fisheries in the nation 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 are estimated by using prices obtained from the shore-side sector. These species include Pacific cod, flatfish, atka mackerel, walleye pollock, rockfish, and sablefish. 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.

Economic Impacts[1]

In 2013, Alaska's seafood industry generated $4.7 billion in sales impacts, $2.1 billion in income impacts, $2.6 billion in value added impacts, and approximately 69,000 full- and part-time jobs. The commercial harvesters sector contributed the most to these impacts with $3.3 billion in sales, $1.5 billion in income, and $1.8 billion in value added impacts, and more than 49,000 jobs.

Landings Revenue

In 2013, landings revenue for finfish and shellfish totaled over $1.9 billion, a 68% increase from total revenue generated in 2004 (23% in real terms) and a 2% increase from 2012. With 87% of revenue, finfish and other catch accounted for a majority of the 2013 landings revenue relative to shellfish. Landings revenue was dominated by salmon ($680 million), walleye pollock ($406 million), and crab ($230 million), which together accounted for 69% of revenue.

The largest changes in landings revenue between 2004 and 2013 were for rockfish (241% increase, 150% in real terms), flatfish (196% increase, 117% in real terms), and salmon (166% increase, 95% in real terms). Pacific halibut experienced a decline in revenue from 2004 to 2013 (-34%, -52% in real terms).

Salmon landings revenue increased 54% from 2012 to 2013, the largest increase among the key species and species groups for this time period. Salmon landings in 2012 were at there lowest point in the 10-year time series (2004-2013) due to the fishery disaster in 2011 and 2012 that affected several salmon stocks. Atka mackerel experienced the largest one-year decline (-51%) in landings revenue from 2012-2013. This decrease corresponds to the reduction in the Bering Sea total allowable catch for this species in 2013.

Commercial Fisheries Facts

Landings revenue

- On average, the key species or species groups account for 98% of total revenue, ($1.5 billion) generated in the North Pacific Region.
- Salmon contributed more than any other species or species group, averaging $407 million in landings revenue from 2004 to 2013.

Landings

- Key species or species groups contributed an average of 98% annually to total landings between 2004 and 2013.
- Walleye pollock, contributed the most to landings in the region, averaging 2.8 billion pounds from 2004 to 2013.

Prices

- Pacific halibut had the highest average annual ex-vessel price per pound ($3.30) over the time period, followed by sablefish ($2.96), and crab ($2.44).
- Walleye pollock had the lowest average annual ex-vessel price per pound ($0.13) over the time period, followed by flatfish ($0.17), and Atka mackerel ($0.19).

Landings

In 2013, North Pacific commercial fishermen landed 5.9 billion pounds of finfish and shellfish, a 9% increase from 2004 landings. In terms of key species or species groups, walleye pollock landings contributed the most to landings, accounting for 51% of total landings (3 billion pounds). Landings of salmon (1 billion pounds), Pacific cod (681 million pounds), and flatfish (660 million pounds) also significantly contributed to the total landings. Relative to 2004, landings of flatfish (143%), rockfish (80%) crab (65%), and salmon (45%) increased most. The largest decreases between 2004 and 2013 were experienced by Pacific halibut (62%) and Atka mackerel (53%).

Prices

In all, 2013 ex-vessel prices per pound for four of the key species and species groups were above their average annual price for the 10 year time period. The

[1] 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)

largest price changes from 2004 to 2013 were for Atka mackerel (173% increase, 100% increase in real terms), rockfish (87%, 37% in real terms) salmon (81%, 33% in real terms), Pacific halibut (76% increase, 30% increase in real terms), and walleye pollock (75% increase, 28% increase in real terms). Crab (-10%, -34% in real terms) and Pacific herring (-5%, -30% in real terms) experienced price declines.

RECREATIONAL FISHERIES

Recreational fishermen spent approximately 980,000 days fishing in Alaska in 2013. These anglers numbered almost 298,000, with 59% of them non-residents. Pacific halibut was the most caught species or species group, with approximately 778,000 fish caught in 2013.

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[2]

The contribution of recreational fishing activities 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 totaled almost 5,500 jobs full- and part-time jobs generated by recreational fishing activities in the state.

In addition to employment impacts, the contribution of recreational fishing activities to the region's economy can be measured in terms of sales, income impacts, and the contribution of these activities to gross domestic product (value added impacts). In 2013, economic impacts in Alaska totaled: $642 million in sales impacts, $261 million in income impacts, and $386 million in value added.

Expenditures for fishing trips and durable equipment across Alaska in 2013 totaled $451 million. Approximately 70% of these expenditures were related to trip expenses, with a large portion coming in the form of for-hire trip expenses by non-resident anglers ($144 million). The greatest durable goods expenditures were for boat expenses ($83 million).

Participation

In 2013, there were 298,000 recreational saltwater anglers who fished in Alaska, which represents an 8% decrease from 2004 and a 7% increase from 2012. In 2013, non-resident anglers made up 59% of total anglers.

Days Fished[3]

Anglers who fished in Alaska spent approximately 980,000 days fishing in 2012. This was a 3% decrease in days fished since 2004 and a 21% increase from 2012.

Harvest and Release

Of Alaska's key species and species groups, Pacific halibut (778,000), coho salmon (615,000), and pink salmon (316,000) were most frequently caught by recreational fishermen. Between 2004 and 2013, sockeye salmon experienced a notably large increase in the number of fish caught (56%). Chum salmon (up 106%), coho salmon (up 96%), Chinook salmon (up 61%), and sockeye salmon (up 47%) all experienced substantial increases in catch from 2012 to 2013.

Recreational Fishing Facts

Participation
- An average of 304,000 anglers fished in North Pacific annually between 2004 and 2013.
- Alaska residents accounted for 41% of total anglers on average over the 10 year time period.

Days Fished
- There was an annual average of 931,000 days fished by anglers in Alaska between 2004 and 2013.

Harvest and release
- Pacific halibut was the most commonly caught key species or species group with an annual average of 810,000 fish caught from 2004 to 2013.

MARINE ECONOMY[4]

Across the entire economy of Alaska, approximately 258,000 full- and part-time employees were employed by more than 20,000 establishments and annual payroll

[2] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).
[3] In Alaska, recreational fishing data is collected in terms of the number of days spent fishing rather than the number of fishing trips taken.
[4] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).

totaled $14 billion in 2012. Gross state product totaled $60 billion and employee compensation totaled $26 billion in 2012.[5]

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.[6] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average. The Bureau of Labor Statistics suppressed data regarding the CFLQ for Alaska for 2012.

For this report, the marine economy, a subset of the regional economy, is comprised of two industry sectors: 1) seafood sales and processing (employer establishments and nonemployer firms) and 2) transport, support, and marine operations (employer establishments). These sectors are comprised 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

There were 25 nonemployer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging, down from 26 in 2004 and 26 in 2011. Annual receipts for these firms were $2.7 million in 2012, up 56% since 2004 and down 6% from 2011. There were 116 employer establishments engaged in seafood product preparation and packaging in 2012, up from 113 in 2004 and down from 122 in 2011. Employment in this sector totaled about 8,300 workers in 2012, a 23% increase from 2004 and a 3% decrease from 2011. Annual payroll was $297 million, 37% increase from 2004 and a less than 1% increase from 2011.

There were 47 employer establishments in the wholesale seafood sales sector, down 49% from 2004 and 1 less than in 2011. There were 143 employees in this sector, a 24% decrease from 2004 and a 10% decrease from 2011. Annual payroll was $11 million, which represented a 45% increase from 2004 and a 10% increase from 2011.

There were 15 nonemployer firms in the seafood retail sales sector with annual receipts totaling $1.6 million. This is the same number of firms as in 2011 and an 80% increase in annual receipts (2004 data were suppressed). There were 15 employer establishments in the seafood retail sales sector in 2012, up from 6 in 2004 and 10 in 2011. Annual payroll for firms in this sector was just over $2 million in 2012, down 19% from 2011 (payroll data from 2004 was suppressed). Data on employment in the seafood retail sales sector for 2012 was suppressed.

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, the shipping industry plays an important role in Alaska's economy as Marine Cargo Handling ($26.5 million), Navigational Services to Shipping ($9.9 million), and Port and Harbor Operation ($25.5 million) had substantial payrolls in 2012.

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

Tables | Alaska

2013 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	68,540	4,692,951	2,097,384	2,600,648	68,192	4,654,642	2,084,856	2,583,512
Commercial Harvesters	49,455	3,272,062	1,484,839	1,835,525	49,455	3,272,062	1,484,839	1,835,525
Seafood Processors & Dealers	15,032	1,198,125	522,853	648,238	14,764	1,176,556	513,419	636,560
Importers	54	14,964	2,398	4,562	0	0	0	0
Seafood Wholesalers & Distributors	449	46,506	15,924	20,793	439	45,467	15,568	20,328
Retail	3,549	161,293	71,370	91,531	3,534	160,558	71,030	91,099

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	1,131,025	1,296,207	1,325,338	1,500,377	1,773,630	1,268,687	1,604,161	1,947,491	1,857,531	1,903,383
Finfish & Other	965,307	1,136,822	1,201,146	1,319,531	1,521,992	1,073,144	1,397,573	1,680,709	1,564,584	1,656,756
Shellfish	165,718	159,385	124,192	180,846	251,638	195,543	206,588	266,782	292,947	246,627
Key Species										
Atka mackerel	12,335	16,112	14,816	17,506	21,688	29,734	30,535	30,031	30,636	15,279
Crab	153,742	146,131	110,572	168,195	240,747	180,264	189,553	248,693	275,745	230,139
Flatfish	41,512	61,315	68,200	74,507	96,326	69,233	79,510	109,682	123,384	123,045
Pacific cod	104,975	103,397	144,677	181,326	242,497	98,507	145,908	163,440	171,207	155,117
Pacific halibut	168,658	170,075	192,905	217,399	208,983	134,603	200,454	205,211	144,801	111,483
Pacific herring	14,029	13,429	7,455	14,817	22,912	29,294	23,026	12,305	19,430	16,280
Rockfish	10,146	13,174	18,002	17,422	16,773	14,450	21,587	33,628	33,241	34,637
Sablefish	76,807	76,781	85,023	88,498	92,943	87,660	97,651	139,712	120,163	82,008
Salmon	255,000	293,562	276,512	347,625	368,219	344,655	505,695	564,788	441,284	679,528
Walleye pollock	274,088	381,502	380,510	344,170	436,076	254,295	280,022	401,921	453,171	406,403

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	5,397,153	5,694,807	5,481,206	5,385,090	4,603,599	4,128,502	4,420,478	5,435,775	5,428,514	5,886,626
Finfish & Other	5,338,146	5,630,384	5,406,945	5,309,070	4,499,096	4,033,575	4,335,469	5,350,668	5,311,652	5,794,893
Shellfish	59,007	64,423	74,261	76,020	104,503	94,927	85,009	85,107	116,862	91,733
Key Species										
Atka mackerel	108,423	129,292	130,840	126,962	127,030	156,888	145,205	112,594	103,988	51,423
Crab	52,642	57,310	69,002	70,699	99,445	89,531	79,875	80,463	111,914	87,089
Flatfish	270,677	341,701	383,194	423,340	599,585	506,166	563,870	649,579	646,969	659,863
Pacific cod	584,754	547,849	521,041	491,022	495,546	491,073	538,759	663,188	716,906	681,317
Pacific halibut	76,558	73,922	69,154	67,242	64,639	57,749	54,857	41,291	32,422	28,696
Pacific herring	70,893	85,701	79,845	67,137	83,787	86,951	108,116	98,600	75,058	85,076
Rockfish	68,480	64,732	74,631	86,569	89,785	83,996	100,088	106,287	114,579	123,020
Sablefish	39,617	37,565	35,719	36,101	32,798	29,099	27,132	28,841	31,427	30,192
Salmon	697,897	872,318	634,227	861,253	640,070	671,181	756,825	738,122	611,163	1,012,612
Walleye pollock	3,353,055	3,409,905	3,403,893	3,068,211	2,277,638	1,869,214	1,947,575	2,810,777	2,872,187	3,003,135

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atka mackerel	0.11	0.12	0.11	0.14	0.17	0.19	0.21	0.27	0.29	0.30
Crab	2.92	2.55	1.60	2.38	2.42	2.01	2.37	3.09	2.46	2.64
Flatfish	0.15	0.18	0.18	0.18	0.16	0.14	0.14	0.17	0.19	0.19
Pacific cod	0.18	0.19	0.28	0.37	0.49	0.20	0.27	0.25	0.24	0.23
Pacific halibut	2.20	2.30	2.79	3.23	3.23	2.33	3.65	4.97	4.47	3.88
Pacific herring	0.20	0.16	0.09	0.22	0.27	0.34	0.21	0.12	0.26	0.19
Rockfish	0.15	0.20	0.24	0.20	0.19	0.17	0.22	0.32	0.29	0.28
Sablefish	1.94	2.04	2.38	2.45	2.83	3.01	3.60	4.84	3.82	2.72
Salmon	0.37	0.34	0.44	0.4	0.58	0.51	0.67	0.77	0.72	0.67
Walleye pollock	0.08	0.11	0.11	0.11	0.19	0.14	0.14	0.14	0.16	0.14

2013 Economic Impacts of Alaska Recreational Fishing Expenditures (thousands of dollars)[1]

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	2,094	256,108	120,720	153,092
	Private Boat	2,066	246,592	81,797	140,643
	Shore	158	19,216	6,340	10,725
Total Durable Expenditures		1,139	120,512	52,558	81,890
Total State Economic Impacts		5,457	642,428	261,415	386,350

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	143,595	25,008
Private Boat	69,157	64,280
Shore	11,356	5,068
Total	224,108	94,356

Equipment	Durable Goods Expenditures
Fishing Tackle	23,751
Other Equipment	21,952
Boat Expenses	82,687
Vehicle Expenses	1,894
Second Home Expenses	2,439
Total Durable Expenditures	132,723

Total State Trip and Durable Equipment Expenditures	451,187

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Out-of-State	193	207	197	205	190	158	159	161	160	176
Coastal/Non-Coastal	130	127	120	127	119	127	122	124	118	121
Total Anglers	323	334	317	332	309	284	281	286	278	298

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Days Fished	1,007	1,054	941	1,052	935	914	811	811	808	980

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Chinook Salmon	H	110	116	117	110	71	89	78	85	63	81
	R	124	127	104	110	80	96	66	95	62	120
Chum Salmon	H	24	17	14	18	12	22	11	21	11	25
	R	61	42	34	34	28	34	19	38	20	39
Coho Salmon	H	560	695	395	506	403	418	350	386	263	493
	R	193	191	107	122	89	94	74	88	50	122
Lingcod	H	31	38	35	42	37	32	32	33	33	34
	R	52	67	53	70	65	46	39	36	36	33
Pacific Halibut	H	483	500	463	585	516	440	398	394	388	454
	R	369	380	353	438	359	321	304	311	324	324
Pink Salmon	H	132	149	65	133	88	117	82	72	78	113
	R	297	343	167	280	151	224	121	135	141	203
Razor Clams	H	551	451	483	389	593	556	357	436	NA	291
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	NA	3
Rockfish Species	H	180	184	173	198	226	209	224	211	230	256
	R	227	199	165	178	171	149	151	122	121	121
Sockeye Salmon	H	24	27	21	32	29	34	28	31	28	40
	R	10	11	7	21	10	10	6	10	8	13

[1] Data reported in this table includes saltwater fishing activities only.
[2] 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.
[3] In this table, '(1)' = 0-999 fish.

Alaska's State Economy (% of national total)[1,2]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[3]
2004	19,387 (0.3%)	223,153 (0.2%)	9.12 (0.2%)	17.58 (0.3%)	35.53 (0.3%)	4.84
2012	20,427 (0.3%)	258,219 (0.2%)	13.99 (0.3%)	25.72 (0.3%)	59.64 (0.4%)	ds
% change	5.1	13.6	34.8	31.6	40.4	NA

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	26	17	22	33	31	32	28	26	25
	Receipts	1,731	1,315	1,055	1,837	1,455	1,693	2,482	2,882	2,708
Seafood sales, retail	Firms	ds	11	12	12	13	16	23	15	15
	Receipts	ds	752	649	1,358	1,431	1,350	1,595	903	1,626

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	113	124	113	114	122	121	119	122	116
	Employees	6,749	6,621	6,866	6,506	7,707	7,572	8,074	8,578	8,289
	Payroll	216,599	235,457	246,067	262,127	254,894	255,403	268,208	296,851	297,284
Seafood sales, wholesale	Establishments	93	88	77	68	57	54	52	48	47
	Employees	187	177	224	167	143	ds	ds	159	143
	Payroll	7,561	7,928	8,509	8,528	8,389	8,445	9,141	9,985	10,943
Seafood sales, retail	Establishments	6	11	7	7	9	10	10	10	15
	Employees	ds	22	ds	ds	37	44	ds	ds	ds
	Payroll	ds	1,175	ds	ds	1,839	1,824	1,986	2,487	2,019

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	30	43	46	46	49	50	55	63	47
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	27,357	33,888	33,132	ds	ds	ds
Deep sea freight transportation	Establishments	4	5	5	3	3	3	3	1	2
	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	1	6	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	22	22	21	13	14	13	14	14	13
	Employees	62	71	ds	48	66	56	ds	ds	ds
	Payroll	2,367	2,612	ds	1,763	2,303	2,181	1,932	2,053	1,613
Marine cargo handling	Establishments	13	13	11	17	12	13	13	14	8
	Employees	488	703	503	677	ds	ds	ds	ds	334
	Payroll	21,078	20,827	22,876	35,345	ds	ds	ds	ds	26,481
Navigational services to shipping	Establishments	29	32	31	31	25	23	25	22	21
	Employees	280	318	ds	ds	296	312	303	321	97
	Payroll	20,676	20,334	ds	25,058	23,233	25,630	27,543	27,156	9,938
Port & harbor operations	Establishments	3	2	2	2	7	8	9	8	18
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	582
	Payroll	ds	ds	ds	ds	ds	ds	ds	1,790	25,545
Ship & boat building	Establishments	14	14	17	16	17	21	22	23	23
	Employees	286	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	8,815	ds	ds	ds	ds	ds	ds	ds	ds

[1] ds = these data are suppressed.
[2] NA = not applicable.
[3] 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.

Pacific Region

- California
- Oregon
- Washington

NOAA Fisheries salmon research cruise, Pacific Ocean
(photo credit: Jeff Harding)

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 (NMFS) under four fishery management plans (FMPs).

Pacific Region FMPs

1. Pacific coast groundfish
2. Pacific coast salmon
3. Coastal pelagic species
4. West coast highly migratory species

Three of the stocks or stock complexes covered in these fishery management plans were listed as overfished in 2013: canary rockfish, Pacific ocean perch, yelloweye rockfish, and Pacific bluefin tuna. Cowcod and Sacramento River fall Chinook salmon stock were removed from the overfished list in 2013; the latter is now considered rebuilt. Pacific bluefin was added to the overfished list in 2013. Two stock complexes were subject to overfishing in 2013: 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 often 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 also constrain the fishery.

Salmon management is further complicated by the need to ensure equitable allocation of harvest among diverse user groups and to coordinate 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 including 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 and federal disaster relief to 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 whereby allowable harvest varies with sea surface temperature. Because the geographic range of sardine tends to expand with abundance, harvest allocation between 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). Once 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 Fishery Management Plan for Highly Migratory Species (HMS) 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 are also a very important component of the catch for the Pacific Regions recreational commercial passenger fishing vessel fleet, and the private recreational boat fleet.

Market-based management tools are used by fishery managers to reduce overcapitalization, 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 comprise a category of such tools. For example, in 2001 the PFMC implemented the Pacific sablefish permit stacking program. This program allowed vessels to stack multiple vessel permits on a single vessel in order to improve economic efficiency through rationalization of the fixed gear fleet, increase benefits 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 2012 the number of active vessels and landings decreased relative to the Baseline period (average of 3-year period prior to start date). Inflation-adjusted revenue and revenue per active vessel increased during this period.

More recently (January 2011), the PFMC implemented the Pacific Trawl Rationalization Program that 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 for a viable, profitable and efficient groundfish fishery; promote practices that reduce bycatch 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.

Results from the whiting component of this program show that in 2012 the number of active vessels declined relative to the Baseline while landings and inflation-adjusted catch share species revenue and revenue per active vessel increased. In the non-whiting component of this program, 2012 landings, the number of active vessels, and inflation-adjusted catch share species revenue declined relative to the Baseline while inflation-adjusted revenue per active vessel increased.

Ecolabels are another market-based management tool that is intended to encourage 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, the American Albacore Fishing Association albacore tuna, and the west coast limited entry trawl groundfish fisheries have all received certifications from the MSC.

COMMERCIAL FISHERIES

In 2013, commercial fishermen in the Pacific Region landed 1.3 billion pounds of finfish and shellfish, earning $830 million in landings revenue. Crab ($249 million) and other shellfish ($193 million) dominated landings revenue (53%) but comprised only 10% of Pacific Region landings. These species groups commanded ex-vessel prices of $2.86 and $4.85 per pound, respectively.

Key Pacific Region Commercial Species

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

Washington had the highest landings revenue in the region ($361 million) in 2013, followed by California ($255 million), and Oregon ($179 million). California had the highest landings (364 million pounds), followed by Oregon (340 million pounds), and Washington (273 million pounds).

Economic Impacts[1]

In 2013, the Pacific Region's seafood industry impacts were largest in California followed by Washington and Oregon. The seafood industry generated the following sales impacts: $221 billion in California, $7.3 billion in Washington and $1.4 billion in Oregon. Income impacts were: $4.6 billion in California, $2 billion in Washington, and $0.5 billion in Oregon. Value added impacts were: $7.6 billion in California, $3.1 billion in Washington, and $0.7 billion in Oregon. Employment impacts were 132,000 jobs in California, 65,000 jobs in Washington, and 21,000 jobs in Oregon.

The sector that generated the greatest employment impacts in California was the importers sector (56,000 jobs) followed by the retail sector with 54,000 jobs. In

[1] 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).

Washington the retail sector (24,000 jobs) generated the largest employment impacts, followed by the seafood processors & dealers sector (15,000 jobs). In Oregon the retail sector (11,000 jobs) generated the largest employment impacts, followed by the commercial harvesters sector (6,000 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 $830 million in 2013. This was an 88% increase (a 38% increase in real terms) from 2004 levels and a 23% increase relative to 2012. Totaling $552 million in 2013, shellfish revenue experienced a 111% increase (a 55% increase in real terms) from 2004 to 2013 and experienced a 29% increase from 2012 to 2013.

Crab ($249 million) and other shellfish ($193 million) had the highest landings revenue in the Pacific Region in 2013. Together they accounted for 53% of total landings revenue but only 10% of total landings in the Pacific Region. Between 2004 and 2013, the landings revenue for crab increased 116% (59% in real terms) and increased 88% (38% in real terms) for other shellfish.

From 2004 to 2013, squid experienced the largest increase in landings revenue (273% nominal, 174% real) due to favorable ocean conditions and high demand in foreign markets. Landings revenue for hake also increased substantially (181% nominal, 107% real) largely due to higher prices that have emerged since the implementation of the catch share program. Crab also experienced a sizable increase in landings revenue (116%, 59% real) during this period. Sablefish (-17%) and flatfish (-10%) experienced declines in landings revenue in real terms from 2004 to 2013.

Species or species groups with large increases in landings revenue between 2012 and 2013 included salmon (62%), crab (41%), flatfish (33%), hake (30%), and other shellfish (28%). Sablefish (-31%) and albacore tuna (-8%) experienced decreases in landings revenue from 2012 to 2013.

Washington had the highest finfish landings revenue ($98 million) followed by Oregon ($81 million), and California ($65 million). Shellfish landings revenue was also dominated by Washington ($263 million), followed by California ($190 million), and Oregon ($98 million).

Commercial Fisheries Facts

Landings revenue

- On average between 2004 and 2013, the key species or species groups accounted for 92% of total revenue, generating $517 million in the Pacific Region.
- On average, landings revenue in the Pacific region was split 63% shellfish and 37% finfish.
- Crab had the highest annual average landings revenue in the region from 2004 to 2013: $145 million

Landings

- Key species or species groups contributed an average of 78% annually to total landings between 2004 and 2013, or 876 million pounds.
- On average, landings volume in the Pacific region was split 28% shellfish and 72% finfish.
- Hake (whiting), contributed the most to landings in the region, averaging 455 million pounds from 2004 to 2013.

Prices

- Other shellfish had the highest average annual ex-vessel price per pound ($4.54) between 2004 to 2013, followed by crab ($2.28), and sablefish ($2.07).
- Hake (whiting) had the lowest average annual ex-vessel price per pound ($0.08) over the time period, followed by squid ($0.27), and flatfish ($0.42).

Landings

Fishermen in the Pacific Region landed 1.3 billion pounds of finfish and shellfish in 2013. This was an 11% increase from 2004 and an 18% year-over-year increase from 2012. Finfish landings contributed 67% of total landings in the Pacific Region (848 million pounds) in 2013. Finfish landed volume decreased 9% over the 10-year period from 2004 to 2013 and increased 18% from 2012 to 2013. Shellfish landings doubled from 2004 to 2013 and increased by 19% from 2012 to 2013, to over 415 million pounds.

Hake (Pacific whiting), at 506 million pounds, and squid, at 230 million pounds, were the species or species groups with the largest landings volume in the Pacific region in 2013. Squid (160%) and shrimp (142%)

showed the greatest increase in landings and more than doubled from 2004 to 2013. Sablefish (-29%), albacore tuna (-10%), and flatfish (-4%) declined in terms of landings volume over the same period. Salmon landings more than doubled between 2012 and 2013 (up 133%) largely due to higher quotas that reflected projected increases in abundance. Crab (65%), hake (46%), and other shellfish (46%) also showed large year-over-year percentage increases in landings. Landings of sablefish (-21%) and albacore tuna (-7%) declined from 2012 to 2013.

Prices

The ex-vessel prices for the Pacific Region's key species and species groups in 2013 were higher than their 10 year average for four of the key species (in real terms, prices only increased for five species). Ex-vessel prices for hake (140%, 71% in real terms) followed by crab and albacore tuna (both 70%, 26% in real terms) experienced the biggest increases between 2004 and 2013. Relative to the ex-vessel prices in 2012, prices for the Pacific Region's flatfish (up 13%) and squid (up 7%) increased from 2012 to 2013. Region-level average prices for all other species or species groups declined from the previous year.

RECREATIONAL FISHERIES

In 2013, more than 1.7 million recreational anglers took 7.5 million fishing trips in the Pacific Region. Over 69% of these anglers were residents of a regional coastal county. Of the total saltwater fishing trips in the Pacific Region 65% were shore-based and 26% were taken from a private or rental boat.

Key Pacific Region Recreational Species

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

Economic Impacts and Expenditures[2]

The contribution of recreational fishing activities in the Pacific 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 California were the highest in the region with 14,000 full- and part-time jobs generated by recreational fishing activities in the state. Washington (3,800) and Oregon (3,500 jobs) followed in terms of employment impacts generated by recreational fishing activities.

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 2013, sales impacts were also the highest in California ($1.7 billion), followed by Washington ($477 million), and Oregon ($328 million). California also had the highest value added impacts ($1 billion), followed by Washington ($300 million), and Oregon ($203 million).

The total saltwater fishing trip and durable equipment expenditures were $1.9 billion across the Pacific Region in 2013. Approximately 63% of these expenditures were related to durable equipment purchases. The greatest expenditures were for boat purchases ($529 million) and fishing tackle ($346 million). Fishing trip related expenditures by the Pacific Region's non-residents totaled over $49 million of which the greatest portion can be attributed to for-hire-based fishing trips ($33 million). Residents of the Pacific Region spent $644 million on trip-related expenses with the majority of these expenses related to shore trips ($291 million).

Participation

There were 1.7 million recreational anglers who fished in the Pacific Region in 2013. This represents a 4% increase from 2004 and a less than 1% increase from 2012. Total participation was made up of 69% residents of coastal counties in Pacific region states.

Fishing Trips

Recreational fishermen took 7.5 million fishing trips in the Pacific Region in 2013. This was a 13% increase from 2004 (6.7 million trips) and was 70,000 more trips

[2] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).

than were taken in 2012. Of the total trips taken in the Pacific Region in 2013, approximately 67% of the trips were shore based (5 million trips). The other most popular mode of fishing was private or rental boat based with 1.9 million trips in 2013.

Recreational Fishing Facts

Participation

- An average of 1.6 million anglers fished in the Pacific Region annually from 2004 to 2013.
- Residents of coastal counties within the Pacific region accounted for an average of 72% of total anglers annually over the 10 year time period.

Fishing trips

- In the Pacific Region, an average of 6.5 million fishing trips were taken annually from 2004 to 2013.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 1.7 million and 4.2 million fishing trips, respectively, from 2004 to 2013.

Harvest and release

- Rockfish and scorpionfishes was the most commonly caught key species or species group, averaging 3.4 million fish over the 10 year time period.
- Of the ten commonly caught key species or species groups, six were harvested more often than released over this time period.

Harvest and Release

The Pacific region's species and species groups caught most frequently in 2013 were rockfishes and scorpionfishes (4.9 million fish), surfperches (2.0 million fish), and barracuda, bass and bonito (1.3 million fish). Between 2004 and 2013, albacore and other tunas had the largest percentage increase in the number of fish caught (64%) followed by rockfish and scorpionfishes (56%). Barracuda, bass and bonito had the largest percentage decrease in the number of fish caught (-72%) followed by mackerel and croakers (both -66%) from 2004 to 2013.

Relative to 2012, the number of flatfish (37%) and sculpins (24%) caught had the largest percentage increases in 2013. From 2012 to 2013 mackerel (-27%) and albacore and other tunas (-21%), in contrast, had the largest annual percentage decrease in the number caught.

MARINE ECONOMY[3]

Across all sectors of the economy in California, Oregon, and Washington nearly 17 million full- and part-time employees were employed by more than 1.1 million establishments in 2012. Annual payroll totaled $881 billion. Total employee compensation in the Pacific region totaled $1.4 trillion and the combined gross state product of all states totaled about $2.7 trillion.[4]

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.[5] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

In 2012, the commercial fishing location quotient (CFLQ) for Washington was the highest in the region at 12.51. Washington's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 12.51 times higher than the level of employment in these industries nationwide. The 2012 CFLQ in California was lowest in the region at 0.56.

For this report, the marine economy, a subset of the regional economy, is comprised of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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

In 2012, there were 207 nonemployer firms engaged in seafood product preparation and packaging across the

[3] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[4] 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 (accessed September 15, 2014).
[5] U.S. Bureau of Labor Statistics, "Location Quotient Calculator," http://data.bls.gov/location_quotient/ (accessed September 15, 2014).

Pacific region, with California (151 firms) accounting for the vast majority of these firms. In addition, receipts from these firms totaled $14 million in 2012, a decrease of less than 1% from 2011. The number of employer establishments in this sector decreased 14% from 2004 to 2012, to 149, with 90 businesses located in Washington. Employment and payroll decreased by 8% and 21%, respectively, from 2004 to 2012.

There were 397 seafood wholesale establishments in the Pacific region in 2012, a decrease of less than 1% from 2004. Most of these firms (275) were in the located in California. There were 4,700 employees in the seafood wholesale sector across the region in 2012 with annual payroll of $233 million.

Nonemployer firms engaged in seafood retail sales in the Pacific region totaled 289 in 2012, a 24% increase from 2004 levels. California had the vast majority of firms (236) in this sector. These firms had receipts totaling $21.7 million in 2012. Region-wide, there were 207 employer establishments in the seafood retail sales sector in 2012, a decrease of 11% from 2004. Most of these firms were in California (149). The number of employees in the seafood retail sector regionally increased 7% from 2004 to 2012, to 1,400 employees. Payroll in this sector was $35.2 million in 2012.

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 383 establishments classified as marinas, employing 2,835 workers and spending $93 million on payroll in 2012. The marine cargo handling sector accounted for employment of 18,759 workers and more than $1.3 billion in payroll in California alone. The Ship and Boat Building Sector consisted of 294 establishments employing 19,479 workers and contributing $913 million in payroll across all three states in the region.

Tables | Pacific Region

2013 Economic Impacts of the Pacific Seafood Industry (thousands of dollars)

		With Imports				Without Imports			
	Landings Revenue	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
California	255,320	132,035	21,019,365	4,576,714	7,557,456	19,474	1,434,400	530,862	733,754
Oregon	179,193	21,063	1,359,682	478,202	669,841	18,503	949,571	394,104	527,995
Washington	361,391	64,599	7,270,644	2,030,011	3,050,112	29,998	1,918,271	794,754	1,075,654

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	440,474	414,584	471,788	459,772	500,447	501,938	566,579	729,785	674,258	829,584
Finfish & Other	178,693	166,922	176,425	176,104	215,784	168,495	202,527	260,625	245,531	278,068
Shellfish	261,781	247,662	295,363	283,668	284,663	333,442	364,052	469,160	428,728	551,516
Key Species										
Albacore tuna	27,242	20,574	23,767	21,612	28,845	27,541	28,780	43,347	45,736	41,871
Crab	115,365	97,127	143,758	121,136	107,107	123,865	132,843	182,085	176,821	249,132
Flatfish	12,741	13,816	12,974	14,462	15,738	14,155	10,511	11,225	11,637	15,459
Hake (whiting)	21,819	29,139	34,425	32,603	58,492	14,104	27,316	52,869	47,054	61,321
Other shellfish	102,423	107,438	116,161	120,569	129,947	142,348	142,227	181,122	150,183	192,926
Rockfish	6,832	6,559	6,848	7,541	9,257	8,974	9,226	9,446	9,420	9,869
Sablefish	17,230	20,366	22,991	20,984	27,279	34,481	35,977	44,873	28,106	19,503
Salmon	47,676	37,188	34,306	33,865	26,992	24,986	48,986	53,456	47,516	76,961
Shrimp	30,586	15,706	12,433	17,298	25,132	16,594	21,941	40,638	40,327	42,536
Squid	19,748	31,516	26,998	29,169	26,585	56,928	71,173	66,557	63,894	73,720

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	1,138,763	1,301,649	1,169,906	1,109,222	1,091,673	899,043	1,065,499	1,176,780	1,069,860	1,263,401
Finfish & Other	932,610	1,070,529	935,523	902,887	906,773	582,120	650,822	756,733	719,345	847,953
Shellfish	206,153	231,120	234,383	206,335	184,900	316,923	414,677	420,047	350,515	415,449
Key Species										
Albacore tuna	31,764	19,649	28,117	25,483	24,507	27,055	25,477	24,284	30,585	28,467
Crab	69,247	61,849	85,301	51,888	45,075	59,158	61,668	66,518	52,834	87,016
Flatfish	29,895	31,495	27,689	33,502	37,409	40,599	33,281	25,557	24,439	28,764
Hake (whiting)	474,460	569,273	558,078	454,533	531,277	253,053	355,216	496,363	347,171	505,614
Other shellfish	31,275	30,907	30,611	29,543	28,557	30,733	28,166	29,318	27,235	39,764
Rockfish	8,057	7,406	6,633	7,447	9,469	10,458	11,038	9,910	10,405	10,791
Sablefish	12,905	13,742	13,718	11,630	12,978	15,822	15,055	14,139	11,580	9,124
Salmon	40,609	27,249	29,172	24,600	19,040	33,742	30,693	41,799	24,305	56,521
Shrimp	29,422	26,069	20,290	26,497	35,799	33,456	46,191	66,686	66,319	71,337
Squid	88,215	123,090	108,561	109,464	85,200	205,643	288,678	267,983	214,988	230,365

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Albacore tuna	0.86	1.05	0.85	0.85	1.18	1.02	1.13	1.78	1.50	1.47
Crab	1.67	1.57	1.69	2.33	2.38	2.09	2.15	2.74	3.35	2.86
Flatfish	0.43	0.44	0.47	0.43	0.42	0.35	0.32	0.44	0.48	0.54
Hake (whiting)	0.05	0.05	0.06	0.07	0.11	0.06	0.08	0.11	0.14	0.12
Other shellfish	3.27	3.48	3.79	4.08	4.55	4.63	5.05	6.18	5.51	4.85
Rockfish	0.85	0.89	1.03	1.01	0.98	0.86	0.84	0.95	0.91	0.91
Sablefish	1.34	1.48	1.68	1.80	2.10	2.18	2.39	3.17	2.43	2.14
Salmon	1.17	1.36	1.18	1.38	1.42	0.74	1.60	1.28	1.95	1.36
Shrimp	1.04	0.60	0.61	0.65	0.70	0.50	0.48	0.61	0.61	0.60
Squid	0.22	0.26	0.25	0.27	0.31	0.28	0.25	0.25	0.30	0.32

2013 Economic Impacts of the Pacific Recreational Fishing Expenditures (thousands of dollars)

	Trips	Jobs	Sales	Income	Value Added
California	5,519	13,954	1,679,367	679,690	1,069,468
Oregon	711	3,458	327,804	138,005	202,915
Washington	1,266	3,847	477,220	177,274	299,822

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	32,967	136,988
Private Boat	10,518	215,894
Shore	5,215	291,446
Total	48,699	644,327

Equipment	Durable Goods Expenditures
Fishing Tackle	346,107
Other Equipment	151,336
Boat Expenses	528,698
Vehicle Expenses	168,180
Second Home Expenses	6,622
Total Durable Expenditures	1,200,943

Total State Trip and Durable Equipment Expenditures	1,893,969

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	1,168	1,028	1,257	1,184	1,065	1,136	1,047	1,069	1,181	1,151
Non-Coastal	429	409	481	379	385	638	384	390	468	511
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	1,597	1,437	1,738	1,563	1,450	1,774	1,431	1,459	1,649	1,662

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	649	624	635	605	514	492	455	654	647	725
Private	1,752	1,849	1,761	1,828	1,421	1,471	1,432	1,659	1,806	1,912
Shore	4,255	3,962	4,548	3,818	3,846	4,345	3,739	3,792	4,973	4,859
Total Trips	6,656	6,435	6,944	6,251	5,781	6,308	5,626	6,105	7,426	7,496

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Albacore & other tunas	H	80	23	45	106	51	80	90	53	153	96
	R	10	2	2	7	(1)	13	(1)	4	34	52
Barracuda, bass & bonito	H	2,126	1,015	668	537	434	412	373	435	371	215
	R	2,597	2,011	1,660	1,407	1,093	1,211	991	738	775	1,112
Croakers	H	619	572	456	427	321	427	173	128	256	173
	R	660	618	553	631	272	362	340	98	231	257
Flatfishes	H	499	560	325	260	344	329	417	641	561	713
	R	343	513	520	338	361	297	277	222	296	459
Greenlings	H	208	268	234	192	169	188	158	227	272	316
	R	344	283	209	153	141	194	197	292	306	283
Mackerel	H	945	1,023	1,158	823	940	753	479	590	438	246
	R	1,715	1,872	3,287	1,209	1,765	1,267	1,272	1,050	806	656
Rockfishes & scorpionfishes	H	2,415	3,432	2,504	2,255	1,841	1,991	2,194	2,873	3,359	3,874
	R	757	1,149	731	513	465	689	584	558	911	1,068
Salmon[3]	H	607	432	223	450	104	808	162	384	467	549
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpins	H	72	72	55	49	60	59	53	91	68	70
	R	246	238	222	208	228	200	198	238	229	298
Surfperches	H	1,297	945	1,164	861	832	752	638	1,017	1,144	1,034
	R	1,561	1,242	1,675	861	817	706	452	931	1,279	1,006

[1] 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.
[2] In this table, '(1)' = 0-999 fish.
[3] Salmon harvest estimates exclude release mortality.

Tables | California

2013 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	132,035	21,019,365	4,576,714	7,557,456	19,474	1,434,400	530,862	733,754
Commercial Harvesters	5,252	511,565	166,933	249,144	5,252	511,565	166,933	249,144
Seafood Processors & Dealers	5,185	528,448	195,953	260,010	2,245	227,807	84,473	112,087
Importers	56,274	15,479,845	2,480,941	4,718,935	0	0	0	0
Seafood Wholesalers & Distributors	11,550	1,615,600	524,020	732,092	778	108,772	35,280	49,289
Retail	53,775	2,883,907	1,208,867	1,597,274	11,199	586,256	244,176	323,233

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	140,615	116,084	129,907	127,580	120,861	159,253	187,263	222,160	243,948	255,320
Finfish & Other	58,798	46,640	43,164	50,363	46,968	46,682	44,291	55,805	55,230	65,068
Shellfish	81,816	69,444	86,743	77,217	73,893	112,571	142,971	166,355	188,718	190,251
Key Species										
Crab	43,381	19,653	46,483	28,626	24,227	32,508	43,016	53,762	88,207	91,818
Pacific sardine	3,957	3,150	5,100	8,218	7,575	5,544	4,366	4,398	4,249	1,510
Rockfish	4,447	4,145	4,630	4,924	5,781	5,330	5,453	5,644	5,170	5,748
Sablefish	3,724	4,295	4,892	4,873	6,224	9,765	11,491	15,121	8,988	7,047
Salmon	17,770	12,804	5,261	7,835	6	NA	1,215	5,096	12,850	22,956
Sea urchins	7,300	6,156	5,145	5,400	6,550	7,806	7,413	8,102	8,320	9,830
Shrimp	3,783	4,338	4,213	4,064	5,696	5,462	4,951	8,598	8,492	9,435
Spiny lobster	6,160	6,039	8,111	6,916	8,008	7,934	11,386	12,972	13,749	13,842
Squid	19,740	31,467	26,959	29,131	26,477	56,877	71,165	66,546	63,886	73,701
Swordfish	4,834	1,896	2,695	3,127	2,365	1,932	2,203	3,350	2,089	2,699

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	379,591	442,353	341,661	384,826	323,884	376,053	439,440	409,837	353,869	363,598
Finfish & Other	257,944	301,993	203,107	258,625	223,912	147,934	120,103	108,131	101,783	89,743
Shellfish	121,647	140,360	138,554	126,200	99,972	228,120	319,336	301,706	252,086	273,855
Key Species										
Crab	27,016	12,028	27,391	12,393	9,845	16,660	23,352	22,206	27,589	33,082
Pacific sardine	97,509	76,324	102,683	178,480	126,945	82,842	73,814	60,993	50,660	15,636
Rockfish	3,843	3,181	3,252	3,136	3,933	3,984	3,949	3,450	3,457	3,862
Sablefish	3,158	3,645	3,617	3,240	3,507	5,089	5,501	5,646	3,916	3,291
Salmon	7,113	4,962	1,184	1,743	1	NA	255	1,133	2,862	4,337
Sea urchins	12,219	11,304	10,664	11,131	10,283	12,205	11,230	11,465	11,443	12,945
Shrimp	3,520	2,944	1,197	2,015	3,011	3,596	4,522	8,217	7,255	9,525
Spiny lobster	860	761	886	663	741	706	716	751	876	764
Squid	88,167	122,887	108,410	109,150	84,071	205,278	288,497	267,890	214,867	230,061
Swordfish	2,613	653	1,187	1,210	1,168	898	815	1,365	886	1,174

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Crab	1.61	1.63	1.70	2.31	2.46	1.95	1.84	2.42	3.20	2.78
Pacific sardine	0.04	0.04	0.05	0.05	0.06	0.07	0.06	0.07	0.08	0.10
Rockfish	1.16	1.30	1.42	1.57	1.47	1.34	1.38	1.64	1.50	1.49
Sablefish	1.18	1.18	1.35	1.50	1.77	1.92	2.09	2.68	2.29	2.14
Salmon	2.50	2.58	4.44	4.50	4.16	NA	4.76	4.50	4.49	5.29
Sea urchins	0.60	0.54	0.48	0.49	0.64	0.64	0.66	0.71	0.73	0.76
Shrimp	1.07	1.47	3.52	2.02	1.89	1.52	1.09	1.05	1.17	0.99
Spiny lobster	7.16	7.93	9.15	10.44	10.80	11.24	15.91	17.27	15.69	18.11
Squid	0.22	0.26	0.25	0.27	0.31	0.28	0.25	0.25	0.30	0.32
Swordfish	1.85	2.90	2.27	2.58	2.03	2.15	2.70	2.46	2.36	2.30

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of California Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	2,057	260,114	115,096	161,580
	Private Boat	877	137,893	48,084	82,292
	Shore	2,664	373,555	131,641	218,962
Total Durable Expenditures		8,356	907,805	384,869	606,634
Total State Economic Impacts		13,954	1,679,367	679,690	1,069,468

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	29,119	110,054
Private Boat	5,195	91,166
Shore	3,374	260,436
Total	37,688	461,656

Equipment	Durable Goods Expenditures
Fishing Tackle	245,704
Other Equipment	104,165
Boat Expenses	241,197
Vehicle Expenses	119,858
Second Home Expenses	4,446
Total Durable Expenditures	715,370

Total State Trip and Durable Equipment Expenditures	1,214,714

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	865	740	991	878	819	888	803	714	921	873
Non-Coastal	280	263	335	226	246	490	241	238	316	352
Out-of-State	98	79	109	65	83	71	69	93	86	95
Total Anglers	1,243	1,082	1,435	1,169	1,148	1,449	1,113	1,045	1,323	1,320

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	521	504	522	489	424	385	357	560	544	609
Private	708	902	896	768	640	676	655	682	799	797
Shore	3,509	3,216	3,802	3,072	3,100	3,599	2,993	3,046	4,227	4,113
Total Trips	4,738	4,622	5,220	4,329	4,164	4,660	4,005	4,288	5,570	5,519

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Flatfishes	H	410	478	241	187	276	258	353	575	492	642
	R	295	465	471	292	313	241	231	176	249	411
Rockfishes & scorpionfishes	H	1,778	2,725	1,891	1,674	1,318	1,383	1,613	2,348	2,780	3,197
	R	701	1,058	668	456	402	605	494	483	839	977
Greenlings	H	72	125	104	69	48	64	38	88	118	144
	R	239	179	113	67	53	83	96	178	200	180
Salmon[2]	H	223	144	98	48	(1)	1	15	50	123	114
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpins	H	41	39	25	19	29	27	21	58	37	40
	R	98	87	74	58	78	50	46	86	77	144
Surfperches	H	1,046	694	913	610	581	501	387	766	892	782
	R	1,402	1,083	1,516	702	658	546	292	771	1,119	846
Albacore & other tunas	H	49	6	9	22	5	13	20	8	39	19
	R	10	2	3	7	(1)	13	2	6	36	36
Barracuda, bass & bonito[3]	H	2,126	1,015	668	537	434	412	373	435	371	215
	R	2,597	2,011	1,660	1,407	1,093	1,211	991	738	775	1,112
Mackerel	H	945	1,023	1,158	823	940	753	479	590	438	246
	R	1,715	1,872	3,287	1,209	1,765	1,267	1,272	1,050	806	656
Croakers	H	619	572	456	427	321	427	173	128	256	173
	R	660	618	553	631	272	362	340	98	231	257

[1] In this table, '(1)' = 0-999 fish.
[2] Salmon harvest estimates exclude release mortality.
[3] This species may not be equivalent to species with similar names listed in the commercial tables.

California's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	841,774 (11.4%)	13,264,918 (11.5%)	554.74 (13.1%)	885.42 (13.2%)	1,642.98 (13.5%)	0.82
2012	864,913 (11.6%)	12,952,818 (11.2%)	700.10 (12.9%)	1,120.26 (13%)	2,125.72 (13.2%)	0.56
% change	2.7	-2.4	20.8	21	22.7	-46.4

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	98	88	91	121	139	159	184	187	151
	Receipts	14,312	10,207	8,298	10,842	11,460	10,852	9,695	9,788	9,283
Seafood sales, retail	Firms	193	166	163	222	210	202	203	209	236
	Receipts	19,092	16,892	19,875	19,703	19,892	17,095	19,021	18,006	18,238

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	55	48	47	49	45	47	48	48	41
	Employees	2,931	2,963	2,592	2,229	2,024	2,167	1,820	1,842	1,668
	Payroll	72,178	92,642	78,065	75,886	65,215	69,529	62,480	60,411	52,977
Seafood sales, wholesale	Establishments	263	258	252	300	278	289	314	404	275
	Employees	3,744	3,925	4,063	4,429	3,321	3,183	3,223	3,505	3,441
	Payroll	124,657	134,576	144,758	159,672	132,139	128,813	137,810	149,302	173,959
Seafood sales, retail	Establishments	169	180	184	182	161	153	158	157	149
	Employees	945	999	1,031	1,004	932	976	985	1,088	1,043
	Payroll	16,686	18,832	19,900	21,224	20,585	21,785	22,718	25,168	24,221

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	20	26	22	29	28	30	25	21	22
	Employees	ds	1,346	ds	ds	ds	ds	554	395	ds
	Payroll	ds	129,262	ds	ds	ds	ds	30,431	24,708	ds
Deep sea freight transportation	Establishments	50	54	54	51	43	41	54	51	45
	Employees	901	ds	957	1,643	ds	ds	2,562	2,464	2,431
	Payroll	69,815	ds	84,199	116,628	ds	ds	236,235	256,962	236,423
Deep sea passenger transportation	Establishments	15	15	16	13	5	5	3	2	2
	Employees	ds	ds	1,552	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	72,119	ds	ds	ds	ds	ds	ds
Marinas	Establishments	271	263	268	276	277	276	270	269	251
	Employees	2,476	2,426	2,457	2,680	2,652	2,514	2,390	2,401	2,237
	Payroll	73,338	71,318	74,778	80,216	85,315	78,890	80,631	82,958	71,777
Marine cargo handling	Establishments	54	54	52	56	61	62	63	71	38
	Employees	20,456	19,303	20,975	22,395	22,086	17,428	18,449	18,812	18,759
	Payroll	1,179,221	1,273,698	1,448,623	1,484,308	1,453,281	1,211,572	1,273,268	1,333,805	1,351,874
Navigational services to shipping	Establishments	38	37	36	39	40	39	41	45	35
	Employees	ds	ds	817	858	815	804	765	760	800
	Payroll	ds	ds	63,893	63,610	65,225	61,720	58,899	62,065	61,166
Port & harbor operations	Establishments	20	20	20	18	17	19	21	19	59
	Employees	ds	ds	582	443	256	345	435	508	ds
	Payroll	ds	ds	32,523	30,001	23,316	26,889	37,560	41,688	ds
Ship & boat building	Establishments	143	141	132	136	136	123	117	108	120
	Employees	8,865	10,132	9,801	9,250	11,630	10,483	9,720	9,165	12,681
	Payroll	354,404	410,446	453,255	433,846	477,300	460,239	448,338	434,449	544,819

[1] 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.
[2] ds = these data are suppressed.

Tables | Oregon

2013 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	21,063	1,359,682	478,202	669,841	18,503	949,571	394,104	527,995
Commercial Harvesters	6,351	336,220	140,299	196,687	6,351	336,220	140,299	196,687
Seafood Processors & Dealers	1,978	166,308	63,873	83,454	1,865	156,774	60,211	78,669
Importers	1,212	333,266	53,412	101,594	0	0	0	0
Seafood Wholesalers & Distributors	752	89,036	30,204	40,511	536	63,464	21,529	28,876
Retail	10,770	434,851	190,414	247,596	9,750	393,113	172,065	223,763

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	101,022	88,196	106,093	97,298	103,042	106,959	106,378	148,354	128,030	179,193
Finfish & Other	49,634	53,192	46,326	47,589	56,912	52,749	58,730	76,718	72,205	81,422
Shellfish	51,388	35,005	59,767	49,709	46,130	54,210	47,648	71,636	55,825	97,770
Key Species										
Albacore tuna	9,145	8,815	8,067	9,468	10,666	10,191	12,425	18,766	15,077	16,079
Crab	42,960	26,603	53,810	38,208	29,168	42,413	32,757	44,696	29,130	71,208
Flatfish	6,460	7,281	7,547	7,930	9,163	8,468	6,861	6,780	7,316	9,854
Hake (whiting)	4,641	7,107	7,974	6,501	6,830	3,783	5,414	16,518	14,611	20,405
Oysters	3,292	1,232	1,163	1,847	2,748	4,506	3,317	1,869	1,661	1,798
Pacific sardine	4,870	6,199	3,743	4,551	5,665	5,291	5,252	3,192	8,977	6,299
Rockfish	1,633	1,387	1,564	2,002	2,610	2,500	2,520	2,473	2,660	3,023
Sablefish	6,935	8,657	9,787	9,494	13,737	15,919	15,069	17,351	11,529	7,594
Salmon	12,995	10,437	4,940	4,647	4,166	3,546	7,698	6,737	6,924	12,418
Shrimp	4,740	6,901	4,494	9,365	13,937	6,813	11,006	24,607	24,685	24,153

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	294,866	312,636	282,846	253,543	195,688	199,458	201,974	274,533	295,892	339,614
Finfish & Other	254,330	278,646	236,998	216,134	155,837	154,147	153,588	208,445	237,655	265,439
Shellfish	40,536	33,990	45,848	37,410	39,851	45,311	48,386	66,088	58,237	74,175
Key Species										
Albacore tuna	10,754	8,087	8,534	10,468	8,876	10,082	10,703	9,682	9,886	10,205
Crab	27,276	17,734	33,291	17,007	13,875	21,848	15,817	17,240	8,656	26,055
Flatfish	14,846	16,910	16,385	19,697	23,842	26,047	22,226	15,958	15,322	18,965
Hake (whiting)	130,238	135,503	122,804	81,481	55,511	53,466	57,017	142,092	102,651	160,098
Oysters	823	308	255	197	162	1,127	829	467	415	449
Pacific sardine	79,610	99,450	74,669	90,037	49,298	45,902	44,743	23,479	91,354	57,022
Rockfish	2,574	2,007	1,967	2,905	3,820	4,207	4,533	3,819	3,918	4,745
Sablefish	5,627	5,834	5,838	5,349	6,514	7,219	6,269	5,074	4,738	3,840
Salmon	5,914	4,666	1,810	1,370	1,860	2,311	2,765	2,386	1,916	3,505
Shrimp	12,207	15,784	12,128	19,990	25,400	22,019	31,429	48,198	49,009	47,472

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Albacore tuna	0.85	1.09	0.95	0.90	1.20	1.01	1.16	1.94	1.53	1.58
Crab	1.58	1.50	1.62	2.25	2.10	1.94	2.07	2.59	3.37	2.73
Flatfish	0.44	0.43	0.46	0.40	0.38	0.33	0.31	0.42	0.48	0.52
Hake (whiting)	0.04	0.05	0.06	0.08	0.12	0.07	0.09	0.12	0.14	0.13
Oysters	4.00	4.00	4.56	9.40	16.96	4.00	4.00	4.00	4.00	4.00
Pacific sardine	0.06	0.06	0.05	0.05	0.11	0.12	0.12	0.14	0.10	0.11
Rockfish	0.63	0.69	0.80	0.69	0.68	0.59	0.56	0.65	0.68	0.64
Sablefish	1.23	1.48	1.68	1.78	2.11	2.21	2.40	3.42	2.43	1.98
Salmon	2.20	2.24	2.73	3.39	2.24	1.53	2.78	2.82	3.61	3.54
Shrimp	0.39	0.44	0.37	0.47	0.55	0.31	0.35	0.51	0.50	0.51

2013 Economic Impacts of Oregon Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	242	22,707	9,347	12,727
	Private Boat	442	42,753	17,390	26,199
	Shore	139	13,196	5,238	7,902
Total Durable Expenditures		2,635	249,148	106,030	156,087
Total State Economic Impacts		3,458	327,804	138,005	202,915

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	718	12,750
Private Boat	2,704	35,265
Shore	1,130	10,110
Total	4,552	58,124

Equipment	Durable Goods Expenditures
Fishing Tackle	48,431
Other Equipment	23,891
Boat Expenses	127,099
Vehicle Expenses	26,780
Second Home Expenses	1,331
Total Durable Expenditures	227,532

Total State Trip and Durable Equipment Expenditures	290,208

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	90	87	82	86	79	85	82	81	84	89
Non-Coastal	125	123	125	130	120	128	124	122	128	133
Out-of-State	16	14	15	15	14	15	14	14	15	16
Total Anglers	231	224	222	231	213	228	220	217	227	238

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	64	58	56	61	48	56	51	52	57	64
Private	426	382	373	399	353	396	378	370	389	414
Shore	233	233	233	233	233	233	233	233	233	233
Total Trips	723	673	662	693	634	685	662	655	679	711

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Baitfishes	H	221	220	220	220	220	220	223	221	220	220
	R	124	124	124	124	124	124	125	125	125	125
Flatfishes	H	27	21	21	22	21	17	14	15	17	18
	R	7	7	7	6	8	9	5	5	6	6
Greenlings	H	97	104	97	95	92	90	90	97	111	132
	R	80	79	74	67	69	72	79	85	83	87
Rockfishes	H	381	400	331	321	307	363	373	290	320	402
	R	31	58	40	38	47	51	64	53	50	66
Salmon[2]	H	128	42	16	68	14	91	23	24	35	45
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpins	H	14	16	14	15	16	16	16	16	15	14
	R	57	60	57	59	59	59	61	61	61	63
Sturgeon	H	12	12	12	12	12	12	12	12	12	12
	R	24	24	24	24	24	24	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	17	5	12	59	24	43	38	29	63	22
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Wrasses (tautog)	H	16	36	201	353	167	86	116	26	194	107
	R	77	149	108	745	250	112	257	36	599	455

[1] In this table, '(1)' = 0-999 fish.
[2] Salmon estimates exclude release mortality.

Oregon's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	105,449 (1.4%)	1,355,542 (1.2%)	46.35 (1.1%)	76.86 (1.1%)	142.71 (1.2%)	2.77
2012	107,549 (1.4%)	1,363,523 (1.2%)	58.48 (1.1%)	97.75 (1.1%)	210.24 (1.3%)	3.69
% change	2	0.6	20.7	21.4	32.1	24.9

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	ds	9	7	ds	19	15	15	16	14
	Receipts	ds	309	54	ds	957	466	510	467	346
Seafood sales, retail	Firms	11	7	11	11	16	12	15	16	11
	Receipts	507	985	914	1,210	2,101	1,140	1,907	1,896	1,600

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

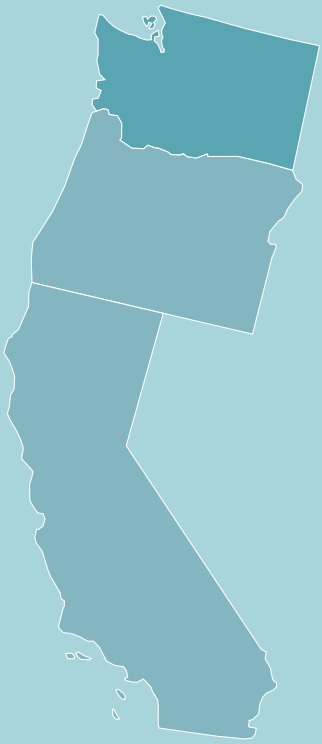
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	18	20	21	22	23	20	21	22	18
	Employees	738	762	896	819	850	812	806	805	934
	Payroll	20,593	19,022	25,881	27,394	27,616	26,202	27,007	32,438	31,970
Seafood sales, wholesale	Establishments	21	23	16	18	18	19	22	27	21
	Employees	126	ds	ds	ds	ds	ds	ds	ds	180
	Payroll	4,446	ds	ds	ds	ds	ds	ds	ds	7,602
Seafood sales, retail	Establishments	24	24	22	23	21	23	21	20	18
	Employees	171	204	306	171	178	151	162	163	126
	Payroll	3,259	3,464	3,294	3,185	3,370	3,515	3,651	3,613	2,851

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	8	9	9	13	8	9	8	8	8
	Employees	ds	ds	ds	476	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	25,206	ds	ds	ds	ds	ds
Deep sea freight transportation	Establishments	6	6	6	5	4	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	0	2	0	0	0	0	0
	Employees	NA	NA	NA	ds	NA	NA	NA	NA	NA
	Payroll	NA	NA	NA	ds	NA	NA	NA	NA	NA
Marinas	Establishments	41	40	37	38	37	33	30	33	32
	Employees	133	113	ds	138	106	109	102	102	119
	Payroll	2,988	3,550	ds	3,754	2,178	2,602	2,290	2,382	3,034
Marine cargo handling	Establishments	8	8	9	9	13	13	12	13	5
	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	21	20	17	20	17	18	18	20
	Employees	ds	ds	ds	183	200	189	144	152	176
	Payroll	ds	ds	ds	11,331	11,808	10,154	9,577	9,592	12,219
Port & harbor operations	Establishments	0	0	0	2	1	1	3	3	10
	Employees	NA	NA	NA	ds	ds	ds	ds	ds	90
	Payroll	NA	NA	NA	ds	ds	ds	ds	ds	6,512
Ship & boat building	Establishments	50	43	41	40	41	35	34	34	33
	Employees	1,285	1,298	1,230	1,441	1,692	1,886	980	1,179	1,504
	Payroll	43,357	45,183	43,416	47,950	74,583	90,446	42,004	55,068	77,718

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Tables | Washington



2013 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	64,599	7,270,644	2,030,011	3,050,112	29,998	1,918,271	794,754	1,075,654
Commercial Harvesters	8,816	713,402	305,888	430,056	8,816	713,402	305,888	430,056
Seafood Processors & Dealers	15,480	1,464,680	550,112	727,989	3,267	307,207	115,382	152,691
Importers	13,271	3,650,516	585,065	1,112,837	0	0	0	0
Seafood Wholesalers & Distributors	2,678	340,397	114,047	155,598	1,088	138,300	46,336	63,218
Retail	24,354	1,101,649	474,899	623,631	16,827	759,361	327,147	429,689

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	166,247	193,317	217,030	216,119	232,841	227,773	255,332	329,785	275,585	361,391
Finfish & Other	55,906	50,145	68,201	59,386	68,213	61,115	81,902	98,627	91,409	97,913
Shellfish	110,342	143,172	148,829	156,733	164,628	166,658	173,430	231,159	184,177	263,477
Key Species										
Clams	42,297	48,503	55,786	56,428	64,141	72,646	73,625	88,739	69,412	81,305
Crab	29,024	50,872	43,464	54,302	53,712	48,944	57,070	83,627	59,485	86,106
Hake (Whiting)	2,341	4,937	7,296	7,121	7,249	2,334	4,105	7,183	5,882	7,452
Halibut	7,264	6,512	8,303	8,842	7,525	4,879	5,764	6,740	6,122	4,936
Mussels	3,096	3,729	6,564	3,820	5,293	4,851	4,318	4,740	6,065	9,230
Oysters	31,257	33,697	38,302	37,437	34,794	34,993	30,370	43,021	37,576	75,646
Sablefish	6,517	7,395	8,307	6,608	7,312	8,796	9,402	12,378	7,578	4,833
Salmon	17,316	14,319	24,586	22,026	23,376	22,003	40,622	42,434	28,398	42,347
Shrimp	3,648	4,335	3,602	3,746	5,380	4,139	5,677	7,140	6,986	8,670
Tuna, albacore	15,657	10,643	15,176	10,439	17,225	16,390	14,575	22,253	28,440	24,692

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	192,181	213,502	241,606	194,449	173,176	163,937	189,486	210,282	213,578	272,613
Finfish & Other	155,224	156,902	191,717	151,762	128,208	120,452	142,608	158,113	173,506	205,489
Shellfish	36,957	56,600	49,889	42,687	44,968	43,485	46,878	52,169	40,072	67,124
Key Species										
Clams	3,319	3,621	4,617	3,363	4,070	4,266	3,876	4,023	3,664	3,971
Crab	14,955	32,086	24,619	22,487	21,355	20,651	22,500	27,072	16,590	27,879
Hake (Whiting)	69,117	93,654	120,058	91,272	67,159	36,378	58,900	73,494	38,524	58,696
Halibut	2,254	1,948	2,451	2,428	2,055	1,731	1,371	1,301	1,295	1,073
Mussels	427	504	774	475	593	568	589	547	559	731
Oysters	11,058	12,190	12,306	11,189	10,258	9,386	8,650	9,389	8,143	19,577
Sablefish	4,064	4,240	4,259	3,035	2,954	3,514	3,277	3,410	2,916	1,971
Salmon	27,918	17,926	26,570	21,938	17,641	31,821	28,086	38,706	19,839	49,018
Shrimp	6,599	7,279	6,926	4,455	7,355	7,775	10,153	10,193	10,009	14,277
Tuna, albacore	18,044	10,505	19,133	13,129	14,801	16,112	13,148	13,209	19,275	17,552

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Clams	12.74	13.40	12.08	16.78	15.76	17.03	19.00	22.06	18.95	20.47
Crab	1.94	1.59	1.77	2.41	2.52	2.37	2.54	3.09	3.59	3.09
Hake (Whiting)	0.03	0.05	0.06	0.08	0.11	0.06	0.07	0.10	0.15	0.13
Halibut	3.22	3.34	3.39	3.64	3.66	2.82	4.20	5.18	4.73	4.60
Mussels	7.26	7.40	8.48	8.05	8.93	8.54	7.33	8.66	10.85	12.62
Oysters	2.83	2.76	3.11	3.35	3.39	3.73	3.51	4.58	4.61	3.86
Sablefish	1.60	1.74	1.95	2.18	2.48	2.50	2.87	3.63	2.60	2.45
Salmon	0.62	0.80	0.93	1.00	1.33	0.69	1.45	1.10	1.43	0.86
Shrimp	0.55	0.60	0.52	0.84	0.73	0.53	0.56	0.70	0.70	0.61
Tuna, albacore	0.87	1.01	0.79	0.80	1.16	1.02	1.11	1.68	1.48	1.41

2013 Economic Impacts of Washington Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	224	29,122	12,882	18,630
	Private Boat	785	115,931	37,477	69,154
	Shore	203	26,646	8,990	15,927
Total Durable Expenditures		2,635	305,521	117,925	196,111
Total State Economic Impacts		3,847	477,220	177,274	299,822

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	3,130	14,184
Private Boat	2,619	89,463
Shore	711	20,900
Total	6,459	124,547

Equipment	Durable Goods Expenditures
Fishing Tackle	51,972
Other Equipment	23,280
Boat Expenses	160,402
Vehicle Expenses	21,542
Second Home Expenses	845
Total Durable Expenditures	258,041

Total State Trip and Durable Equipment Expenditures	389,047

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	213	201	184	220	167	163	162	274	176	189
Non-Coastal	24	23	21	23	19	20	19	30	24	26
Out-of-State	19	18	17	19	15	16	15	17	19	20
Total Anglers	256	242	222	262	201	199	196	321	219	235

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	64	62	57	55	42	51	47	42	46	52
Private	618	565	492	661	428	399	399	607	618	701
Shore	513	513	513	513	513	513	513	513	513	513
Total Trips	1,195	1,140	1,062	1,229	983	963	959	1,162	1,177	1,266

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Flatfishes	H	62	61	63	51	47	54	50	51	52	53
	R	41	41	42	40	40	47	41	41	41	42
Rockfishes[2]	H	256	307	282	260	216	245	208	235	259	275
	R	25	33	23	19	16	33	26	22	22	25
Greenlings	H	39	39	33	28	29	34	30	42	43	40
	R	25	25	22	19	19	39	22	29	23	16
Sculpins	H	17	17	16	15	15	16	16	17	16	16
	R	91	91	91	91	91	91	91	91	91	91
Sturgeon[3]	H	8	8	7	8	8	9	NA	NA	NA	NA
	R	25	30	21	18	12	17	NA	NA	NA	NA
Surfperches	H	133	133	133	133	133	133	133	133	134	134
	R	120	120	120	120	120	121	121	121	121	121
Albacore tuna	H	14	12	24	25	22	24	32	16	51	55
	R	0	0	(1)	0	0	0	(1)	(1)	(1)	17
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	1	0	1	1	(1)	(1)	(1)	(1)
	R	14	12	14	9	12	10	3	1	3	2
Salmon[3]	H	256	246	109	334	90	716	124	310	309	390
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.
[2] This species may not be equivalent to species with similar names listed in the commercial tables
[3] Data on sturgeon harvest not available for 2010-2013; Salmon harvest estimates exclude release mortality.

Washington's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	171,529 (2.3%)	2,268,913 (2%)	90.15 (2.1%)	147.79 (2.2%)	270.84 (2.2%)	13.75
2012	175,553 (2.4%)	2,361,697 (2%)	122.69 (2.3%)	204.32 (2.4%)	390.92 (2.4%)	12.51
% change	2.3	3.9	26.5	27.7	30.7	-9.9

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	53	54	53	63	44	47	39	37	42
	Receipts	4,446	5,568	4,149	4,698	5,167	5,022	4,228	3,859	4,377
Seafood sales, retail	Firms	30	31	29	32	33	42	30	34	42
	Receipts	2,202	1,836	1,727	1,458	1,807	2,462	1,273	2,370	1,871

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	101	98	96	98	96	86	93	90	90
	Employees	5,851	5,743	5,705	5,249	5,893	4,860	5,296	5,387	6,118
	Payroll	247,316	239,962	255,129	275,662	306,213	232,543	254,592	293,112	326,827
Seafood sales, wholesale	Establishments	116	126	115	127	107	108	105	107	101
	Employees	883	1,094	1,015	1,086	996	1,103	970	911	1,085
	Payroll	37,292	42,852	42,934	46,085	48,251	48,044	45,871	45,543	51,508
Seafood sales, retail	Establishments	40	47	49	50	44	43	47	44	40
	Employees	222	291	292	244	247	239	282	253	256
	Payroll	6,578	9,322	8,998	8,001	7,947	8,324	9,098	7,786	8,210

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	38	41	43	37	24	24	30	28	28
	Employees	2,039	1,672	2,353	1,903	2,222	2,245	1,731	1,684	1,557
	Payroll	128,786	122,000	145,144	136,543	168,832	168,783	130,398	132,068	126,401
Deep sea freight transportation	Establishments	23	24	23	30	21	25	20	14	12
	Employees	311	378	197	227	263	305	209	ds	ds
	Payroll	20,559	22,655	14,390	19,692	24,843	28,897	24,711	ds	14,014
Deep sea passenger transportation	Establishments	2	3	3	3	4	5	4	2	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	96	96	103	114	116	110	117	114	100
	Employees	449	442	466	485	573	570	560	517	479
	Payroll	12,763	13,556	14,269	15,623	18,931	18,811	18,783	18,364	18,038
Marine cargo handling	Establishments	30	30	29	28	25	27	26	32	13
	Employees	ds	4,459	3,764	4,913	4,821	2,953	ds	3,910	ds
	Payroll	ds	318,873	303,375	334,601	334,193	239,490	ds	323,286	ds
Navigational services to shipping	Establishments	53	53	56	61	76	69	79	78	72
	Employees	ds	841	942	950	1,213	1,168	1,225	1,207	ds
	Payroll	ds	60,034	72,120	72,912	100,542	102,934	102,766	94,781	ds
Port & harbor operations	Establishments	4	6	5	6	11	11	9	9	48
	Employees	ds	ds	53	129	111	118	74	75	1,509
	Payroll	ds	ds	3,436	4,631	6,359	6,437	4,662	4,937	85,042
Ship & boat building	Establishments	141	154	164	167	169	162	152	135	141
	Employees	6,474	7,154	7,669	7,742	8,067	6,710	5,406	5,232	5,294
	Payroll	272,336	307,735	313,230	354,084	402,253	312,240	284,759	276,402	290,400

[1] 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.
[2] ds = these data are suppressed.

Western Pacific Region

- Hawai’i

Hawai’i fish auction, tuna
(photo credit: NOAA Fisheries)

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 (NMFS) under five fishery ecosystem plans (FEPs), which 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, only information for the Hawai'i and Western Pacific Pelagics fisheries is reported here. There are no catch share programs in place in this Region.

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

Western Pacific Pelagics: The management species covered under this FEP include tunas, billfishes, sharks, squids and an assortment of other species (e.g., mahi-mahi, wahoo, moonfish, and pomfret). Of these species, bigeye tuna, Pacific bluefin tuna and the Western and Central North Pacific striped marlin stock are considered subject to overfishing. Pacific bluefin tuna and the Western and Central North Pacific striped marlin stock were added to the overfished list in 2013. The striped marlin stock was also added to the overfishing list in 2013; prior to 2013, its stock status was unknown.

In addition to management by the WPFMC and NMFS, pelagic fish such as bigeye and yellowfin tunas are also managed by two regional fishery management organizations (RFMOs). The Western and Central Pacific Fisheries Commission (WCPFC) have management 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 WCPFC and implemented by NMFS for the U.S. longline fleet in the western and central Pacific. The IATTC establishes the harvest limit for bigeye tuna for the U.S. longline vessels longer than 24 meters in the eastern tropical Pacific.

COMMERCIAL FISHERIES

Fishermen in Hawai'i earned $108 million from their commercial harvest in 2013, landing over 32 million pounds of finfish and shellfish. Tunas, a high-value species group, comprised 76% of the landings revenue and 64% percent of the landed weight.

Key Western Pacific Commercial Species

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

Economic Impacts[1]

In 2013, Hawai'i's seafood industry generated $751 million in sales impacts, $237 million in income impacts, $343 million in value added impacts, and approximately 10,000 full- and part-time jobs. The retail sector contributed the most to job impacts (4,111 jobs), income impacts ($90 million), and value added impacts ($117 million). Importers contributed the most to sales ($261 million). The commercial harvest sector generated 3,800 jobs, $187 million in sales, $68 million in income, and $98 million in value added impacts.

[1] 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).

Landings Revenue

In 2013, landings revenue for finfish and shellfish totaled $108 million, an 87% increase (a 38% increase in real terms) from total revenue earned in 2004. Landings trends for this time period (2004-2013) can only be understood in light of 1) the growth of the tuna fishery; and 2) the closure of the Hawai'i-based swordfish longline fishery in 2000 and its subsequent re-opening in 2004.

Hawai'i accounted for 56% of all tuna landings in the U.S. in 2013, earning $82 million for its catch. From 2004 to 2013, tuna revenue increased $43 million, more than doubling (112% increase, 56% in real terms). Bigeye tuna dominated Hawai'is landings revenue in 2013 at $66 million, an increase of $37 million from 2004. Bigeye tuna accounted for at least 50% of Hawai'is landings revenue each year from 2004 to 2013.

Extensive closure of fishing grounds to the Hawai'i-based swordfish longline fishery in 2000 due to concern about the high frequency of interactions with loggerhead and leatherback sea turtles resulted in Hawai'i swordfish landings revenue decreasing 95% from $12.8 million in 2000 to $1.3 million in 2001. When the fishery re-opened in 2004, swordfish landings revenue increased 534% from $1.2 million in 2004 to $7.8 million in 2005. Landings revenue ranged from $5.1 million to $7.7 million from 2006 to 2012 but declined 33% from 2012 to 2013. Nationally, Hawai'i accounted for 21% of U.S. swordfish landings revenue in 2013.

Landings

In 2013, Hawai'ian commercial fishermen landed 32 million pounds of finfish and shellfish, a 33% increase from 2004 landings totals and a 4% increase from 2012. Finfish and other catch accounted for nearly 100% of total 2013 landings. Tunas contributed more to the Western Pacific's total landings than any other species or group with 21 million pounds landed in 2013. The largest changes in landings between 2004 and 2013 were for swordfish (222% increase), moonfish (164% increase), and pomfret (49% increase). Species or species groups with notably large decreases in landings from 2004 to 2013 include snappers (-33 %), mahimahi (-32%), scad (-24%), and wahoo (-13%).

Commercial Fisheries Facts

Landings revenue

- Between 2004 and 2013, the annual landings revenue from the key species or species groups averaged $79 million, which accounted for 96% of total landings revenue generated in Hawai'i.
- Tunas contributed more than any other species or species group (70%), averaging $58 million in landings revenue from 2004 to 2013.

Landings

- Key species or species groups contributed an average of 94% annually to total landings between 2004 and 2013.
- Tunas contributed the most to landings in the region (60%), averaging 17 million pounds from 2004 to 2013.

Prices

- Lobsters had the highest average annual ex-vessel price per pound ($11.56) over the time period, followed by snappers ($4.92), and tunas ($3.32).
- Marlin had the lowest average annual ex-vessel price per pound ($1.35) over the time period, followed by moonfish ($1.68), and swordfish ($2.29).

Prices

Overall, the 2013 ex-vessel price for seven of the key species or species groups were above their ten year average annual price (four in real terms). Scad (61%), tunas (52%), and pomfret (31%) had the largest percentage increase in price from 2004 to 2013. Species or species groups with price declines from 2004 to 2013 included moonfish (-9%), swordfish (-3%), and lobster (-3%).

RECREATIONAL FISHERIES

Recreational anglers who fished in the state of Hawai'i took 1.5 million fishing trips in 2013. Of these trips, 80% were shore-based trips. Scads (bigeye and mackerel) was the most caught species group with 891,000 fish caught in 2013. Almost all of these fish were harvested by anglers rather than released. Note that data on angler participation in Hawai'i is unavailable from 2007-2013.

Key Western Pacific Recreational Species

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

Economic Impacts and Expenditures[2]

The contribution of recreational fishing activities in the Western 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 Hawai'i. Employment impacts totaled almost 1,100 jobs full- and part-time jobs generated by recreational fishing activities in the state.

In addition to employment impacts, the contribution of recreational fishing activities to the region's economy can be measured in terms of sales, income impacts, and the contribution of these activities to gross domestic product (value added impacts). In 2013, economic impacts in Hawai'i totaled $127 million in sales impacts, $44 million in income impacts, and $69 million in value added.

Overall, total fishing trip expenditures across the state of Hawai'i in 2013 were $104 million. Fishing trip-related expenditures by the Western Pacific Region's non-residents totaled nearly $24 million, of which the greatest portion can be attributed to for-hire fishing trips (over $23 million). Residents of Hawai'i spent $80 million on saltwater fishing trips, with the most of these expenses generated by shore-based trips ($49 million).

Note that these impacts include only recreational fishing trips. Durable equipment expenditures by recreational anglers were not available for Hawai'i for 2013.

Fishing Trips

Anglers who fished in Hawai'i took approximately 1.5 million fishing trips in 2013. This was a 47% decrease from the number of fishing trips taken in 2004 and a less than 1% decrease from 2012.

Harvest and Release

Scads (891,000), goatfishes (877,000), and skipjack tuna (380,000) were the most frequently caught by recreational fishermen in 2013. Almost 100% of blue marlin, scads, dolphinfish, goatfishes, skipjack tuna, wahoo, and yellowfin tuna caught were retained in 2013.

Recreational Fishing Facts

Fishing trips

- In the Western Pacific, an average of 2.2 million fishing trips were taken annually from 2004 to 2013.
- Shore-based fishing trips accounted for 80% 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 734,000 fish caught over the 10 year time period.
- All of the ten commonly caught key species or species groups were harvested more often than release over this time.

Between 2004 and 2013 two of Hawai'i's key species or groups, scads (up 398%) and goatfishes (up 20%), experienced increases in catch totals. Over the same time period, the largest decreases were experienced by wahoo (-63%), dolphinfish (-58%), and smallmouth bonefish (-54%). Between 2012 and 2013 the largest increases in catch occurred in goatfishes (410%), skipjack tuna (93%), and scads (47%). Decreases over the same time period occurred in dolphinfish (-42%), snappers (-23%), yellowfin tuna (-18%), and smallmouth bonefish (-9%).

MARINE ECONOMY[3]

Across the entire economy of Hawai'i, more than 492,000 full- and part-time employees were employed by over 31,000 establishments in 2012 and annual payroll totaled $19.1 billion in 2012. The number of workers, establishments, and annual payroll all increased less than 1% since 2004. Gross state product totaled $73 billion and employee compensation totaled $40 billion in 2012.[4]

The Commercial Fishing Location Quotient (CFLQ) provides a measure of the proportional size of this

[2] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).
[3] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[4] 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 (accessed September 15, 2014).

sector in a state's economy relative to the size of the commercial fishing sector in the national economy.[5] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average. Hawai'i's CFLQ was 4.13 in 2012. This suggests that the level of employment in commercial fishing-related industries in this Hawai'i is approximately 4.13 times higher than the level of employment in these industries nationwide.

For this report, the marine economy, a subset of the regional economy, is comprised of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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

In 2012, there were 14 nonemployer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging in Hawai'i. This represents a 27% increase in the number of firms since 2004 and no change from 2011. Annual receipts for these firms total $965,000, a 26% decrease from 2004 and an 11% increase from 2011. There were 2 employer establishments engaged in seafood product preparation and packaging in Hawai'i in 2012. This is down from 4 in 2004 and up from 1 in 2011. Data on annual receipts was suppressed by the Census Bureau.

There were 33 employer establishments in the wholesale seafood sales sector in 2012, an 8% decrease from 2004 and an 18% decrease from 2011. These firms employed 483 people, up 20% from 2004 and down 10% from 2011. Payroll was $19.4 million, up 39% from 2004 and down less than 1% from 2011.

There were 42 nonemployer firms engaged in seafood retail sales in Hawai'i in 2012. This represents a 27% increase in the number of firms since 2004 and an 8% increase from 2011. Annual receipts for these firms total $4.1 million, a 42% increase from 2004 and an 15% increase from 2011. There were 24 employer establishments engaged in seafood retail sales in Hawai'i in 2012. This was down 23% in 2004 and down from 25 in 2011. Seafood retailers employed 303 people, down 6% from 2004 and up 62% from 2011. Payroll was $6.5 million, up 29% from 2004 and up 84% from 2011.

Transport, Support, and Marine Operations

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

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

Tables | Hawai’i

2013 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	9,959	751,319	236,888	343,053	7,997	425,995	168,762	229,202
Commercial Harvesters	3,788	186,572	68,106	97,894	3,788	186,572	68,106	97,894
Seafood Processors & Dealers	579	50,072	19,821	25,563	439	37,852	14,984	19,325
Importers	948	260,675	41,778	79,465	0	0	0	0
Seafood Wholesalers & Distributors	533	49,720	17,438	23,198	332	31,019	10,879	14,473
Retail	4,111	204,281	89,745	116,933	3,438	170,551	74,793	97,510

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	57,680	71,040	66,124	75,752	85,130	71,248	84,242	91,886	112,405	107,918
Finfish & Other	57,275	70,676	66,017	75,578	84,762	71,059	84,070	91,708	112,086	107,326
Shellfish	406	364	106	174	367	189	172	178	318	592
Key Species										
Lobsters	91	111	61	93	120	141	117	115	98	95
Mahimahi (dolphin)	4,909	3,597	3,641	3,485	3,176	2,842	3,290	4,332	5,307	4,128
Marlin	2,472	2,512	2,558	2,029	2,072	2,142	1,766	2,378	2,886	2,798
Moonfish (opah)	1,343	1,897	1,873	2,173	2,198	2,409	2,599	2,852	3,162	3,202
Pomfret	1,316	1,440	1,311	1,463	1,665	1,378	1,560	1,449	2,096	2,578
Scad	943	839	1,020	1,099	899	1,210	1,303	1,058	1,215	1,148
Snappers	2,174	1,979	1,728	1,640	1,660	1,783	1,623	1,380	1,665	1,900
Swordfish	1,225	7,768	5,125	7,730	7,176	7,336	7,297	6,669	6,690	4,490
Tunas	38,485	46,071	44,086	51,181	60,894	47,740	59,910	66,709	83,325	81,751
Wahoo	2,201	2,253	2,329	2,087	2,226	1,668	1,748	1,824	2,344	2,376

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	24,457	28,139	25,660	28,954	30,683	26,929	28,141	29,419	31,085	32,453
Finfish & Other	24,426	28,112	25,645	28,932	30,654	26,906	28,119	29,398	31,040	32,392
Shellfish	31	26	15	22	29	22	22	22	45	61
Key Species										
Lobsters	8	10	6	8	10	12	9	9	8	9
Mahimahi (dolphin)	2,225	1,440	1,342	1,390	1,250	1,283	1,512	1,428	1,747	1,515
Marlin	1,844	2,190	2,389	1,376	1,952	1,679	1,225	1,829	1,459	1,935
Moonfish (opah)	786	1,086	1,071	1,228	1,314	1,886	1,830	1,564	1,549	2,072
Pomfret	766	646	576	594	672	627	597	428	731	1,143
Scad	478	398	443	463	321	409	473	354	389	361
Snappers	500	428	370	367	364	370	327	261	290	334
Swordfish	520	3,439	2,514	3,644	3,835	3,882	3,152	2,592	2,381	1,674
Tunas	14,966	16,117	14,631	17,598	18,306	14,605	16,755	18,576	20,166	20,899
Wahoo	852	818	891	715	850	604	601	569	655	745

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Lobsters	11.08	10.99	9.66	11.84	12.14	12.26	12.44	12.59	11.84	10.73
Mahimahi (dolphin)	2.21	2.50	2.71	2.51	2.54	2.21	2.18	3.03	3.04	2.72
Marlin	1.34	1.15	1.07	1.47	1.06	1.28	1.44	1.30	1.98	1.45
Moonfish (opah)	1.71	1.75	1.75	1.77	1.67	1.28	1.42	1.82	2.04	1.55
Pomfret	1.72	2.23	2.28	2.46	2.48	2.20	2.61	3.39	2.87	2.25
Scad	1.97	2.11	2.30	2.37	2.80	2.96	2.75	2.99	3.12	3.18
Snappers	4.35	4.62	4.67	4.47	4.57	4.82	4.97	5.29	5.74	5.70
Swordfish	2.36	2.26	2.04	2.12	1.87	1.89	2.32	2.57	2.81	2.68
Tunas	2.57	2.86	3.01	2.91	3.33	3.27	3.58	3.59	4.13	3.91
Wahoo	2.58	2.76	2.61	2.92	2.62	2.76	2.91	3.21	3.58	3.19

2013 Economic Impacts of Hawai'i Recreational Fishing Expenditures (thousands of dollars)[1]

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	325	38,699	16,560	24,422
	Private Boat	221	31,985	9,126	15,904
	Shore	525	56,499	18,113	29,060
Total Durable Expenditures		NA	NA	NA	NA
Total State Economic Impacts		1,071	127,183	43,799	69,386

2013 Angler Trip & Durable Expenditures (thousands of dollars)[1]

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	23,468	1,892
Private Boat	146	29,198
Shore	45	49,042
Total	23,660	80,131

Equipment	Durable Goods Expenditures
Fishing Tackle	NA
Other Equipment	NA
Boat Expenses	NA
Vehicle Expenses	NA
Second Home Expenses	NA
Total Durable Expenditures	NA

Total State Trip and Durable Equipment Expenditures	103,791

Recreational Anglers by Residential Area (thousands of anglers)[2, 3]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	223	204	173							
Non-Coastal	NA	NA	NA							
Out-of-State	183	166	224							
Total Anglers	407	370	396							

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Private	709	578	570	475	564	441	484	224	325	297
Shore	2,162	1,892	2,074	2,102	1,966	1,722	1,907	1,158	1,195	1,216
Total Trips	2,871	2,470	2,644	2,577	2,531	2,163	2,390	1,382	1,519	1,513

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[4]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue marlin	H	5	19	3	2	11	3	1	2	3	4
	R	(1)	(1)	(1)	1	(1)	(1)	(1)	(1)	(1)	(1)
Dolphinfish (mahimahi)	H	225	178	220	137	184	103	164	63	163	94
	R	(1)	1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Goatfishes[5]	H	712	446	813	299	469	713	269	173	159	873
	R	17	8	16	9	7	6	17	13	13	4
Jacks (trevallys and other jacks)[6]	H	329	253	210	169	275	122	141	99	111	143
	R	145	180	211	131	120	84	126	60	128	125
Scads (bigeye and mackerel)	H	179	726	811	1,089	402	1,102	841	662	608	889
	R	(1)	14	(1)	(1)	(1)	(1)	(1)	(1)	(1)	2
Skipjack tuna	H	419	302	201	228	568	230	288	125	197	380
	R	6	1	1	5	2	(1)	(1)	(1)	(1)	(1)
Smallmouth bonefish	H	61	25	64	19	50	36	55	13	27	23
	R	9	11	2	13	4	2	13	2	8	9
Snappers[7]	H	235	221	176	105	140	145	339	114	197	153
	R	18	57	35	40	7	24	25	14	15	10
Wahoo	H	97	54	62	57	78	61	40	16	31	36
	R	(1)	(1)	(1)	1	(1)	(1)	(1)	(1)	(1)	(1)
Yellowfin tuna	H	267	231	123	273	461	198	302	141	182	150
	R	(1)	10	1	2	(1)	1	1	(1)	(1)	(1)

[1] NA = not available.
[2] Participation (number of anglers) data are not available for 2007-2013.
[3] Data is not available because all Hawaii residents are considered coastal county residents.
[4] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.
[5] Goatfishes include yellowstripe, yellowfin, pfulgers, bandtail, doublebar, diespot, whitesaddle, manybar, blue, and 'Goastfish famil/genus'.
[6] 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.
[7] Snappers include bluestip, blacktail, ruby, longtailed, pink, VonSiebolds, Binghams, green jobfish, ironjaw, and smalltooth jobfish.

Hawai'i's State Economy (% of national total)[1,2]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[3]
2004	31,605 (0.4%)	473,500 (0.4%)	15.07 (0.4%)	30.09 (0.4%)	53.33 (0.4%)	ds
2012	31,496 (0.4%)	492,089 (0.4%)	19.08 (0.4%)	39.96 (0.5%)	72.51 (0.4%)	4.13
% change	-0.3	3.8	21	24.7	26.5	NA

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	11	5	11	10	9	7	11	14	14
	Receipts	1,309	409	1,011	1,023	1,020	712	741	866	965
Seafood sales, retail	Firms	33	29	31	41	37	35	37	39	42
	Receipts	2,875	3,487	3,627	4,353	4,394	3,666	4,124	3,558	4,086

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	4	3	3	1	1	1	1	1	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Seafood sales, wholesale	Establishments	36	32	33	36	37	38	37	40	33
	Employees	404	485	462	550	695	538	531	538	483
	Payroll	13,949	15,163	16,786	18,932	20,665	19,347	19,290	19,416	19,413
Seafood sales, retail	Establishments	31	29	27	25	25	25	24	25	24
	Employees	321	326	315	393	173	158	177	187	303
	Payroll	5,038	5,007	5,564	7,209	3,674	3,559	3,533	3,521	6,493

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[1,2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	11	13	13	11	5	5	2	2	5
	Employees	ds	ds	543	557	478	475	ds	ds	431
	Payroll	ds	ds	36,941	36,635	34,544	34,367	ds	ds	34,538
Deep sea freight transportation	Establishments	0	0	0	0	1	0	1	1	2
	Employees	NA	NA	NA	NA	ds	NA	ds	ds	ds
	Payroll	NA	NA	NA	NA	ds	NA	ds	ds	ds
Deep sea passenger transportation	Establishments	1	2	2	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	11	10	9	11	9	10	13	13	9
	Employees	178	181	152	167	156	164	189	208	162
	Payroll	3,439	3,354	3,719	4,151	4,317	4,368	5,362	5,237	3,779
Marine cargo handling	Establishments	8	8	7	8	11	11	14	14	11
	Employees	ds	694	ds	1,048	1,098	1,075	1,236	1,278	664
	Payroll	ds	53,061	ds	87,770	89,104	87,833	109,059	109,134	54,309
Navigational services to shipping	Establishments	6	6	6	8	11	11	11	8	8
	Employees	ds	ds	ds	ds	105	120	90	105	97
	Payroll	ds	ds	ds	3,340	5,846	5,258	5,113	5,310	5,567
Port & harbor operations	Establishments	2	2	2	2	4	3	2	2	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	3,218	2,031	ds	ds	ds
Ship & boat building	Establishments	17	16	14	13	14	13	15	15	18
	Employees	589	ds	545	ds	ds	ds	ds	ds	ds
	Payroll	20,908	ds	23,134	ds	ds	ds	ds	ds	ds

[1] NA = not applicable.
[2] ds = these data are suppressed.
[3] 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.

New England Region

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

Sea scallops ready for processing, Northeast U.S.
(photo credit: NOAA Fisheries)

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 (NMFS) 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 and the NEFMC is the lead for the Monkfish FMP.

New England Regional FMPs

1. Northeast multispecies
2. Sea scallops
3. Monkfish (with the MAFMC)
4. Atlantic herring
5. Small mesh multispecies
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 fishery management plans were listed as overfished in 2013: Atlantic cod (two stocks), Atlantic halibut, Atlantic salmon, Atlantic wolffish, ocean pout, thorny skate, windowpane flounder, winter flounder, witch flounder, and yellowtail flounder (two stocks). White hake was removed from the overfished list in 2013. Nine stocks or stock complexes are currently subject to overfishing: Atlantic cod (two stocks), haddock, windowpane, witch flounder, yellowtail flounder (two stocks), thorny skate, and winter skate. White hake was removed from the overfishing list and thorny skate and winter skate were added to this list in 2013.

In July 2013, the South Atlantic, Mid-Atlantic, and New England Fishery Management Councils signed a Memorandum of Understanding (MOU) to help coordinate the protection of deep sea corals off of the east coast of the United States from Maine to eastern Florida. The MOU will serve as a framework for cooperation during the development and implementation of management measures to protect deep sea corals. Rather than establish specific requirements for each council, the MOU identifies areas of consensus and strategies to promote more effective coordination of deep sea coral conservation efforts among the councils. In the New England Region, the NEFMC is considering the designation of "deep sea coral zones" where management measures would be applied to areas in the Gulf of Maine, canyon areas off Georges Bank and southern New England, and the four New England seamounts in the U.S. Exclusive Economic Zone.

Key events in 2014 included the implementation of emergency management measures for Gulf of Maine cod and Gulf of Maine haddock. The temporary cod measures included area closures, trip limits, and extended the length of a prohibition on recreational fishing for cod as well as other measures. These measures were intended to reduce harvest and protect spawning stock. These measures were deemed necessary following the 2014 stock assessment update that found Gulf of Maine cod to be severely depleted at just 3-4% of a sustainable abundance level. In contrast, the 2014 stock assessment of Gulf of Maine haddock found that the stock had improved since the last assessment and quota was increased. Subsequent management actions are planned for the 2015 fishing year.

There are two catch share programs in the New England Region: 1) Northeast Multispecies Sectors; and 2) Northeast General Category Atlantic Sea Scallop Individual Fishing Quota (IFQ) Program. Below is a brief description of these catch share programs and their performance.

Northeast Multispecies Sectors was first developed between 2004-2006 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% 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 relative to the Baseline period (the 3-year period prior to implementation), the 2012 annual catch limit, landings, the number of active vessels, and inflation-adjusted catch share species revenue decreased while inflation-adjusted revenue per active vessel increased during this period.

The Northeast General Category Atlantic Sea Scallop IFQ 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 2012 inflation-adjusted scallop revenue and revenue per active vessel had increased but scallop quota, landings and the number of active vessels had decreased relative to the Baseline period.

COMMERCIAL FISHERIES

In 2013, commercial fishermen in New England landed 636 million pounds of finfish and shellfish, earning almost $1.2 billion in landings revenue. American lobster ($457 million) and sea scallop ($366 million) dominated landings revenue. These species commanded average region-wide ex-vessel prices of $3.08 and $11.43 per pound, respectively. While comprising 71% of landings revenue, they were only 28% of New England landings.

Key New England Region Commercial Species

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

Economic Impacts[1]

In 2013, the New England Region's seafood industry generated $7.7 billion in sales impacts in Massachusetts, $1.9 billion in sales impacts in Maine, $1 billion in sales impacts in Rhode Island, $626 million in sales impacts in New Hampshire, and $469 million in sales impacts in Connecticut. Massachusetts generated the largest impacts across the three other impact categories, generating over 100,000 jobs, $2 billion in income, and $3.1 billion in value added impacts. The smallest impacts were generated in Connecticut (3,000 jobs, $99 million income, and $165 million in value added impacts).

The sector that generated the greatest employment impacts by state was the retail sector, which generated 61,000 jobs in Massachusetts and 15,000 jobs in Maine. The harvest sector generated 16,000 jobs in Maine. More sales impacts were generated by importers in Massachusetts than any other sector in any another state in the region at $4 billion. The greatest value added impacts were also generated by importers in Massachusetts ($1.2 billion).

Landings Revenue

Landings revenue in the New England Region totaled $1.2 billion in 2013. This was a 41% increase (a 4% increase in real terms) from 2004 levels and a 2% decrease relative to 2012. Landings revenue was highest in Massachusetts ($567 million) and lowest in Connecticut ($15 million).

Shellfish landings revenue totaled $957 million in 2013, a 53% increase (a 12% increase in real terms) from 2004 and a 1.1% increase relative to 2012. Shellfish landings revenue was greatest in Massachusetts ($472 million) and Maine ($402 million). Finfish landings revenue totaled $205 million, a 5% increase (a 23% decrease in real terms) from 2004 to 2013 and a 16% decrease relative to 2012. Finfish revenue was highest in Massachusetts ($95 million).

American lobster and sea scallop had the highest landings revenue in the New England Region in 2013, with $457 million and $366 million, respectively. Together they accounted for 71% of total landings revenue in 2013. Between 2004 and 2013, the landings revenue of American lobster increased 24% (a 9% decrease in real terms) while landings revenue of sea scallop increased 132% (a 70% increase in real terms). Landings revenue of sea scallop declined 6% relative to 2012 largely due to a 35% reduction in the catch limit that was implemented to protect young sea scallops and prevent localized overfishing.

Landings

Fishermen in the New England Region landed 636 million pounds of finfish and shellfish in 2013. This was a 12% decrease from 2004 and a 4% decrease from 2012. Finfish landings contributed 56% of total landings volume in the New England Region (359 million pounds) in 2013. From 2012 to 2013, finfish landings experienced a 6% decrease in volume. Shellfish landings experienced a 2% decrease from 2012. Atlantic herring had the highest annual landings (205 million pounds) in the New England Region in 2013.

[1] 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).

Commercial Fisheries Facts

Landings revenue

- On average, between 2004 to 2013, the key species or species groups accounted for 84% of total revenue, generating $1.1 billion annually in the New England Region.
- American lobster had higher landings revenues than any other species or species group, averaging $385 million in landings revenue from 2004 to 2013.

Landings

- Key species or species groups contributed an average of 72% annually to total landings between 2004 to 2013, with an annual average of 648 million pounds.
- Atlantic herring contributed the most to landings in the region, averaging 188 million pounds from 2004 to 2013.

Prices

- Sea scallop had the highest average annual ex-vessel price per pound 2004 to 2013:$7.92
- Atlantic herring had the lowest average annual ex-vessel price per pound 2004 to 2013:$0.18.

From 2004 to 2013 landings of lobster experienced a notably large increase of 68%. Species or species groups with large decreases in landings during this time period include Atlantic mackerel (-89%), quahog clam (-74%), cod and haddock (-73%), squid (-61%), goosefish (-64%), and flounders (-60%). Species or species groups with large decreases in landings between 2012 and 2013 include bluefin tuna (-43%), cod and haddock (-39%), and squid (-35%). Cod and haddock landing declines were driven by a 77% reduction in the Gulf of Maine cod quota from 2012 levels. Much of the reduction in 2013 squid landings was associated with illex squid, which experienced a 25% reduction in price during this period. Illex is a lower value species so the incentive to fish for illex is sensitive to fuel prices. In addition, the price is highly dependent upon international markets, which are driven by the Falkland Islands illex fishery.

Prices

The ex-vessel prices for New England's key species and species groups in 2013 were higher than their 10 year average for five of the key species (three of the species in real terms). Ex-vessel prices for sea scallops (120%, 62% in real terms) and quahog clam (120%, 61% in real terms) increased the most between 2004 and 2013. Relative to ex-vessel prices in 2012, the New England Region's sea scallop had the largest increase (15%).

RECREATIONAL FISHERIES

In 2013, 1.1 million recreational anglers took almost 6.3 million fishing trips in the New England Region. Over 91% of these anglers were residents of a regional coastal county. Of the total fishing trips taken, 55% were taken from a private or rental boat and another 37% were shore-based. Porgies (scup) was the most frequently caught species or species group with 6.9 million fish caught in 2013 and represented 30% of total fish caught in the region.

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[2]

The contribution of recreational fishing activities in the New England 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 Massachusetts were the highest in the region with over 6,900 full- and part-time jobs generated by recreational fishing activities in the state. New Hampshire had the lowest employment impacts at just over 650 jobs.

In addition to employment impacts, the contribution of recreational fishing activities to New England's economy can be measured in terms of sales, income impacts, and the contribution of these activities to gross domestic product (value added impacts). In 2013, sales, income, and value added impacts were the highest in Massachusetts with $755 million in sales impacts, $350 million in income impacts, and $507 million in value added. These impacts were lowest in New Hampshire.

[2] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).

Overall, total fishing trip and durable equipment expenditures across New England in 2013 were $1.3 billion. Approximately 73% of these expenditures were related to durable equipment purchases. The greatest expenditures were for boat expenses ($484 million), followed by fishing tackle ($266 million), and vehicle expenses ($122 million).

Fishing trip-related expenditures by New England's non-residents totaled over $148 million of which the greatest portion can be attributed to for-hire-based fishing trips ($74 million). Residents of New England spent $201 million on saltwater fishing trips, with most of these expenses related to private boat trips ($120 million).

Participation

There were 1.1 million recreational anglers who fished in New England in 2013. This was a 13% decrease from 2004 and a 13% decrease from 2012. About 91% of these anglers were New England residents of a coastal county.

Recreational Fishing Facts

Participation
- An average of 1.4 million anglers fished in the New England Region annually from 2004 to 2013.
- Coastal county residents made up 89% of total anglers in this region from 2004 to 2013.

Fishing trips
- In the New England Region, an average of 7.8 million fishing trips were taken annually from 2004 to 2013.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 4.1 million and 3.3 million fishing trips, respectively, from 2004 to 2013.

Harvest and release
- Striped bass was the most commonly caught key species or species group, averaging 6.8 million fish per year from 2004 to 2013, followed by porgies (scups) with 5.6 million fish.

Fishing Trips

Recreational fishermen took 6.3 million fishing trips in the New England Region in 2013. This was a 27% decrease from 2004 (8.6 million trips) and was a 2% increase from 2012. Of the total trips taken in the New England Region in 2013, approximately 55% of the trips were private or rental boat based (3.5 million trips). The other most popular mode of fishing was shore based with 2.3 million trips in 2013.

Harvest and Release

The New England Region's species and species groups caught most frequently in 2013 were scup (6.9 million fish), striped bass (4.5 million fish), Atlantic mackerel (4 million fish), and bluefish (3.6 million fish).

MARINE ECONOMY[3]

Across all sectors of the economy in Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island nearly 5.9 million full- and part-time employees were employed by about 365,000 establishments in 2012. Annual payroll totaled $318 billion. Total employee compensation in the New England region totaled $476 billion and the combined gross state product of all states totaled about $846 billion.[4]

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.[5] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

Commercial fishing location quotient (CFLQ) values were available for only 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. Maine had a CFLQ of 17.38 and Connecticut had a CFLQ of 3.51 in 2012. This suggests that the level of employment in commercial fishing-related industries in Maine and Connecticut are 17 times higher and 4 times higher, respectively, than the level of employment in these industries nationwide.

For this report, the marine economy, a subset of the regional economy, is comprised of two industry

[3] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[4] 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 (accessed September 15, 2014).
[5] U.S. Bureau of Labor Statistics, "Location Quotient Calculator," http://data.bls.gov/location_quotient/ (accessed September 15, 2014).

sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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

In 2012, there were 106 nonemployer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging across New England. This was a 14 % increase from 2004. Maine (51) and Massachusetts (25) had the most establishments in this sector. Region-wide, these firms had receipts totaling $8.5 million in 2012. The number of employer establishments in this sector decreased 21% from 2004 to 2012 to 80. The majority of these opeations were located in Massachusetts (39) and Maine (29). In 2012, payroll in this sector totalled $98.7 million with employment of 2,359 in Maine, Massachusetts and New Hampshire (due to confidentiality restrictions, this information is not available for Connecticut and Rhode Island).

There were 332 seafood wholesale establishments in the New England region in 2012, a decrease of 15% from 2004. The majority of these firms were located in Massachusetts (140) or Maine (136). The number of employees in the seafood wholesale sector decreased by less than 1% from 2004 to 2012 to 3,452 employees. Payroll in this sector was $169 million in 2012. Nonemployer firms engaged in seafood retail sales in the New England region totaled 164 in 2012, a 5% decrease from 2004 levels. Massachusetts (65) and Maine (46) had the largest number of firms in this sector. Region-wide, there were 232 employer establishments in the seafood retail sales sector in 2012, a decrease of 11% from 2004. Most of these firms were located in Massachusetts (114) and Maine (48). There 2343 1,183 employees in this sector and payroll was $32 million in 2012.

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 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, 480 establishments were classified as marinas over all five states, employing 3,217 workers that were paid $154 million in 2012.

Tables | New England Region

2013 Economic Impacts of the New England Seafood Industry (thousands of dollars)

		With Imports				Without Imports			
	Landings Revenue	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Connecticut	14,632	2,991	469,190	98,969	164,639	881	51,314	17,588	24,520
Maine	473,888	35,306	1,914,481	635,418	917,777	33,922	1,712,481	592,003	846,442
Massachusetts	566,858	100,108	7,706,079	2,021,479	3,073,305	64,279	2,365,086	874,479	1,190,413
New Hampshire	20,190	5,004	626,123	149,086	235,843	1,759	96,524	35,719	48,846
Rhode Island	86,419	9,560	980,903	250,218	389,023	5,439	304,170	111,135	155,119

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	821,573	970,516	1,132,841	895,381	808,816	787,206	960,142	1,102,427	1,191,386	1,161,986
Finfish & Other	194,911	200,751	329,541	178,614	190,211	176,889	190,179	211,846	244,160	204,563
Shellfish	626,662	769,765	803,300	716,768	618,605	610,317	769,963	890,581	947,227	957,424
Key Species										
American lobster	368,649	408,719	395,289	359,783	317,909	305,195	397,826	418,107	424,022	456,952
Atlantic herring	14,931	20,085	163,420	18,770	20,507	24,459	20,654	24,312	28,614	31,429
Atlantic mackerel	10,416	2,923	14,491	6,000	5,265	7,892	3,459	268	3,474	1,888
Bluefin tuna	4,297	3,864	1,715	2,077	2,993	4,448	8,470	9,258	8,394	3,649
Cod & haddock	40,089	39,824	31,856	39,326	47,166	38,745	49,710	48,777	29,968	16,394
Flounders	43,737	42,339	37,757	33,650	30,501	27,282	27,683	30,848	36,301	32,070
Goosefish	27,960	34,408	26,603	21,209	19,945	14,321	14,064	19,792	19,652	13,586
Quahog clam	16,721	6,707	28,356	30,026	8,901	9,002	9,713	8,316	9,276	9,379
Sea scallop	158,014	250,762	264,226	237,299	203,124	209,168	265,531	352,647	389,321	366,369
Squid	27,736	26,235	25,869	17,431	19,850	16,697	14,789	22,888	24,138	16,686

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	723,130	684,292	748,637	584,849	602,950	648,988	579,965	610,128	664,251	635,888
Finfish & Other	487,785	461,038	496,743	371,353	396,942	422,726	334,444	354,967	380,747	358,989
Shellfish	235,345	223,254	251,894	213,496	206,009	226,263	245,521	255,162	283,504	276,899
Key Species										
American lobster	88,679	86,224	94,347	79,435	86,229	99,199	116,037	125,140	148,277	148,566
Atlantic herring	188,201	212,389	240,626	158,077	167,709	210,786	140,589	171,855	189,299	204,739
Atlantic mackerel	88,124	8,223	99,752	50,760	38,359	39,398	16,904	883	9,650	9,590
Bluefin tuna	704	837	274	300	447	772	1,201	1,085	915	523
Cod & haddock	34,158	30,500	19,785	24,856	33,122	32,470	39,261	30,109	14,822	9,075
Flounders	40,966	30,290	19,530	16,089	15,411	16,229	14,528	17,910	19,502	16,302
Goosefish	39,735	34,873	26,146	19,968	17,757	14,256	12,378	14,700	16,372	14,330
Quahog clam	6,231	1,088	6,195	4,630	1,468	1,628	1,790	1,513	1,570	1,593
Sea scallop	30,462	32,038	41,229	35,390	28,867	31,604	32,888	35,287	39,189	32,050
Squid	47,473	43,117	43,681	26,089	28,617	28,015	21,722	27,908	27,995	18,242

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.16	4.74	4.19	4.53	3.69	3.08	3.43	3.34	2.86	3.08
Atlantic herring	0.08	0.09	0.68	0.12	0.12	0.12	0.15	0.14	0.15	0.15
Atlantic mackerel	0.12	0.36	0.15	0.12	0.14	0.20	0.20	0.30	0.36	0.20
Bluefin tuna	6.10	4.62	6.26	6.93	6.69	5.76	7.05	8.54	9.18	6.98
Cod & haddock	1.17	1.31	1.61	1.58	1.42	1.19	1.27	1.62	2.02	1.81
Flounders	1.07	1.40	1.93	2.09	1.98	1.68	1.91	1.72	1.86	1.97
Goosefish	0.70	0.99	1.02	1.06	1.12	1.00	1.14	1.35	1.20	0.95
Quahog clam	2.68	6.16	4.58	6.49	6.06	5.53	5.43	5.50	5.91	5.89
Sea scallop	5.19	7.83	6.41	6.71	7.04	6.62	8.07	9.99	9.93	11.43
Squid	0.58	0.61	0.59	0.67	0.69	0.60	0.68	0.82	0.86	0.91

2013 Economic Impacts of the New England Recreational Fishing Expenditures (thousands of dollars)

	Trips	Jobs	Sales	Income	Value Added
Maine	596	1,364	128,228	50,288	77,145
New Hampshire	313	666	62,809	29,570	41,166
Massachusetts	2,939	6,923	755,484	349,514	507,160
Rhode Island	1,229	2,520	226,102	102,115	155,398
Connecticut	1,210	703	87,190	36,869	62,557

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	73,608	37,500
Private Boat	36,397	120,394
Shore	38,717	43,033
Total	148,721	200,927

Equipment	Durable Goods Expenditures
Fishing Tackle	265,861
Other Equipment	54,616
Boat Expenses	483,554
Vehicle Expenses	121,660
Second Home Expenses	2,110
Total Durable Expenditures	927,801

Total State Trip and Durable Equipment Expenditures	1,277,449

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	1,155	1,349	1,408	1,408	1,389	1,222	1,317	1,156	1,171	1,043
Non-Coastal	165	169	188	205	187	165	169	131	144	100
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	1,319	1,518	1,596	1,614	1,576	1,387	1,486	1,288	1,316	1,143

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

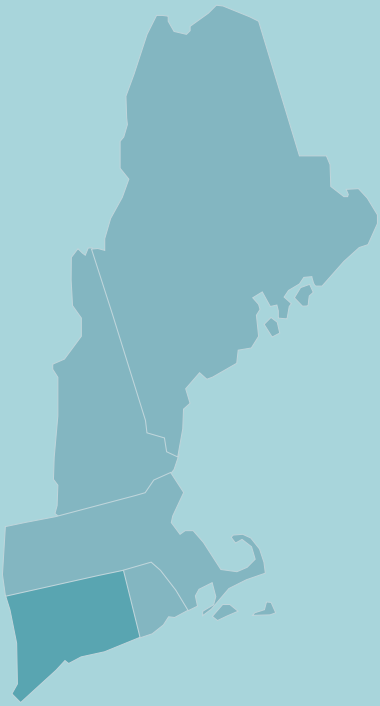
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	333	419	457	518	512	464	321	367	345	516
Private	4,370	5,059	4,651	4,820	4,894	3,374	3,967	3,161	3,132	3,459
Shore	3,935	3,719	4,106	3,951	3,735	3,321	2,926	2,532	2,687	2,313
Total Trips	8,638	9,197	9,213	9,289	9,141	7,160	7,213	6,060	6,164	6,287

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic cod	H	421	485	203	305	384	390	509	532	336	392
	R	775	1,108	722	964	954	833	1,071	915	471	641
Atlantic mackerel	H	1,576	2,940	4,180	1,885	3,357	2,463	3,472	5,336	3,277	3,707
	R	174	62	559	116	453	344	381	536	484	279
Bluefin tuna	H	1	12	3	11	9	8	1	2	10	(1)
	R	4	8	7	10	1	5	(1)	5	4	(1)
Bluefish	H	1,232	1,200	1,647	1,513	1,460	673	1,184	658	1,502	1,685
	R	3,125	3,013	3,639	2,906	2,995	1,436	1,846	1,931	1,950	1,957
Little tunny	H	9	(1)	1	5	(1)	1	2	(1)	10	1
	R	85	55	26	65	16	17	20	44	103	14
Porgies (scup)	H	5,202	1,595	1,426	3,048	1,944	1,498	2,411	2,287	2,952	3,790
	R	2,542	2,194	2,638	2,802	4,048	3,277	3,586	2,376	3,530	3,084
Striped bass	H	689	700	593	597	602	548	527	458	531	701
	R	7,253	9,943	14,094	8,367	7,714	4,164	2,769	2,040	1,780	3,801
Summer flounder	H	690	589	642	426	584	167	198	267	242	429
	R	896	1,419	2,850	1,044	2,112	908	818	1,252	937	1,457
Winter flounder	H	57	43	50	52	180	113	104	100	55	43
	R	36	42	46	44	70	102	86	60	28	24
Wrasses (tautog)	H	163	269	362	569	304	197	358	79	323	291
	R	366	594	638	1,426	515	396	562	384	909	935

[1] 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.
[2] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Tables | Connecticut



2013 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	2,991	469,190	98,969	164,639	881	51,314	17,588	24,520
Commercial Harvesters	440	25,745	7,061	10,880	440	25,745	7,061	10,880
Seafood Processors & Dealers	125	12,790	4,884	6,314	55	5,573	2,128	2,751
Importers	1,288	354,300	56,783	108,006	0	0	0	0
Seafood Wholesalers & Distributors	191	30,141	9,866	13,256	17	2,707	886	1,190
Retail	948	46,214	20,373	26,184	370	17,290	7,512	9,699

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	33,399	37,570	36,892	42,053	17,206	15,007	17,626	19,662	20,608	14,632
Finfish & Other	4,575	5,097	3,732	3,421	3,987	3,172	5,284	4,654	5,194	5,172
Shellfish	28,825	32,474	33,161	38,632	13,219	11,835	12,342	15,008	15,414	9,460
Key Species										
American lobster	3,166	3,821	4,031	3,222	2,102	1,763	1,894	782	1,026	577
Eastern oyster	1,356	NA	2,206	5,142	NA	NA	NA	NA	NA	NA
Flounders	1,075	1,170	1,027	881	802	736	892	1,038	1,003	1,086
Goosefish	580	658	346	512	551	591	564	976	1,000	1,022
Hake	2,028	2,432	1,628	1,232	1,619	1,149	1,417	1,705	1,460	1,416
Quahog clam	10,690	NA	18,135	20,531	NA	NA	NA	NA	NA	NA
Scups or Porgies	191	263	302	311	383	196	272	407	833	705
Sea scallop	11,203	9,761	7,229	8,605	10,032	8,952	9,458	13,007	11,996	7,219
Snails (conchs)	209	233	533	312	35	NA	NA	NA	NA	NA
Squid, loligo	1,298	1,224	954	744	546	260	473	694	1,713	1,257

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	18,192	13,628	11,750	10,050	7,131	6,568	6,698	7,090	8,673	7,957
Finfish & Other	6,832	6,548	5,807	3,931	4,552	4,248	4,485	5,010	5,705	5,926
Shellfish	11,359	7,080	5,943	6,119	2,578	2,320	2,213	2,081	2,968	2,030
Key Species										
American lobster	647	714	793	569	426	412	442	159	241	127
Eastern oyster	186	NA	77	193	NA	NA	NA	NA	NA	NA
Flounders	637	582	458	345	283	308	334	429	356	426
Goosefish	897	524	496	460	424	546	358	630	716	967
Hake	2,936	3,735	2,632	1,839	2,465	2,194	2,151	2,199	2,011	1,821
Quahog clam	5,137	NA	2,665	3,067	NA	NA	NA	NA	NA	NA
Scups or Porgies	256	328	298	256	282	204	324	644	905	1,195
Sea scallop	2,172	1,272	1,104	1,313	1,407	1,386	1,260	1,318	1,230	640
Snails (conchs)	31	50	101	117	47	NA	NA	NA	NA	NA
Squid, loligo	1,699	1,537	1,157	811	523	256	366	498	1,376	1,098

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.89	5.35	5.08	5.67	4.93	4.27	4.29	4.91	4.25	4.53
Eastern oyster	7.30	NA	28.61	26.64	NA	NA	NA	NA	NA	NA
Flounders	1.69	2.01	2.25	2.55	2.84	2.39	2.67	2.42	2.82	2.55
Goosefish	0.65	1.26	0.70	1.11	1.30	1.08	1.58	1.55	1.40	1.06
Hake	0.69	0.65	0.62	0.67	0.66	0.52	0.66	0.78	0.73	0.78
Quahog clam	2.08	NA	6.80	6.69	NA	NA	NA	NA	NA	NA
Scups or Porgies	0.75	0.80	1.01	1.22	1.36	0.96	0.84	0.63	0.92	0.59
Sea scallop	5.16	7.67	6.55	6.55	7.13	6.46	7.51	9.87	9.75	11.29
Snails (conchs)	6.69	4.66	5.28	2.66	0.75	NA	NA	NA	NA	NA
Squid, loligo	0.76	0.80	0.82	0.92	1.04	1.01	1.29	1.39	1.25	1.15

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Connecticut Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	185	17,847	7,854	10,323
	Private Boat	192	22,132	9,797	15,537
	Shore	50	4,477	1,992	3,041
Total Durable Expenditures		276	42,734	17,226	33,656
Total State Economic Impacts		703	87,190	36,869	62,557

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	1,085	8,908
Private Boat	3,052	20,669
Shore	122	4,027
Total	4,259	33,604

Equipment	Durable Goods Expenditures
Fishing Tackle	7,825
Other Equipment	1,517
Boat Expenses	34,942
Vehicle Expenses	0
Second Home Expenses	0
Total Durable Expenditures	44,284

Total State Trip and Durable Equipment Expenditures	82,147

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	297	323	336	302	381	438	402	420	397	198
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	63	77	44	61	123	93	112	98	67	43
Total Anglers	359	400	380	363	504	531	514	518	464	240

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	31	35	49	63	74	43	41	46	27	63
Private	956	1,174	868	1,097	1,292	711	871	863	825	830
Shore	573	485	571	559	609	665	614	399	475	316
Total Trips	1,560	1,693	1,488	1,719	1,975	1,419	1,526	1,309	1,326	1,210

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic cod	H	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1	(1)
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Bluefish	H	589	247	507	451	623	262	591	307	480	894
	R	979	576	1,167	888	1,144	295	715	997	679	726
Hickory shad	H	12	54	63	35	(1)	(1)	1	16	39	8
	R	21	32	144	4	5	(1)	(1)	(1)	(1)	1
Little tunny	H	(1)	(1)	(1)	(1)	(1)	(1)	1	(1)	(1)	(1)
	R	3	(1)	(1)	1	(1)	9	8	14	57	(1)
Porgies (scup)	H	1,072	508	532	925	549	289	1,088	933	868	930
	R	538	753	740	1,006	974	1,204	1,192	539	1,049	1,212
Striped bass	H	103	141	115	119	108	61	93	63	65	143
	R	827	1,762	987	985	3,105	1,161	671	612	265	778
Summer flounder	H	216	157	138	112	146	45	35	47	63	270
	R	270	779	1,111	297	991	428	373	345	306	867
White perch	H	(1)	(1)	(1)	(1)	7	60	(1)	(1)	10	(1)
	R	10	(1)	15	18	52	72	(1)	(1)	48	2
Winter flounder	H	3	4	(1)	(1)	(1)	12	14	19	9	(1)
	R	14	(1)	21	15	(1)	7	12	(1)	7	4
Wrasses (tautog)	H	16	36	201	353	167	86	116	26	194	105
	R	77	149	108	745	250	112	257	36	599	455

[1] 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.
[2] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Connecticut's State Economy (% of national total)[1,2]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[3]
2004	93,011 (1.3%)	1,537,461 (1.3%)	72.85 (1.7%)	106.40 (1.6%)	199.39 (1.6%)	ds
2012	88,210 (1.2%)	1,463,732 (1.3%)	84.56 (1.6%)	128.21 (1.5%)	242.93 (1.5%)	ds
% change	-5.4	-5	13.9	17	17.9	NA

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)[1,2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	7	7	11	ds	18	17	17	14	13
	Receipts	1,404	551	3,206	ds	2,375	2,550	1,518	1,066	882
Seafood sales, retail	Firms	25	24	15	26	25	23	25	21	21
	Receipts	3,115	3,313	2,915	4,436	3,247	2,142	2,473	2,165	1,388

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[1,2]

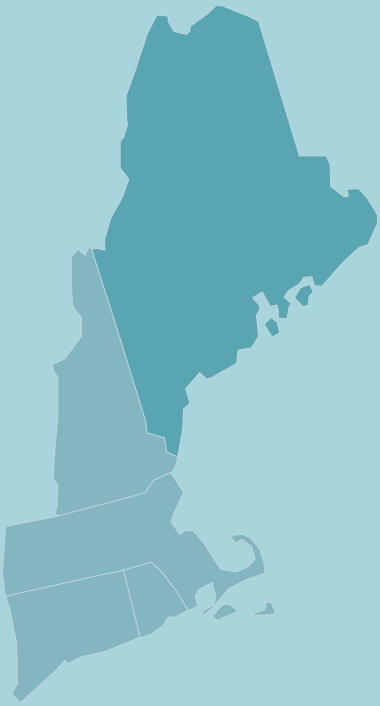
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	3	3	4	3	3	2	2	2	1
	Employees	ds	113	119	ds	59	ds	ds	ds	ds
	Payroll	ds	3,656	4,242	ds	1,040	ds	ds	ds	ds
Seafood sales, wholesale	Establishments	19	17	19	20	24	25	23	24	16
	Employees	181	ds	ds	183	185	212	216	212	187
	Payroll	7,688	ds	ds	8,347	8,551	8,842	9,219	9,224	8,237
Seafood sales, retail	Establishments	38	39	35	36	35	36	39	37	37
	Employees	202	187	196	177	203	205	204	171	233
	Payroll	5,060	5,028	4,937	5,252	5,248	5,551	5,563	4,824	6,349

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[1,2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	5	5	4	4	5	5	6	5	10
	Employees	ds	ds	ds	ds	ds	ds	ds	95	256
	Payroll	ds	ds	ds	ds	ds	ds	8,148	7,856	32,789
Deep sea freight transportation	Establishments	13	11	14	14	12	12	10	11	14
	Employees	260	310	235	228	243	222	225	225	297
	Payroll	37,013	36,766	47,845	48,110	46,595	45,045	29,407	41,302	37,711
Deep sea passenger transportation	Establishments	2	2	1	2	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	117	117	119	124	125	126	129	128	130
	Employees	1,016	994	1,024	1,224	1,352	1,261	1,284	1,283	1,257
	Payroll	41,952	42,754	44,829	50,809	60,016	58,065	58,877	59,851	60,803
Marine cargo handling	Establishments	1	3	3	5	4	3	3	3	0
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	NA
	Payroll	ds	ds	ds	5,925	ds	ds	ds	ds	NA
Navigational services to shipping	Establishments	6	8	9	6	6	6	6	5	2
	Employees	ds	45	69	ds	ds	5	ds	5	ds
	Payroll	ds	1,768	2,423	432	338	696	242	898	ds
Port & harbor operations	Establishments	4	4	4	4	8	8	6	5	4
	Employees	ds	ds	ds	ds	179	166	122	34	ds
	Payroll	ds	ds	ds	ds	6,136	5,787	2,162	848	1,414
Ship & boat building	Establishments	17	17	17	22	15	13	12	11	8
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds

[1] ds = these data are suppressed.
[2] NA = not applicable.
[3] 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.

Tables | Maine



2013 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	35,306	1,914,481	635,418	917,777	33,922	1,712,481	592,003	846,442
Commercial Harvesters	15,971	905,177	247,981	405,236	15,971	905,177	247,981	405,236
Seafood Processors & Dealers	2,646	182,559	73,295	93,655	2,430	167,520	67,257	85,940
Importers	572	157,214	25,197	47,926	0	0	0	0
Seafood Wholesalers & Distributors	1,083	101,997	36,588	47,610	955	89,871	32,238	41,949
Retail	15,034	567,535	252,357	323,350	14,566	549,913	244,527	313,318

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	367,459	392,122	391,293	344,022	308,233	292,315	380,416	412,143	448,568	473,888
Finfish & Other	48,904	47,141	38,552	36,833	36,695	30,367	30,177	43,816	76,768	72,059
Shellfish	318,555	344,982	352,742	307,189	271,538	261,948	350,239	368,327	371,800	401,828
Key Species										
American lobster	289,079	317,948	305,443	280,634	245,146	237,519	318,303	334,850	340,487	368,382
Atlantic herring	76	56	10,729	9,173	8,396	7,867	8,643	14,404	14,575	15,446
Bloodworms	7,524	6,039	5,177	6,051	5,913	6,196	5,874	5,847	4,902	5,643
Blue mussel	3,319	2,625	2,716	1,934	1,627	2,203	2,071	1,969	1,922	2,341
Cod & haddock	5,392	5,177	3,982	3,728	5,257	1,752	1,528	1,666	1,360	987
Goosefish	6,828	6,232	3,238	2,402	1,478	526	393	578	1,059	773
Ocean quahog clam	3,842	3,607	3,919	3,194	2,195	1,821	1,721	2,117	1,737	1,378
Pollock	2,346	3,106	2,309	2,160	2,321	2,047	1,503	1,929	2,521	2,560
Sea Urchins	7,866	5,142	4,741	4,367	5,410	5,866	5,490	5,113	5,024	5,421
Softshell clam	16,628	14,081	26,940	12,574	12,826	11,686	12,960	15,749	15,644	18,021

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	228,502	214,514	216,657	186,324	186,696	188,388	200,874	249,484	262,589	265,068
Finfish & Other	130,368	121,278	117,637	93,742	94,641	82,505	79,373	122,944	121,104	118,799
Shellfish	98,134	93,236	99,020	92,582	92,056	105,883	121,500	126,540	141,484	146,269
Key Species										
American lobster	71,574	68,730	75,346	63,959	69,863	81,179	96,246	104,921	126,648	127,205
Atlantic herring	911	558	97,843	74,817	67,731	64,606	57,557	97,116	93,139	98,398
Bloodworms	615	456	462	549	537	574	533	526	432	470
Blue mussel	4,102	3,357	3,435	2,643	2,289	2,760	2,582	2,810	2,399	2,282
Cod & haddock	4,588	4,045	2,448	2,345	2,455	1,401	876	842	549	421
Goosefish	10,552	7,130	3,669	2,376	1,178	603	404	533	1,075	874
Ocean quahog clam	1,013	1,001	1,214	1,011	669	556	549	645	698	557
Pollock	4,189	5,260	3,678	4,245	4,064	3,040	1,640	2,325	2,659	2,225
Sea Urchins	5,742	3,517	3,372	2,761	2,900	3,487	2,592	2,407	1,904	1,851
Softshell clam	2,380	1,857	3,918	1,948	1,998	1,902	2,077	2,355	2,257	2,288

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.04	4.63	4.05	4.39	3.51	2.93	3.31	3.19	2.69	2.90
Atlantic herring	0.08	0.10	0.11	0.12	0.12	0.12	0.15	0.15	0.16	0.16
Bloodworms	12.24	13.24	11.20	11.02	11.01	10.79	11.03	11.12	11.35	12.00
Blue mussel	0.81	0.78	0.79	0.73	0.71	0.80	0.80	0.70	0.80	1.03
Cod & haddock	1.18	1.28	1.63	1.59	2.14	1.25	1.74	1.98	2.48	2.35
Goosefish	0.65	0.87	0.88	1.01	1.25	0.87	0.97	1.09	0.99	0.88
Ocean quahog clam	3.79	3.60	3.23	3.16	3.28	3.27	3.13	3.28	2.49	2.47
Pollock	0.56	0.59	0.63	0.51	0.57	0.67	0.92	0.83	0.95	1.15
Sea Urchins	1.37	1.46	1.41	1.58	1.87	1.68	2.12	2.12	2.64	2.93
Softshell clam	6.99	7.58	6.88	6.46	6.42	6.14	6.24	6.69	6.93	7.88

2013 Economic Impacts of Maine Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	146	12,633	5,073	7,037
	Private Boat	83	7,701	2,887	4,711
	Shore	142	12,409	4,372	7,136
Total Durable Expenditures		993	95,485	37,956	58,261
Total State Economic Impacts		1,364	128,228	50,288	77,145

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	7,662	520
Private Boat	2,814	5,117
Shore	8,268	1,534
Total	18,743	7,171

Equipment	Durable Goods Expenditures
Fishing Tackle	22,114
Other Equipment	5,449
Boat Expenses	63,849
Vehicle Expenses	0
Second Home Expenses	50
Total Durable Expenditures	91,461

Total State Trip and Durable Equipment Expenditures	117,375

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	113	190	182	174	121	117	122	85	116	102
Non-Coastal	21	20	22	13	9	12	9	7	6	4
Out-of-State	148	173	285	260	180	324	159	107	126	129
Total Anglers	282	383	489	447	310	453	290	198	248	235

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	19	40	32	33	26	26	23	22	20	29
Private	337	519	548	460	408	334	327	265	212	313
Shore	421	524	497	531	421	544	366	240	405	254
Total Trips	778	1,083	1,076	1,024	854	904	716	527	637	596

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American Shad	H	(1)	(1)	1	(1)	(1)	1	(1)	(1)	(1)	(1)
	R	2	(1)	7	4	5	18	9	5	18	1
Atlantic cod	H	5	29	14	19	41	45	15	40	26	61
	R	19	35	49	72	50	36	45	100	80	75
Atlantic mackerel	H	1,023	607	450	806	837	1,110	1,093	1,544	1,028	704
	R	87	29	104	80	265	194	178	304	163	59
Blue shark	H	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	R	(1)	(1)	(1)	(1)	(1)	1	(1)	9	2	13
Bluefin tuna	H	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Bluefish	H	16	38	8	50	30	3	14	(1)	4	19
	R	42	49	50	74	55	26	9	8	126	22
Haddock	H	4	6	9	12	20	10	4	12	4	6
	R	2	2	4	11	2	1	4	4	8	46
Pollock	H	59	28	67	51	67	62	58	57	50	140
	R	56	32	23	24	135	34	105	135	89	296
Striped bass	H	48	83	75	53	59	62	18	18	11	23
	R	694	2,985	4,001	1,116	465	264	193	143	214	423
Winter flounder	H	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	R	(1)	(1)	1	(1)	1	5	(1)	(1)	(1)	1

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Maine's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	41,269 (0.6%)	494,256 (0.4%)	15.44 (0.4%)	25.92 (0.4%)	44.91 (0.4%)	10.04
2012	40,120 (0.5%)	486,838 (0.4%)	18.49 (0.3%)	30.73 (0.4%)	53.23 (0.3%)	17.38
% change	-2.9	-1.5	16.5	15.6	15.6	42.2

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	57	52	54	65	64	63	59	51	51
	Receipts	5,642	5,082	6,463	7,177	4,261	6,605	4,480	3,077	3,294
Seafood sales, retail	Firms	55	51	45	55	46	48	47	48	46
	Receipts	8,621	7,331	7,115	5,905	4,035	4,882	5,835	4,608	4,492

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	28	27	27	27	29	25	27	28	29
	Employees	576	614	616	536	490	545	594	500	492
	Payroll	19,767	12,349	12,304	9,351	9,288	10,427	12,851	10,353	12,011
Seafood sales, wholesale	Establishments	177	177	167	170	168	164	164	152	136
	Employees	1,048	1,152	996	1,015	1,210	1,126	1,153	1,109	1,047
	Payroll	30,108	30,513	32,192	32,005	36,185	37,687	39,915	38,412	40,734
Seafood sales, retail	Establishments	50	49	55	50	45	49	51	51	48
	Employees	189	184	179	181	148	152	176	177	215
	Payroll	5,112	4,678	4,753	4,635	4,148	4,481	5,126	5,108	6,902

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	4	3	3	3	5	4	4	4	3
	Employees	ds	ds	ds	ds	ds	22	28	ds	ds
	Payroll	ds	ds	ds	ds	1,058	1,037	1,067	1,105	ds
Deep sea freight transportation	Establishments	2	1	1	0	1	1	1	0	0
	Employees	ds	ds	ds	NA	ds	ds	ds	NA	NA
	Payroll	ds	ds	ds	NA	ds	ds	ds	NA	NA
Deep sea passenger transportation	Establishments	1	1	1	2	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	84	84	84	86	87	89	86	84	80
	Employees	406	411	417	464	411	376	395	349	428
	Payroll	13,369	14,215	15,353	18,600	15,206	14,654	14,699	15,426	17,102
Marine cargo handling	Establishments	4	3	3	3	3	3	2	2	1
	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	16	12	15	15	14	13	13	13
	Employees	91	88	93	105	138	93	68	63	65
	Payroll	4,927	5,890	6,260	6,737	6,148	5,369	4,928	4,776	4,730
Port & harbor operations	Establishments	1	1	1	2	2	1	1	1	6
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	86	92	89	94	90	82	75	76	76
	Employees	7,753	ds	6,808	6,751	6,930	ds	ds	ds	ds
	Payroll	328,179	ds	320,288	345,036	354,899	ds	ds	ds	ds

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Tables | Massachusetts

2013 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	100,108	7,706,079	2,021,479	3,073,305	64,279	2,365,086	874,479	1,190,413
Commercial Harvesters	13,524	1,027,556	330,189	482,560	13,524	1,027,556	330,189	482,560
Seafood Processors & Dealers	7,573	970,561	370,036	481,111	1,833	233,572	89,051	115,782
Importers	14,588	4,012,727	643,116	1,223,255	0	0	0	0
Seafood Wholesalers & Distributors	3,150	491,710	160,683	218,022	1,160	181,059	59,167	80,281
Retail	61,273	1,203,526	517,456	668,358	47,761	922,899	396,072	511,790

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	325,937	427,332	586,320	420,004	399,822	400,473	478,801	571,599	618,247	566,858
Finfish & Other	109,163	117,003	252,456	109,370	121,913	114,361	126,594	132,685	128,232	94,829
Shellfish	216,774	310,330	333,863	310,634	277,909	286,112	352,206	438,915	490,016	472,030
Key Species										
American lobster	51,581	49,563	55,901	51,258	45,418	42,731	50,389	53,367	53,346	61,642
Atlantic herring	4	69	149,733	8,265	11,342	15,062	10,251	8,717	11,697	10,988
Atlantic mackerel	6,542	NA	10,320	4,736	4,265	4,528	1,487	137	654	1,223
Clams, all other	4,721	19,010	14,045	15,680	15,255	16,745	17,966	19,157	37,296	28,833
Cod & haddock	31,452	31,954	25,397	32,043	38,696	33,684	45,210	43,397	26,101	14,108
Eastern oyster	24	2,738	4,864	4,559	5,496	6,432	8,225	9,079	12,069	13,888
Flounders	29,897	28,815	24,569	22,095	20,924	19,645	19,975	22,025	26,211	20,617
Goosefish	15,675	21,485	17,712	14,380	14,035	9,902	9,922	13,431	13,596	8,872
Ocean quahog clam	6,919	NA	8,297	10,100	9,575	10,710	8,981	7,995	NA	10,229
Sea scallop	144,748	226,949	234,796	218,292	189,891	197,280	252,292	330,959	364,896	334,552

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	337,603	337,304	396,910	304,774	326,632	356,105	283,046	264,533	297,561	264,588
Finfish & Other	267,342	267,311	304,970	227,566	256,000	279,330	201,165	179,661	195,472	166,246
Shellfish	70,261	69,993	91,940	77,208	70,633	76,775	81,881	84,872	102,089	98,341
Key Species										
American lobster	11,295	9,880	12,100	10,145	10,600	11,782	12,773	13,386	14,483	15,255
Atlantic herring	40	700	119,547	73,268	94,266	133,531	71,922	66,495	81,781	76,897
Atlantic mackerel	72,687	NA	89,535	46,240	35,406	30,199	12,156	515	4,131	7,279
Clams, all other	6,315	19,881	7,071	4,135	4,376	6,552	10,242	13,352	35,054	22,973
Cod & haddock	26,926	24,539	15,833	20,298	28,537	28,515	36,461	27,164	13,164	8,121
Eastern oyster	9	105	87	123	138	159	215	231	310	328
Flounders	30,704	22,115	13,170	10,977	11,609	12,405	11,158	13,692	15,404	11,519
Goosefish	22,357	21,849	17,495	13,597	12,680	10,015	8,887	10,143	11,583	9,501
Ocean quahog clam	14,085	NA	16,830	20,158	18,126	18,691	15,646	12,479	NA	14,476
Sea scallop	27,944	29,045	36,666	32,540	27,011	29,782	31,160	33,093	36,728	29,277

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.57	5.02	4.62	5.05	4.28	3.63	3.94	3.99	3.68	4.04
Atlantic herring	0.09	0.10	1.25	0.11	0.12	0.11	0.14	0.13	0.14	0.14
Atlantic mackerel	0.09	NA	0.12	0.10	0.12	0.15	0.12	0.27	0.16	0.17
Clams, all other	0.75	0.96	1.99	3.79	3.49	2.56	1.75	1.43	1.06	1.26
Cod & haddock	1.17	1.30	1.60	1.58	1.36	1.18	1.24	1.60	1.98	1.74
Eastern oyster	2.74	26.09	56.10	37.00	39.77	40.36	38.30	39.25	38.96	42.28
Flounders	0.97	1.30	1.87	2.01	1.80	1.58	1.79	1.61	1.70	1.79
Goosefish	0.70	0.98	1.01	1.06	1.11	0.99	1.12	1.32	1.17	0.93
Ocean quahog clam	0.49	NA	0.49	0.50	0.53	0.57	0.57	0.64	NA	0.71
Sea scallop	5.18	7.81	6.40	6.71	7.03	6.62	8.10	10.00	9.94	11.43

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Massachusetts Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	1,036	115,423	56,944	73,552
	Private Boat	841	97,159	43,955	64,640
	Shore	695	74,361	31,337	48,065
Total Durable Expenditures		4,351	468,541	217,278	320,903
Total State Economic Impacts		6,923	755,484	349,514	507,160

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	48,203	21,581
Private Boat	19,633	79,813
Shore	25,337	31,952
Total	93,173	133,346

Equipment	Durable Goods Expenditures
Fishing Tackle	141,406
Other Equipment	38,426
Boat Expenses	267,388
Vehicle Expenses	107,843
Second Home Expenses	2,060
Total Durable Expenditures	557,124

Total State Trip and Durable Equipment Expenditures	783,643

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	535	585	623	664	655	489	586	490	502	546
Non-Coastal	131	135	151	179	170	144	152	115	130	77
Out-of-State	335	391	484	465	469	421	433	293	309	275
Total Anglers	1,000	1,112	1,258	1,309	1,293	1,054	1,171	897	941	898

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	211	236	231	234	255	240	154	189	203	259
Private	2,273	2,336	2,411	2,440	2,338	1,760	2,148	1,319	1,471	1,621
Shore	1,968	1,739	1,938	1,947	1,929	1,451	1,186	1,305	1,151	1,058
Total Trips	4,451	4,311	4,579	4,622	4,522	3,450	3,489	2,813	2,825	2,939

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic bonito	H	5	30	13	4	7	4	1	5	5	-1
	R	2	9	38	12	9	1	3	-1	-1	1
Atlantic cod	H	349	387	119	232	260	213	412	360	229	216
	R	658	932	423	658	671	581	884	542	240	411
Atlantic mackerel	H	479	1,926	3,603	951	2,024	471	2,083	1,649	1,133	2,273
	R	77	17	423	27	152	68	185	43	160	177
Bluefish	H	355	549	652	683	519	344	474	225	336	448
	R	1,294	1,813	1,843	1,240	1,302	953	1,029	598	714	580
Haddock	H	127	247	121	293	233	155	144	52	90	104
	R	56	62	63	56	158	36	33	12	68	310
Porgies (scup)	H	3,313	657	424	1,770	762	1,069	925	786	1,587	2,042
	R	1,486	751	1,096	1,183	1,688	1,741	1,858	1,174	1,805	1,257
Striped bass	H	446	341	314	316	378	345	340	256	379	298
	R	4,980	3,989	7,810	5,331	3,649	2,282	1,671	972	990	1,690
Summer flounder	H	225	267	239	138	233	50	45	58	76	32
	R	348	358	610	135	273	96	215	183	250	63
Winter flounder	H	45	38	43	41	169	87	86	69	46	43
	R	15	41	21	19	62	84	68	58	18	16
Wrasses (tautog)	H	22	72	80	91	34	25	45	33	25	58
	R	67	126	332	414	78	96	118	210	96	231

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Massachusett's State Economy (% of national total)[1,2]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[3]
2004	175,933 (2.4%)	2,979,690 (2.6%)	135.24 (3.2%)	193.18 (2.9%)	332.07 (2.7%)	9.06
2012	171,278 (2.3%)	3,035,897 (2.6%)	173.25 (3.2%)	250.68 (2.9%)	431.94 (2.7%)	ds
% change	-2.7	1.9	21.9	22.9	23.1	NA

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	25	28	36	24	26	22	27	36	25
	Receipts	2,284	2,266	2,525	908	1,250	1,943	2,082	2,433	1,699
Seafood sales, retail	Firms	64	59	62	57	64	64	61	66	65
	Receipts	5,933	5,528	4,905	4,421	7,982	7,686	6,287	7,640	5,213

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

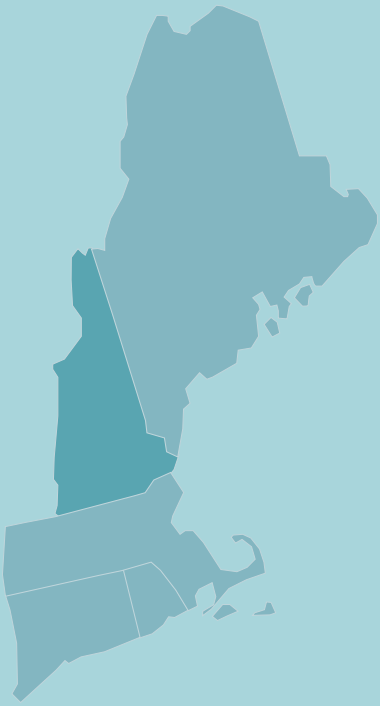
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	53	50	47	52	44	44	44	44	39
	Employees	2,743	2,671	2,607	2,684	2,355	2,396	2,159	2,214	1,638
	Payroll	112,642	115,704	120,912	113,580	109,747	119,282	107,635	112,399	74,541
Seafood sales, wholesale	Establishments	148	151	139	160	141	144	149	141	140
	Employees	1,890	1,836	1,706	1,803	1,442	1,542	1,591	2,013	1,841
	Payroll	75,689	76,070	77,106	81,863	68,898	70,864	83,467	94,105	100,801
Seafood sales, retail	Establishments	128	116	115	126	118	115	112	106	114
	Employees	686	677	692	737	549	542	584	576	576
	Payroll	17,454	17,725	18,165	19,267	15,017	15,261	16,495	16,037	15,776

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[1,2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	13	10	12	14	14	12	12	10	14
	Employees	688	ds	623	283	169	166	ds	ds	ds
	Payroll	36,533	ds	38,421	18,620	11,701	10,011	ds	ds	3,266
Deep sea freight transportation	Establishments	10	10	11	12	8	10	8	7	9
	Employees	ds	ds	509	ds	361	ds	313	381	ds
	Payroll	ds	ds	38,982	ds	38,908	35,473	36,069	38,797	ds
Deep sea passenger transportation	Establishments	1	4	4	1	0	1	0	0	0
	Employees	ds	ds	ds	ds	NA	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	NA	ds	NA	NA	NA
Marinas	Establishments	135	139	141	173	175	177	175	176	172
	Employees	989	973	1,064	1,154	1,138	1,188	1,150	1,125	977
	Payroll	41,474	43,103	45,894	51,705	53,694	56,663	57,002	58,251	48,657
Marine cargo handling	Establishments	6	5	4	5	3	2	2	2	4
	Employees	ds	ds	ds	69	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	2,867	2,271	ds	ds	ds	ds
Navigational services to shipping	Establishments	7	6	11	9	8	11	9	9	8
	Employees	ds	ds	ds	65	75	71	150	139	120
	Payroll	ds	ds	ds	4,540	4,355	4,342	9,413	6,980	5,965
Port & harbor operations	Establishments	3	3	4	3	4	4	8	6	5
	Employees	ds	ds	ds	69	63	66	86	95	35
	Payroll	ds	ds	ds	647	1,289	1,323	2,662	3,035	1,519
Ship & boat building	Establishments	55	50	47	49	43	38	37	37	40
	Employees	ds	588	ds	588	603	579	535	445	446
	Payroll	ds	20,050	ds	26,445	28,402	20,685	20,196	22,066	23,195

[1] ds = these data are suppressed.
[2] NA = not applicable.
[3] 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.

Tables | New Hampshire



2013 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	5,004	626,123	149,086	235,843	1,759	96,524	35,719	48,846
Commercial Harvesters	607	35,135	9,930	15,421	607	35,135	9,930	15,421
Seafood Processors & Dealers	516	55,476	21,799	28,108	139	14,896	5,853	7,547
Importers	1,495	411,335	65,924	125,393	0	0	0	0
Seafood Wholesalers & Distributors	302	37,990	13,392	17,623	54	6,800	2,397	3,155
Retail	2,083	86,188	38,041	49,298	958	39,692	17,539	22,723

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	17,214	22,084	18,970	17,021	17,471	17,754	20,599	23,483	23,176	20,190
Finfish & Other	6,449	6,840	5,122	4,151	4,824	5,569	5,122	6,147	5,553	2,919
Shellfish	10,765	15,244	13,848	12,870	12,647	12,186	15,477	17,336	17,622	17,271
Key Species										
American lobster	10,199	14,377	12,582	12,517	12,267	11,919	14,836	16,343	17,130	16,619
Atlantic cod	2,244	1,913	1,732	1,972	2,311	2,587	2,187	2,500	1,741	546
Atlantic herring	3	NA	3	147	134	271	375	208	353	212
Goosefish	1,456	1,484	783	375	290	280	212	207	153	186
Haddock	157	136	128	123	89	68	29	35	95	23
Hake	200	279	165	244	167	215	237	445	474	357
Pollock	569	1,138	1,502	902	1,093	1,283	839	1,355	1,199	1,136
Sea scallop	276	527	126	30	16	4	3	26	143	281
Shrimp	222	340	NA	NA	NA	NA	NA	NA	NA	NA
Spiny dogfish	0	NA	76	NA	419	557	293	451	427	96

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	23,796	21,281	10,295	8,430	10,464	13,886	11,809	12,315	12,138	8,264
Finfish & Other	21,074	18,081	7,463	5,174	7,180	10,093	7,026	7,144	7,549	3,996
Shellfish	2,722	3,200	2,832	3,256	3,284	3,793	4,783	5,171	4,590	4,267
Key Species										
American lobster	2,097	2,556	2,357	2,469	2,567	2,985	3,648	3,919	4,216	3,823
Atlantic cod	1,633	1,293	1,024	1,168	1,479	1,984	1,227	1,286	725	230
Atlantic herring	32	NA	22	936	1,198	3,120	2,830	1,514	2,391	1,560
Goosefish	1,640	1,226	621	325	250	250	172	153	126	162
Haddock	123	99	73	61	53	45	18	19	45	10
Hake	405	372	157	313	222	423	322	587	1,135	380
Pollock	1,202	1,997	2,566	2,025	2,456	2,017	1,042	1,732	1,037	985
Sea scallop	44	76	21	4	2	1	0	3	12	24
Shrimp	432	567	NA	NA	NA	NA	NA	NA	NA	NA
Spiny dogfish	0	NA	242	NA	1,370	2,073	1,214	1,646	1,805	515

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.86	5.62	5.34	5.07	4.78	3.99	4.07	4.17	4.06	4.35
Atlantic cod	1.37	1.48	1.69	1.69	1.56	1.30	1.78	1.94	2.40	2.38
Atlantic herring	0.10	NA	0.12	0.16	0.11	0.09	0.13	0.14	0.15	0.14
Goosefish	0.89	1.21	1.26	1.15	1.16	1.12	1.23	1.36	1.21	1.15
Haddock	1.27	1.38	1.76	2.01	1.70	1.52	1.57	1.91	2.12	2.22
Hake	0.49	0.75	1.05	0.78	0.75	0.51	0.74	0.76	0.42	0.94
Pollock	0.47	0.57	0.59	0.45	0.45	0.64	0.81	0.78	1.16	1.15
Sea scallop	6.22	6.89	5.92	8.26	7.68	7.22	8.84	10.35	11.68	11.52
Shrimp	0.51	0.60	NA	NA	NA	NA	NA	NA	NA	NA
Spiny dogfish	0.18	NA	0.32	NA	0.31	0.27	0.24	0.27	0.24	0.19

[1] NA=these data are confidential thus not disclosable.

2013 Economic Impacts of New Hampshire Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	239	23,845	11,172	14,382
	Private Boat	39	4,127	1,894	2,756
	Shore	21	1,875	770	1,194
Total Durable Expenditures		367	32,962	15,734	22,834
Total State Economic Impacts		666	62,809	29,570	41,166

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	9,563	5,294
Private Boat	486	3,980
Shore	641	924
Total	10,690	10,198

Equipment	Durable Goods Expenditures
Fishing Tackle	12,882
Other Equipment	3,415
Boat Expenses	12,545
Vehicle Expenses	8,530
Second Home Expenses	0
Total Durable Expenditures	37,372

Total State Trip and Durable Equipment Expenditures	58,260

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	81	105	90	97	63	67	46	56	58	68
Non-Coastal	13	14	15	13	8	9	7	10	9	19
Out-of-State	69	84	82	63	46	58	33	30	54	66
Total Anglers	163	203	187	172	118	134	86	96	121	153

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	28	53	92	114	90	98	61	71	55	116
Private	154	238	182	233	139	147	90	178	163	107
Shore	161	214	227	155	103	155	92	48	81	89
Total Trips	343	505	501	502	333	401	243	297	299	313

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic bonito	H	1	(1)	(1)	3	(1)	(1)	(1)	(1)	(1)	(1)
	R	2	2	9	1	2	(1)	1	(1)	1	1
Atlantic cod	H	66	68	66	53	81	128	80	128	64	115
	R	96	138	248	234	232	209	130	259	150	155
Atlantic mackerel	H	71	407	115	128	496	882	295	2,143	1,116	708
	R	10	16	32	9	36	82	18	189	160	14
Bluefin tuna	H	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	2	(1)	(1)
Bluefish	H	15	21	9	34	6	(1)	2	2	9	(1)
	R	9	49	24	18	3	2	(1)	1	4	(1)
Bottomfish, unidentified	H	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Haddock	H	68	102	167	97	90	100	48	76	74	71
	R	22	38	109	43	18	28	11	20	114	257
Pollock	H	57	60	77	70	52	39	52	100	65	119
	R	35	35	46	17	20	49	75	105	147	238
Striped bass	H	8	25	13	7	6	9	6	32	14	18
	R	226	573	461	257	78	58	51	98	64	84
Winter flounder	H	2	1	7	10	10	10	2	12	(1)	(1)
	R	2	1	3	7	6	5	5	2	1	3

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

New Hampshire's State Economy (% of national total)[1,2]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[3]
2004	38,843 (0.5%)	551,001 (0.5%)	20.01 (0.5%)	30.50 (0.5%)	53.05 (0.4%)	ds
2012	37,213 (0.5%)	548,985 (0.5%)	24.06 (0.4%)	37.81 (0.4%)	66.11 (0.4%)	ds
% change	-4.4	-0.4	16.8	19.3	19.8	NA

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	4	4	4	5	ds	ds	3	7	7
	Receipts	1,147	842	1,087	927	ds	ds	687	856	1,166
Seafood sales, retail	Firms	15	11	10	11	17	14	11	11	12
	Receipts	1,438	1,330	1,496	1,540	1,894	1,870	1,502	2,152	2,096

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

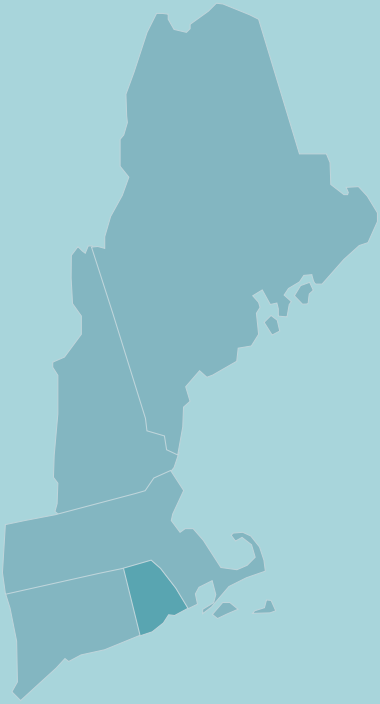
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	10	10	10	7	7	8	8	8	8
	Employees	448	418	ds	ds	ds	115	292	231	229
	Payroll	18,886	16,275	ds	ds	ds	3,234	10,971	12,010	12,181
Seafood sales, wholesale	Establishments	12	10	9	8	8	8	8	7	8
	Employees	82	ds	ds	92	101	88	80	84	99
	Payroll	2,511	ds	ds	3,360	4,142	4,268	4,171	4,123	5,738
Seafood sales, retail	Establishments	12	12	15	15	14	14	12	16	9
	Employees	ds	79	78	93	83	95	102	88	48
	Payroll	ds	2,053	2,201	2,077	2,011	2,299	2,296	1,934	870

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	0	1	1	1	0	0	0	0	1
	Employees	NA	ds	ds	ds	NA	NA	NA	NA	ds
	Payroll	NA	ds	ds	ds	NA	NA	NA	NA	ds
Deep sea freight transportation	Establishments	1	2	2	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	40	38	35	35	37	37	35	34	31
	Employees	226	194	ds	171	173	146	135	139	131
	Payroll	9,315	8,871	ds	7,774	8,114	7,022	6,920	7,090	6,927
Marine cargo handling	Establishments	0	0	0	1	0	0	0	0	0
	Employees	NA	NA	NA	ds	NA	NA	NA	NA	NA
	Payroll	NA	NA	NA	ds	NA	NA	NA	NA	NA
Navigational services to shipping	Establishments	3	4	4	2	2	2	2	2	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	0	2
	Employees	NA	NA	NA	NA	NA	NA	NA	NA	ds
	Payroll	NA	NA	NA	NA	NA	NA	NA	NA	ds
Ship & boat building	Establishments	8	6	6	8	9	8	7	7	7
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds

[1] ds = these data are suppressed.
[2] NA = not applicable.
[3] 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.

Tables | Rhode Island



2013 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	9,560	980,903	250,218	389,023	5,439	304,170	111,135	155,119
Commercial Harvesters	2,464	148,345	45,903	70,797	2,464	148,345	45,903	70,797
Seafood Processors & Dealers	490	50,680	19,639	25,520	337	34,810	13,489	17,529
Importers	2,008	552,450	88,541	168,411	0	0	0	0
Seafood Wholesalers & Distributors	470	55,709	19,739	25,973	137	16,239	5,754	7,571
Retail	4,128	173,721	76,396	98,322	2,501	104,776	45,989	59,223

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	77,565	91,408	99,365	72,282	66,085	61,657	62,701	75,540	80,787	86,419
Finfish & Other	25,821	24,672	29,680	24,839	22,792	23,421	23,002	24,544	28,413	29,584
Shellfish	51,744	66,736	69,685	47,443	43,293	38,236	39,698	50,995	52,374	56,835
Key Species										
All other flounders	2,136	1,734	3,503	3,585	2,171	1,455	593	806	1,024	2,133
American lobster	14,624	23,009	17,333	12,151	12,976	11,264	12,404	12,765	12,033	9,732
Atlantic herring	1,187	1,075	2,947	982	631	1,260	1,385	981	1,987	4,782
Atlantic mackerel	3,815	2,888	4,138	1,182	882	3,301	1,886	73	2,798	489
Goosefish	3,421	4,549	4,525	3,540	3,590	3,022	2,973	4,600	3,844	2,733
Quahog clam	5,868	3,438	3,529	4,010	3,273	2,849	3,293	3,920	5,169	5,033
Scups or porgies	1,990	2,319	2,927	2,767	2,324	2,640	2,833	3,312	3,904	3,669
Sea scallop	1,512	13,268	20,822	8,963	2,170	2,342	2,156	6,834	9,191	18,658
Squid	25,133	16,973	22,601	15,339	17,687	15,249	12,590	20,380	18,682	13,172
Summer flounder	5,309	5,866	5,093	4,346	4,485	4,502	5,534	6,408	6,937	6,752

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	115,037	97,565	113,025	75,271	72,027	84,041	77,538	76,706	83,290	90,012
Finfish & Other	62,169	47,820	60,867	40,940	34,570	46,549	42,395	40,208	50,917	64,021
Shellfish	52,868	49,745	52,158	34,331	37,458	37,492	35,143	36,498	32,373	25,991
Key Species										
All other flounders	2,360	1,315	1,850	1,871	1,144	1,027	358	615	663	1,372
American lobster	3,064	4,344	3,752	2,293	2,772	2,840	2,929	2,754	2,689	2,156
Atlantic herring	13,491	11,605	23,150	7,537	4,504	9,528	8,279	6,717	11,968	27,881
Atlantic mackerel	15,269	8,075	10,143	4,242	2,385	9,057	4,356	132	5,467	1,255
Goosefish	4,288	4,143	3,864	3,209	3,225	2,841	2,556	3,242	2,873	2,825
Quahog clam	1,080	642	385	610	556	511	599	666	903	818
Scups or porgies	3,425	3,424	3,643	3,932	2,151	3,619	4,299	6,335	6,309	7,357
Sea scallop	249	1,612	3,283	1,357	310	356	267	690	944	1,648
Squid	43,697	22,135	39,617	23,718	26,417	26,452	19,799	25,996	23,518	12,587
Summer flounder	3,085	2,925	2,123	1,516	1,473	1,794	2,289	2,824	2,409	2,193

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All other flounders	0.90	1.32	1.89	1.92	1.90	1.42	1.66	1.31	1.54	1.55
American lobster	4.77	5.30	4.62	5.30	4.68	3.97	4.24	4.64	4.48	4.51
Atlantic herring	0.09	0.09	0.13	0.13	0.14	0.13	0.17	0.15	0.17	0.17
Atlantic mackerel	0.25	0.36	0.41	0.28	0.37	0.36	0.43	0.55	0.51	0.39
Goosefish	0.80	1.10	1.17	1.10	1.11	1.06	1.16	1.42	1.34	0.97
Quahog clam	5.43	5.35	9.16	6.57	5.88	5.58	5.50	5.89	5.72	6.15
Scups or porgies	0.58	0.68	0.80	0.70	1.08	0.73	0.66	0.52	0.62	0.50
Sea scallop	6.07	8.23	6.34	6.61	7.00	6.58	8.07	9.90	9.73	11.32
Squid	0.58	0.77	0.57	0.65	0.67	0.58	0.64	0.78	0.79	1.05
Summer flounder	1.72	2.01	2.40	2.87	3.04	2.51	2.42	2.27	2.88	3.08

2013 Economic Impacts of Rhode Island Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	127	13,217	6,227	8,085
	Private Boat	202	20,378	8,554	12,651
	Shore	83	8,381	3,569	5,260
Total Durable Expenditures		2,108	184,126	83,765	129,402
Total State Economic Impacts		2,520	226,102	102,115	155,398

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	7,095	1,197
Private Boat	10,412	10,815
Shore	4,349	4,596
Total	21,856	16,608

Equipment	Durable Goods Expenditures
Fishing Tackle	81,634
Other Equipment	5,809
Boat Expenses	104,830
Vehicle Expenses	5,287
Second Home Expenses	0
Total Durable Expenditures	197,560

Total State Trip and Durable Equipment Expenditures	236,024

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	129	145	177	171	169	111	161	105	99	129
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	237	241	291	229	297	209	225	190	169	255
Total Anglers	366	386	468	401	465	320	387	296	268	383

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	44	55	53	74	67	56	41	39	40	48
Private	650	793	642	590	716	423	531	536	461	587
Shore	812	757	874	759	673	507	667	539	575	595
Total Trips	1,506	1,605	1,568	1,423	1,456	986	1,239	1,114	1,077	1,229

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic bonito	H	3	1	(1)	5	(1)	(1)	(1)	(1)	(1)	4
	R	8	(1)	(1)	4	1	(1)	(1)	(1)	(1)	5
Atlantic cod	H	1	1	4	1	2	4	2	4	16	(1)
	R	2	3	2	(1)	1	7	12	14	1	(1)
Black seabass	H	27	86	41	44	52	36	161	50	102	75
	R	23	64	161	117	128	133	212	221	767	678
Bluefish	H	257	345	471	295	282	64	103	124	673	324
	R	801	526	555	686	491	160	93	327	427	629
Porgies (scup)	H	817	430	470	353	633	140	398	568	497	818
	R	518	690	802	613	1,386	332	536	663	675	615
Striped bass	H	84	110	76	102	51	71	70	89	62	219
	R	526	634	835	678	417	399	183	215	247	826
Summer flounder	H	249	165	264	176	204	72	118	162	103	127
	R	278	280	1,129	612	848	383	230	724	381	527
Winter flounder	H	7	(1)	(1)	1	1	4	2	(1)	(1)	(1)
	R	5	(1)	(1)	3	1	1	1	(1)	2	(1)
Wrasses (tautog)	H	125	161	81	125	103	86	197	20	104	128
	R	222	319	198	267	187	188	187	138	214	249
Yellowfin tuna	H	(1)	1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	6
	R	(1)	2	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

[1] NA = not applicable because all Rhode Island residents are considered coastal county residents.
[2] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

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

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	30,011 (0.4%)	434,706 (0.4%)	15.03 (0.4%)	24.04 (0.4%)	43.38 (0.4%)	3.66
2012	28,034 (0.4%)	402,977 (0.3%)	17.29 (0.3%)	28.66 (0.3%)	51.57 (0.3%)	3.51
% change	-7.1	-7.9	13.1	16.1	15.9	-4.3

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	ds	6	8	8	7	9	6	9	10
	Receipts	ds	2,024	1,662	2,291	1,376	1,045	907	1,168	1,441
Seafood sales, retail	Firms	14	16	24	23	19	16	17	25	20
	Receipts	2,186	2,215	3,266	3,536	2,748	2,821	2,769	3,033	2,536

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	7	7	7	6	8	7	5	4	3
	Employees	355	270	231	196	270	275	193	178	ds
	Payroll	10,867	5,549	6,137	6,876	6,354	5,821	6,096	5,544	ds
Seafood sales, wholesale	Establishments	35	32	36	35	29	34	32	34	32
	Employees	259	206	188	224	226	202	204	230	278
	Payroll	12,269	9,851	10,209	11,447	10,505	9,534	9,815	10,264	13,064
Seafood sales, retail	Establishments	34	31	28	27	23	24	26	23	24
	Employees	163	140	ds	109	94	127	113	109	111
	Payroll	2,707	2,447	ds	2,207	2,027	2,398	2,309	2,232	2,388

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	1	1	1	1	2	1	1	2	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	2
	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	1	1	1	1	1	1
	Employees	NA	NA	NA	ds	ds	ds	ds	ds	ds
	Payroll	NA	NA	NA	ds	ds	ds	ds	ds	ds
Marinas	Establishments	60	66	63	68	73	70	72	71	67
	Employees	475	408	457	463	476	459	428	460	424
	Payroll	15,111	15,843	18,748	22,029	23,204	21,372	22,227	22,618	20,811
Marine cargo handling	Establishments	1	1	2	2	5	5	5	5	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	8	7	7	8	8	8	8	7
	Employees	ds	ds	ds	ds	ds	ds	ds	107	ds
	Payroll	ds	ds	ds	ds	5,904	3,728	3,955	4,002	3,272
Port & harbor operations	Establishments	2	2	2	2	2	1	1	1	5
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	38	36	38	37	39	33	29	30	37
	Employees	ds	ds	1,325	1,374	1,342	1,085	954	916	717
	Payroll	ds	ds	52,682	55,788	54,225	41,246	40,004	33,316	32,070

[1] 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.
[2] ds = these data are suppressed.
[3] 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, Pennsylvania, and Virginia. Federal fisheries in this region are managed by the Mid-Atlantic Fishery Management Council (MAFMC) and NOAA Fisheries (NMFS) under seven fishery management plans (FMPs). Two of these FMPs are developed in conjunction with the New England Fisheries Management Council (NEFMC). The MAFMC is the lead Council for the Dogfish FMP and 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 fishery management plans were listed as overfished or experiencing overfishing in 2013. Currently, the MAFMC is working on amendments to several FMPs. These amendments include changes to the Atlantic mackerel, squid, and butterfish FMP to protect deepsea corals from the impacts of bottom-tending fishing gear in the Mid-Atlantic. In addition, the MAFMC is developing an amendment to the Summer Flounder, Scup, and Black Sea Bass FMP with input from and coordination with the Atlantic States Marine Fisheries Commission. This amendment involves updating FMP goals and objectives for summer flounder as well as changes to summer flounder management in both state and federal waters.

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

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 program performance indicators show that 2012 surfclam revenue per active vessel increased but the number of active vessels, surfclam quota and landings, and inflation-adjusted surfclam revenue decreased relative to its Baseline period (3-year period prior to implementation).

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. Key program performance indicators show that relative to its Baseline period, 2012 ocean quahog quota and landings, the number of active vessels, and inflation-adjusted ocean quahog revenue decreased while ocean quahog revenue per active vessel increased.

The Golden Tilefish IFQ Program was implemented in 2009 to reduce overcapacity 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 aided 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 show that relative to its Baseline, 2012 golden tilefish quota, landings, and both inflation-adjusted golden tilefish landings revenue and revenue per active vessel had increased while the number of active vessels had decreased. Total revenue of catch share program participants declined, however, during this period because of declining revenues from trips they made in other fisheries.

COMMERCIAL FISHERIES

In 2013, commercial fishermen in the Mid-Atlantic Region landed 583 million pounds of finfish and shell-

fish earning $458 million in landings revenue. Landings revenue was dominated by sea scallop ($101 million) and blue crab ($87 million). These species commanded ex-vessel prices of $11.34 and $1.57 per pound, respectively, and comprised 41% of total landings revenue in the Mid-Atlantic Region.

Key Mid-Atlantic Region Commercial Species

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

Virginia ($163 million) and New Jersey ($133 million) had the highest landings revenue in the region in 2013. Delaware had the lowest landings revenue ($7.4 million). In terms of pounds landed, Virginia (382 million pounds) had the highest landings, followed by New Jersey (120 million pounds). Delaware had the lowest landings at 4 million pounds.

Economic Impacts[1]

In 2013, the Mid-Atlantic Region's seafood industry generated $6.4 billion in sales impacts in New Jersey, $5.8 billion in sales impacts in New York, $1.2 billion in sales impacts in Maryland, $ 1.1 billion in sales impacts in Virginia, and $56 million in sales impacts in Delaware. The largest job impacts were generated in New York (49,000 jobs) and New Jersey (41,000 jobs). The largest income ($1.4 billion) and value added ($2.3 billion) impacts were generated in New Jersey. The smallest impacts were generated in Delaware with 400 jobs, $11.2 million in income, and $18.7 million in value added.

The sector that generated the greatest employment impacts by state was the retail sector with 25,000 jobs in New York. More sales impacts were generated by importers in New Jersey than any other sector in any another state in the region at $4.5 billion and the greatest value added impacts were also generated by importers in New Jersey ($1.4 billion).

Landings Revenue

Landings revenue in the Mid-Atlantic Region totaled $458 million in 2013. This was a 12% increase (a 17% decrease in real terms) from 2004 levels and a 6% decrease from 2012. Virginia ($163 million) and New Jersey ($133 million) had the highest landings revenue in the region while Delaware had the lowest ($7.4 million).

Totaling $310 million in 2013, shellfish revenue experienced a 3% decrease (a 29% decrease in real terms) from 2004 to 2013 and a 13% decrease from 2012 to 2013. New Jersey earned the most from shellfish ($107 million), followed by Virginia ($106 million), and New York ($34 million). New Jersey and Virginia earned the most from finfish landings revenue, $62 million and $57 million, respectively.

Sea scallop ($101 million) and blue crab ($87 million) had the highest landings revenue in the Mid-Atlantic Region in 2013. From 2004 to 2013, species or species groups with large increases in landings revenue included oysters (557%, 383% in real terms), striped bass (159%, 91% in real terms), and quahog clam (80%, 33% in real terms). Species or species groups with large increases in landings revenue between 2012 and 2013 include oysters (342%), quahog clam (42%), and striped bass (35%). Surging production in Virginia from aquaculture operations accounted for the majority of oyster landings revenue growth.

Notably large decreases in landings revenue between 2004 and 2013 were experienced by Atlantic surfclam (-49%, -62% in real terms), American lobster (-45%, -59% in real terms), and squid (-15%, -37% in real terms). Species or species groups with large decreases in landings revenue between 2012 and 2013 included sea scallop (-40%), American lobster (-40%), and squid (-32%).

Landings

Fishermen in the Mid-Atlantic Region landed 582 million pounds of finfish and shellfish in 2013. This was a 23% decrease from 2004 levels and a 22% decrease from 2012. Virginia (382 million pounds) and New Jersey (120 million pounds) had the highest landings while Delaware had the lowest (4 million pounds). Finfish landings contributed 76% of total landings in the Mid-Atlantic Region (446 million pounds) in 2013. Finfish landings experienced a 16% decrease from 2004 to 2013 and a 22% decrease from 2012. Shellfish landings

[1] 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).

experienced a 40% decrease from 2004 to 2013 and a 25% decrease from 2012.

Menhaden had the highest annual landings (366 million pounds) in the Mid-Atlantic in 2013 and accounted for 63% of total landings in the region. From 2004 to 2013, species or species groups with large increases in landings included oysters (402%) and striped bass (20%). Species or species groups with large increases in landings between 2012 and 2013 included oysters (131%) and quahog clam (24%). Sea scallop (-73%), squid (-65%), Atlantic surf-clam (-55%), and American lobster (-47%) experienced sizable declines in landings between 2004 and 2013. Species or species groups with large decreases in landings from 2012 and 2013 include sea scallop (-50%), squid (-45%), American lobster (-42%), and blue crab (-36%).

Commercial Fisheries Facts

Landings revenue

- On average, between 2004 and 2013, the key species or species groups accounted for 84% of total revenue, generating $381 million in the Mid-Atlantic Region.
- Sea scallop had higher landings revenues than any other species or species group, averaging $162 million in landings revenue from 2004 to 2013.

Landings

- Key species or species groups contributed an average of 84% annually to total landings between 2004 and 2013, with an annual average of 613 million pounds.
- Menhaden, contributed the most to landings in the region, averaging 436 million pounds from 2004 to 2013.

Prices

- Sea scallop had the highest average annual ex-vessel price per pound from 2004 to 2013:$7.66.
- Menhaden had the lowest average annual ex-vessel price per pound 2004 to 2013:$0.07.

Prices

The ex-vessel prices for the Mid-Atlantic's key species and species groups in 2013 were higher than their 10 year average for eight of the key species (seven of the species in real terms). Ex-vessel prices for squid (147%, 83% in real terms), sea scallops (136%, 73% in real terms), and striped bass (116%, 59% in real terms) increased the most between 2004 and 2013. Relative to ex-vessel prices in 2012, oyster (91%), striped bass (60%), and blue crab (35%) had the greatest increase.

RECREATIONAL FISHERIES

In 2013, 2.2 million recreational anglers took 14 million fishing trips in the Mid-Atlantic Region. About 94% of these anglers were residents of a coastal county in this region. Of the total fishing trips taken, 48% were taken from a private or rental boat and another 42% were shore-based. Atlantic croaker were the most frequently caught species or species group with 17.1 million fish caught in 2013.

Economic Impacts and Expenditures[2]

Key Mid-Atlantic Region Recreational Species

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

The contribution of recreational fishing activities 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 13,010 full- and part-time jobs generated by recreational fishing activities in the state in 2013. Job impacts were lowest in Delaware (875 jobs).

In addition to employment impacts, the contribution of recreational fishing activities to the Mid-Atlantic Region's economy can be measured in terms of sales, income impacts, and the contribution of these activities to gross domestic product (value added impacts). In 2013, sales, income, and value added impacts were the highest in New Jersey with $1.5 billion in sales impacts, $665 million in income impacts, and $1 billion in value added. These impacts were lowest in Delaware.

Overall, total fishing trip and durable equipment expenditures across the Mid-Atlantic in 2013 were $3.4 billion.

[2] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).

Approximately 78% of these expenditures were related to durable equipment purchases. The greatest expenditures were for boat expenses ($1.3 billion), followed by fishing tackle ($669 million), and vehicle expenses ($387 million).

Fishing trip-related expenditures by the Mid-Atlantic Region's non-residents totaled over $214 million, of which the greatest portion can be attributed to private boat-based fishing trips ($84 million). Residents of the Mid-Atlantic Region spent $538 million on saltwater fishing trips, with the most of these expenses generated by private boat trips ($280 million).

Recreational Fishing Facts

Participation
- An average of 2.8 million anglers fished in the Mid-Atlantic Region annually from 2004 to 2013.
- Residents of coastal counties within the Mid-Atlantic region accounted for an average of 93% of total anglers annually over the 10 year time period.

Fishing trips
- In the Mid-Atlantic Region, an average of 18 million fishing trips were taken annually from 2004 to 2013.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 10.1 million and 6.8 million fishing trips, respectively, from 2004 to 2013.

Harvest and release
- Summer flounder was the most commonly caught key species or species group, averaging 19.4 million fish over the 10 year time period. Croaker (16.9 million fish) and bluefish (9 million fish) were the next most frequently caught.
- Of the ten commonly caught key species or species groups, eight were released more often than harvested over this time period.

Participation

There were 2.2 million recreational anglers who fished in the Mid-Atlantic Region in 2013, a 12% decrease from 2004. About 94% of these anglers were residents of a coastal county within the region.

Fishing Trips

Recreational fishermen took 14 million fishing trips in the Mid-Atlantic Region in 2013. This was a 24% decrease from 2004 and a 1% decrease from 2012. Of the total trips taken in the Mid-Atlantic Region in 2013, approximately 48% of the trips were private or rental boat-based and 42% of trips were shore-based.

Harvest and Release

Atlantic croaker (17 million fish), summer flounder (14 million fish), and spot (12 million fish) were the most frequently caught species by recreational anglers in the Mid-Atlantic Region in 2013.

MARINE ECONOMY[3]

Across all sectors of the economy in the Mid-Atlantic Region nearly 17 million full-and part-time employees were employed by about 1.1 million establishments in 2012. Annual payroll totaled $916.5 billion. Total employee compensation in the Mid-Atlantic region totaled $1.5 trillion and the combined gross state product of all states totaled about $2.7 trillion.[4]

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.[5] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

In 2012, the commercial fishing location quotient (CFLQ) for New Jersey was the highest in the region at 1. New Jersey's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately the same level of employment in these industries nationwide. Other states within the region had a lower proportion of employment in these sectors than the national average; the CFLQ for these states were all considerably less than 1.

[3] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[3] 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 (accessed September 15, 2014).
[3] U.S. Bureau of Labor Statistics, "Location Quotient Calculator," http://data.bls.gov/location_quotient/ (accessed September 15, 2014).

For this report, the marine economy, a subset of the regional economy, is comprised of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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

In 2012, there were more than 311 nonemployer firms (businesses that have no paid employees and are subject to federal income tax) with receipts totaling $19.6 million engaged in seafood product preparation and packaging across the Mid-Atlantic region (data for Delaware are suppressed). This was a 63% increase in the number of firms from 2004 levels. New York (133) and Virginia (76) accounted for the majority of these firms. There were 64 employer establishments in the seafood product preparation sector in 2012, a decline of 35% since 2004. The majority of these establishments (19) were located in Virginia. Employment in this sector was 1,854 and payroll was $86 million in 2012 (excludes Delaware firms), down 42% and 12%, respectively, since 2004.

There were 456 seafood wholesale establishments in the Mid-Atlantic region in 2012, a decrease of 10% from 2004. Most of these firms (291) were located in New York. Employment in the seafood wholesale sector was 4,113, down 9% since 2004. Payroll was $171 million in 2012, up 3% since 2004.

There were 476 nonemployer firms engaged in seafood retail sales in the Mid-Atlantic region in 2012, a 4% decrease from 2004 levels. New York (205) and Maryland (96) had the largest number of firms in this sector. Receipts from these firms totaled $42 million in 2012, down 27% from 2004. Region-wide, there were 653 employer establishments in the seafood retail sales sector in 2012, a decrease of 7% from 2004. Most of these firms were located in New York (385). Employment in the seafood retail sector was 2,911 (down 8% from 2004) and payroll was $70 million (up 20% from 2004).

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, more than 907 establishments were classified as marinas, employing 4,700 workers and spending $187 million on payroll in 2012.

Tables | Mid-Atlantic Region

2013 Economic Impacts of the Mid-Atlantic Seafood Industry (thousands of dollars)

		With Imports				Without Imports			
	Landings Revenue	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Delaware	7,422	406	56,315	11,206	18,685	321	36,061	7,637	12,248
Maryland	75,862	12,419	1,244,130	320,695	490,589	6,994	361,467	132,944	181,129
New Jersey	132,905	41,319	6,397,514	1,421,131	2,313,158	6,385	504,586	167,686	240,751
New York	56,978	48,732	5,809,415	1,247,120	2,060,194	4,471	203,691	70,774	98,996
Virginia	163,293	16,162	1,148,669	364,656	522,944	13,992	772,393	289,524	394,838

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	407,276	440,084	374,266	423,359	452,776	435,984	524,239	534,200	488,316	457,913
Finfish & Other	87,648	101,538	106,473	104,001	91,595	102,038	113,919	122,523	130,562	148,031
Shellfish	319,628	338,547	267,793	319,358	361,181	333,946	410,321	411,678	357,753	309,881
Key Species										
American lobster	5,656	6,696	9,105	8,744	7,213	5,989	6,265	4,687	5,248	3,126
Atlantic surfclam	26,760	27,084	27,241	32,479	30,019	26,426	19,940	18,737	13,718	13,688
Blue crab	69,364	71,073	55,628	69,498	80,912	80,019	128,490	99,340	100,410	86,787
Eastern oyster	5,663	6,703	6,343	9,039	11,205	9,356	12,014	6,601	8,428	37,230
Menhaden	25,570	28,188	25,104	29,918	24,457	28,581	40,341	39,676	40,023	33,630
Quahog clam	19,918	20,773	20,230	23,601	35,853	23,022	28,880	19,994	25,351	35,902
Sea scallop	160,665	181,327	121,121	147,053	165,916	161,814	184,288	227,443	168,921	100,551
Squid	14,278	9,163	7,937	7,443	7,724	7,158	12,031	20,646	17,819	12,170
Striped Bass	7,633	11,335	9,958	10,993	10,671	11,459	11,419	12,653	14,608	19,792
Summer flounder	13,244	13,615	13,432	10,855	9,693	9,980	12,854	15,578	17,161	17,367

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	757,107	708,741	690,920	750,026	687,838	695,009	814,205	791,154	751,144	582,707
Finfish & Other	529,453	517,898	511,013	556,767	482,200	490,284	579,688	577,875	568,075	445,508
Shellfish	227,654	190,843	179,906	193,259	205,638	204,725	234,517	213,278	183,070	137,200
Key Species										
American lobster	1,394	1,585	1,772	1,604	1,520	1,576	1,549	1,085	1,266	732
Atlantic surfclam	50,984	50,921	46,631	53,952	48,099	41,692	30,945	30,272	22,418	22,788
Blue crab	68,979	70,983	61,862	65,070	67,975	76,097	119,684	101,485	86,424	55,424
Eastern oyster	859	1,202	962	2,388	1,778	1,438	1,768	1,451	1,865	4,311
Menhaden	421,309	412,672	400,662	472,086	397,537	395,469	499,867	496,847	492,402	366,343
Quahog clam	3,537	3,735	3,568	4,115	5,246	3,255	3,686	2,345	3,689	4,586
Sea scallop	33,381	24,526	18,747	22,793	24,355	25,646	23,998	23,385	17,627	8,866
Squid	41,586	12,260	10,520	8,607	8,241	8,310	26,822	33,333	26,069	14,445
Striped Bass	3,927	5,706	4,741	5,477	5,693	5,852	5,621	5,461	5,571	4,709
Summer flounder	8,400	8,360	6,608	4,725	4,260	5,137	6,386	8,659	7,777	8,091

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.06	4.22	5.14	5.45	4.75	3.80	4.04	4.32	4.15	4.27
Atlantic surfclam	0.52	0.53	0.58	0.60	0.62	0.63	0.64	0.62	0.61	0.60
Blue crab	1.01	1.00	0.90	1.07	1.19	1.05	1.07	0.98	1.16	1.57
Eastern oyster	6.59	5.58	6.60	3.79	6.30	6.51	6.79	4.55	4.52	8.64
Menhaden	0.06	0.07	0.06	0.06	0.06	0.07	0.08	0.08	0.08	0.09
Quahog clam	5.63	5.56	5.67	5.74	6.83	7.07	7.84	8.53	6.87	7.83
Sea scallop	4.81	7.39	6.46	6.45	6.81	6.31	7.68	9.73	9.58	11.34
Squid	0.34	0.75	0.75	0.86	0.94	0.86	0.45	0.62	0.68	0.84
Striped Bass	1.94	1.99	2.10	2.01	1.87	1.96	2.03	2.32	2.62	4.20
Summer flounder	1.58	1.63	2.03	2.30	2.28	1.94	2.01	1.80	2.21	2.15

2013 Economic Impacts of the Mid-Atlantic Recreational Fishing Expenditures (thousands of dollars)

	Trips	Jobs	Sales	Income	Value Added
Delaware	765	875	83,017	34,261	53,102
Maryland	2,735	5,869	606,755	271,736	404,787
New Jersey	4,364	13,010	1,533,952	665,011	999,596
New York	3,873	3,835	406,531	185,212	274,574
Virginia	2,480	7,987	774,297	321,564	516,808

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	65,550	126,501
Private Boat	84,284	280,444
Shore	63,980	130,850
Total	213,814	537,793

Equipment	Durable Goods Expenditures
Fishing Tackle	668,728
Other Equipment	177,098
Boat Expenses	1,283,868
Vehicle Expenses	387,275
Second Home Expenses	130,994
Total Durable Expenditures	2,647,961

Total State Trip and Durable Equipment Expenditures	3,399,568

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	2,363	3,002	2,876	3,234	2,823	2,437	2,598	2,244	2,093	2,080
Non-Coastal	157	252	224	212	197	187	178	145	175	139
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	2,520	3,254	3,100	3,446	3,020	2,623	2,776	2,389	2,268	2,219

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	1,097	1,270	1,337	1,690	1,143	1,111	873	1,050	951	1,365
Private	11,245	11,899	11,862	12,371	11,566	9,708	9,366	8,512	7,676	6,851
Shore	6,243	7,667	7,370	8,125	8,005	6,196	6,346	6,413	5,805	6,000
Total Trips	18,584	20,836	20,569	22,186	20,714	17,015	16,585	15,976	14,432	14,216

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black seabass	H	1,317	996	1,117	1,302	926	1,335	1,317	532	1,134	786
	R	5,528	5,412	5,739	6,403	8,475	6,273	6,458	3,203	7,666	5,113
Bluefish	H	4,140	4,670	3,901	4,947	3,515	2,933	2,560	2,467	2,640	2,168
	R	6,305	6,641	5,699	8,011	7,211	4,457	3,936	4,242	4,269	2,463
Drum (Atlantic croaker)	H	10,402	10,494	9,251	8,583	9,978	7,308	6,019	3,993	4,788	6,581
	R	8,967	12,242	7,418	11,025	12,910	9,405	6,232	5,390	8,429	10,520
Drum (spot)	H	2,603	4,768	6,659	11,998	6,557	4,346	3,698	4,032	2,849	5,814
	R	1,305	4,755	2,885	3,940	4,490	2,238	2,575	2,610	2,642	5,802
Drum (weakfish)	H	418	1,105	553	332	372	38	15	8	157	49
	R	1,422	1,970	2,052	1,037	1,987	180	459	469	955	213
Porgies (scup)	H	1,950	992	2,006	1,699	1,543	1,637	2,736	770	714	1,242
	R	3,729	2,254	3,542	2,500	3,171	2,292	2,413	1,041	1,628	1,967
Striped bass	H	1,475	1,601	2,028	1,775	1,683	1,387	1,407	1,653	951	1,420
	R	9,580	8,033	9,227	7,730	4,787	3,802	3,467	3,781	3,410	4,737
Summer flounder	H	3,470	3,338	3,197	2,543	1,724	1,564	1,226	1,513	1,968	2,061
	R	15,124	20,358	14,547	16,577	18,433	21,371	21,400	18,466	13,317	12,161
Winter flounder	H	268	132	325	108	44	76	56	92	44	6
	R	65	221	190	43	32	138	102	126	36	33
Wrasses (tautog)	H	599	277	679	728	669	692	761	352	165	236
	R	1,372	858	2,007	2,202	1,979	1,911	2,317	1,531	1,110	1,219

[1] 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.

Tables | Delaware

2013 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	406	56,315	11,206	18,685	321	36,061	7,637	12,248
Commercial Harvesters	157	13,492	3,210	4,347	157	13,492	3,210	4,347
Seafood Processors & Dealers	31	5,547	976	1,876	30	5,224	919	1,767
Importers	62	17,174	2,752	5,235	0	0	0	0
Seafood Wholesalers & Distributors	30	4,014	1,526	1,819	20	2,639	1,003	1,196
Retail	125	16,088	2,741	5,406	114	14,707	2,504	4,938

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	5,419	6,113	5,692	7,931	6,900	7,543	7,845	7,091	7,897	7,422
Finfish & Other	1,258	1,273	1,330	1,300	1,100	1,068	1,074	1,328	1,241	1,794
Shellfish	4,161	4,840	4,361	6,631	5,801	6,475	6,772	5,763	6,657	5,627
Key Species										
American eel	169	100	275	292	190	134	206	274	159	244
Black sea bass	181	157	190	198	156	25	8	2	0	2
Blue crab	2,839	3,429	2,961	5,329	4,605	5,435	5,957	4,819	6,120	4,576
Eastern oyster	361	485	459	490	410	334	404	347	304	407
Quahog clam	175	220	NA	NA	NA	NA	NA	NA	NA	NA
Sea scallop	12	102	99	NA	256	173	NA	NA	NA	NA
Spot	38	98	7	57	40	49	50	67	12	64
Striped bass	497	494	380	300	403	327	400	410	470	766
Weakfish	61	82	32	31	18	5	4	2	50	16
Whelks	690	562	NA	NA	NA	NA	NA	NA	NA	NA

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	4,288	4,851	4,380	5,346	4,706	5,011	5,214	4,921	5,239	4,048
Finfish & Other	1,349	1,470	1,156	1,102	817	1,154	851	1,157	913	1,265
Shellfish	2,938	3,381	3,224	4,244	3,890	3,857	4,363	3,764	4,327	2,783
Key Species										
American eel	142	110	120	131	80	60	69	91	54	83
Black sea bass	84	73	87	73	61	6	3	4	0	4
Blue crab	2,276	2,924	2,856	3,799	3,508	3,414	4,110	3,502	4,201	2,488
Eastern oyster	79	84	75	80	67	67	71	62	52	71
Quahog clam	54	69	NA	NA	NA	NA	NA	NA	NA	NA
Sea scallop	2	13	16	NA	38	25	NA	NA	NA	NA
Spot	59	155	8	62	32	61	60	82	17	73
Striped bass	176	174	137	143	189	184	185	185	190	187
Weakfish	51	71	18	25	11	3	2	1	27	9
Whelks	491	276	NA	NA	NA	NA	NA	NA	NA	NA

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American eel	1.19	0.91	2.28	2.22	2.38	2.24	3.00	3.03	2.93	2.94
Black sea bass	2.17	2.15	2.18	2.73	2.57	4.31	2.62	0.50	0.85	0.50
Blue crab	1.25	1.17	1.04	1.40	1.31	1.59	1.45	1.38	1.46	1.84
Eastern oyster	4.57	5.76	6.10	6.14	6.09	4.97	5.67	5.56	5.90	5.71
Quahog clam	3.26	3.18	NA	NA	NA	NA	NA	NA	NA	NA
Sea scallop	5.18	8.08	6.27	NA	6.81	6.80	NA	NA	NA	NA
Spot	0.65	0.63	0.97	0.92	1.24	0.81	0.84	0.82	0.75	0.88
Striped bass	2.82	2.84	2.78	2.09	2.13	1.77	2.16	2.21	2.47	4.09
Weakfish	1.18	1.16	1.76	1.27	1.75	1.93	1.56	2.01	1.87	1.85
Whelks	1.41	2.04	NA	NA	NA	NA	NA	NA	NA	NA

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Delaware Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	76	7,501	3,019	4,237
	Private Boat	132	13,156	4,341	7,097
	Shore	198	17,202	5,954	9,724
Total Durable Expenditures		469	45,158	20,947	32,044
Total State Economic Impacts		875	83,017	34,261	53,102

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	3,313	1,580
Private Boat	5,363	7,953
Shore	8,216	7,170
Total	16,892	16,702

Equipment	Durable Goods Expenditures
Fishing Tackle	18,205
Other Equipment	6,870
Boat Expenses	16,703
Vehicle Expenses	14,462
Second Home Expenses	3,100
Total Durable Expenditures	59,340

Total State Trip and Durable Equipment Expenditures	92,934

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	116	120	137	150	134	114	128	129	111	82
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	243	191	205	224	182	173	165	190	151	97
Total Anglers	359	311	342	374	315	287	293	318	262	179

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	31	41	62	71	55	44	21	18	20	37
Private	654	553	595	721	528	487	408	511	481	349
Shore	389	431	427	459	444	379	391	397	374	378
Total Trips	1,074	1,025	1,084	1,251	1,028	911	819	926	875	765

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic mackerel	H	13	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	R	(1)	(1)	(1)	(1)	(1)	2	(1)	(1)	(1)	(1)
Black seabass	H	44	68	114	93	22	37	22	43	40	37
	R	277	276	328	584	464	293	232	211	205	249
Bluefish	H	126	128	97	154	69	98	32	46	35	24
	R	408	190	289	539	167	167	58	128	118	70
Drum (Atlantic croaker)	H	389	825	764	359	370	452	76	92	88	232
	R	598	675	937	672	602	537	229	88	447	770
Drum (weakfish)	H	5	19	11	4	4	6	(1)	(1)	5	7
	R	72	105	95	23	61	4	12	6	85	23
Striped bass	H	26	20	20	8	27	20	16	18	25	19
	R	156	251	248	248	261	145	65	110	110	84
Summer flounder	H	111	73	88	108	35	87	53	66	45	58
	R	737	795	445	1,072	604	964	618	616	253	238
White perch	H	63	36	69	34	40	64	187	112	70	119
	R	303	105	194	190	243	121	397	272	187	369
Wrasses (tautog)	H	71	61	111	100	102	120	57	45	47	39
	R	199	233	193	267	164	224	196	88	107	99
Yellowfin tuna	H	1	4	6	(1)	1	(1)	(1)	(1)	(1)	1
	R	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

[1] Data is not available because all Delaware residents are considered coastal county residents.
[2] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Delaware's State Economy (% of national total)[1,2]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[3]
2004	25,391 (0.3%)	391,682 (0.3%)	16.07 (0.4%)	22.79 (0.3%)	49.49 (0.4%)	ds
2012	23,861 (0.3%)	363,688 (0.3%)	18.32 (0.3%)	27.52 (0.3%)	60.65 (0.4%)	0.15
% change	-6.4	-7.7	12.2	17.2	18.4	NA

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	ds	3	3	ds	3	NA	ds	ds	ds
	Receipts	ds	64	214	ds	27	NA	ds	ds	ds
Seafood sales, retail	Firms	9	12	9	12	9	10	9	9	11
	Receipts	803	1,523	835	1,025	418	813	1,107	1,226	1,333

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	1	1	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
Seafood sales, wholesale	Establishments	2	3	3	3	6	7	7	7	7
	Employees	ds	ds	9	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	337	ds	ds	ds	ds	ds	ds
Seafood sales, retail	Establishments	16	14	17	19	18	16	15	18	16
	Employees	144	138	135	105	ds	50	47	49	ds
	Payroll	3,363	3,264	3,133	2,997	1,498	1,348	1,414	1,493	1,545

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[1,2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	3	3	3	3	2	2	1	0	0
	Employees	ds	ds	ds	ds	ds	ds	ds	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	NA	NA
Deep sea freight transportation	Establishments	1	1	0	0	4	4	5	2	1
	Employees	ds	ds	NA	NA	ds	ds	120	ds	ds
	Payroll	ds	ds	NA	NA	ds	ds	10,768	ds	ds
Deep sea passenger transportation	Establishments	0	1	0	0	0	0	1	0	0
	Employees	NA	ds	NA	NA	NA	NA	ds	NA	NA
	Payroll	NA	ds	NA	NA	NA	NA	ds	NA	NA
Marinas	Establishments	17	16	18	17	19	16	19	17	18
	Employees	ds	ds	ds	88	65	ds	65	ds	67
	Payroll	ds	ds	ds	2,540	1,738	1,877	2,342	3,106	1,963
Marine cargo handling	Establishments	5	4	4	3	3	3	3	3	2
	Employees	ds	ds	597	527	629	ds	434	511	ds
	Payroll	ds	ds	18,812	19,027	19,204	16,952	16,835	19,203	ds
Navigational services to shipping	Establishments	9	9	8	8	9	8	8	8	8
	Employees	ds	ds	75	76	79	85	76	78	ds
	Payroll	ds	ds	4,783	4,961	5,360	5,672	5,176	5,096	3,111
Port & harbor operations	Establishments	2	2	3	2	2	2	3	3	4
	Employees	ds	ds	ds	ds	ds	ds	29	44	ds
	Payroll	ds	ds	ds	ds	ds	ds	1,182	1,512	ds
Ship & boat building	Establishments	1	1	1	1	2	2	2	3	4
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	50
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	2,313

[1] ds = these data are suppressed.
[2] NA = not applicable.
[3] 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.

Tables | Maryland

2013 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	12,419	1,244,130	320,695	490,589	6,994	361,467	132,944	181,129
Commercial Harvesters	2,788	132,855	37,709	58,971	2,788	132,855	37,709	58,971
Seafood Processors & Dealers	1,397	122,716	47,821	61,065	635	55,550	21,647	27,643
Importers	2,494	685,951	109,937	209,108	0	0	0	0
Seafood Wholesalers & Distributors	609	79,271	26,946	35,779	201	26,115	8,877	11,787
Retail	5,132	223,338	98,281	125,665	3,370	146,947	64,711	82,728

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	49,200	63,754	53,597	65,329	73,196	75,893	104,882	77,987	77,859	75,862
Finfish & Other	4,670	10,766	9,844	12,170	11,090	11,615	13,161	13,607	15,271	17,183
Shellfish	44,530	52,988	43,753	53,158	62,106	64,278	91,721	64,381	62,587	58,679
Key Species										
Atlantic croaker	751	543	359	335	442	415	509	469	655	450
Black sea bass	573	724	118	454	445	451	590	508	421	703
Blue crab	39,104	39,962	31,141	41,690	50,115	52,049	79,805	59,193	59,369	49,956
Clams or bivalves	4,654	4,784	4,889	5,074	5,436	4,403	5,400	3,921	2,254	362
Eastern oyster	181	3,435	1,238	3,146	2,277	3,849	4,361	NA	NA	7,357
Menhaden	232	1,514	650	1,379	915	884	755	714	1,654	861
Sea scallop	417	4,549	6,201	2,809	3,758	3,160	1,188	551	202	8
Striped bass	1,549	4,259	4,591	5,333	5,232	5,180	5,531	5,610	6,898	9,931
Summer flounder	444	677	550	546	578	551	546	463	350	519
White perch	347	848	569	619	776	942	1,158	1,482	1,319	1,029

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	49,509	67,489	51,212	61,585	63,534	66,819	102,916	77,555	73,415	43,932
Finfish & Other	8,055	25,000	12,564	21,618	18,626	19,968	27,885	21,292	26,875	16,890
Shellfish	41,454	42,489	38,648	39,967	44,908	46,850	75,031	56,263	46,540	27,042
Key Species										
Atlantic croaker	1,801	1,389	738	576	778	550	622	784	1,026	855
Black sea bass	284	337	43	171	159	126	203	183	141	220
Blue crab	33,826	34,914	29,446	30,778	34,872	38,801	66,661	50,027	42,690	24,179
Clams or bivalves	7,270	6,112	7,756	7,947	8,600	6,292	6,971	5,374	2,961	609
Eastern oyster	43	738	274	317	249	498	430	NA	NA	788
Menhaden	3,336	15,806	5,192	13,751	9,615	9,419	15,756	8,366	16,326	7,298
Sea scallop	94	591	931	450	569	521	153	58	20	1
Striped bass	885	2,349	2,485	2,640	2,655	2,812	2,549	2,344	2,524	2,018
Summer flounder	262	338	248	229	208	214	263	259	148	178
White perch	453	1,524	688	973	858	1,301	1,704	2,041	1,833	1,244

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic croaker	0.42	0.39	0.49	0.58	0.57	0.75	0.82	0.60	0.64	0.53
Black sea bass	2.02	2.15	2.73	2.66	2.79	3.59	2.90	2.78	2.99	3.20
Blue crab	1.16	1.14	1.06	1.35	1.44	1.34	1.20	1.18	1.39	2.07
Clams or bivalves	0.64	0.78	0.63	0.64	0.63	0.70	0.77	0.73	0.76	0.59
Eastern oyster	4.23	4.66	4.52	9.92	9.13	7.73	10.14	NA	NA	9.34
Menhaden	0.07	0.10	0.13	0.10	0.10	0.09	0.05	0.09	0.10	0.12
Sea scallop	4.44	7.70	6.66	6.25	6.60	6.06	7.77	9.53	10.23	12.27
Striped bass	1.75	1.81	1.85	2.02	1.97	1.84	2.17	2.39	2.73	4.92
Summer flounder	1.69	2.01	2.22	2.39	2.78	2.58	2.07	1.79	2.36	2.92
White perch	0.77	0.56	0.83	0.64	0.90	0.72	0.68	0.73	0.72	0.83

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Maryland Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	587	53,491	23,654	33,036
	Private Boat	562	57,769	22,800	35,481
	Shore	562	53,813	20,632	33,181
Total Durable Expenditures		4,158	441,682	204,650	303,089
Total State Economic Impacts		5,869	606,755	271,736	404,787

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-residents	Residents	Fishing Tackle	99,746
For-Hire	24,696	11,252	Other Equipment	25,013
Private Boat	16,892	47,154	Boat Expenses	416,610
Shore	16,388	30,610	Vehicle Expenses	105,358
Total	57,976	89,016	Second Home Expenses	900
			Total Durable Expenditures	647,627
Total State Trip and Durable Equipment Expenditures				794,619

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	442	620	733	850	643	514	552	415	374	404
Non-Coastal	39	49	84	78	50	43	54	49	40	36
Out-of-State	333	425	447	528	507	327	462	372	258	329
Total Anglers	815	1,095	1,264	1,456	1,200	884	1,068	836	672	769

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	175	213	239	270	194	203	139	161	151	154
Private	1,535	1,924	1,836	2,352	1,891	1,608	1,643	1,453	1,281	1,576
Shore	875	1,019	1,145	1,082	1,273	1,082	1,150	1,206	817	1,005
Total Trips	2,585	3,157	3,220	3,704	3,358	2,893	2,932	2,819	2,249	2,735

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black seabass	H	16	91	121	39	27	33	36	47	33	30
	R	259	562	645	577	674	454	670	353	289	350
Bluefish	H	367	167	421	675	551	591	273	259	114	54
	R	593	236	778	1,172	1,631	671	162	409	139	258
Drum (Atlantic croaker)	H	896	784	755	873	620	1,335	1,137	554	979	1,139
	R	854	1,137	1,784	1,258	2,127	1,138	1,011	366	1,731	2,937
Drum (spot)	H	868	1,789	2,896	3,615	1,892	2,064	1,164	913	766	936
	R	383	2,136	1,355	1,619	1,738	632	1,155	296	920	2,622
Drum (weakfish)	H	15	32	1	7	2	4	5	(1)	11	2
	R	231	61	47	63	38	8	163	18	25	10
Striped bass	H	369	534	669	765	415	502	457	445	262	478
	R	3,479	3,855	3,711	3,065	1,339	1,424	1,509	1,127	2,207	2,387
Summer flounder	H	42	117	37	103	58	65	26	15	22	53
	R	806	362	252	1,018	923	816	1,226	472	214	279
White perch	H	1,623	2,410	2,561	2,890	1,511	551	2,613	1,572	1,534	2,258
	R	3,459	5,837	3,953	5,424	3,853	1,137	2,891	2,348	4,143	6,295
Wrasses (tautog)	H	8	29	15	43	19	39	57	12	6	4
	R	24	148	186	178	151	133	361	75	110	53
Yellowfin tuna	H	2	6	8	4	(1)	5	1	(1)	(1)	2
	R	(1)	(1)	(1)	(1)	(1)	2	(1)	(1)	(1)	4

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Maryland's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	136,062 (1.8%)	2,151,474 (1.9%)	84.35 (2%)	141.86 (2.1%)	248.00 (2%)	0.74
2012	134,305 (1.8%)	2,152,458 (1.9%)	105.89 (2%)	186.24 (2.2%)	336.48 (2.1%)	0.46
% change	-1.3	0	20.3	23.8	26.3	-60.9

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	51	57	55	56	56	42	43	55	67
	Receipts	2,301	2,727	2,751	3,940	3,310	2,268	2,138	2,374	3,030
Seafood sales, retail	Firms	70	78	73	99	84	94	85	86	96
	Receipts	10,100	6,976	7,755	10,493	9,010	8,819	6,177	7,396	6,454

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	23	23	19	22	22	19	18	17	16
	Employees	895	1,141	1,053	1,296	1,003	245	273	264	266
	Payroll	23,039	24,986	28,852	32,386	39,328	13,049	12,652	12,773	13,587
Seafood sales, wholesale	Establishments	58	59	59	62	60	61	63	57	60
	Employees	733	709	694	978	851	777	795	775	724
	Payroll	29,813	30,148	32,943	50,353	42,296	39,055	39,067	38,971	34,194
Seafood sales, retail	Establishments	96	95	97	102	94	87	87	88	87
	Employees	579	576	617	613	590	485	526	562	575
	Payroll	12,328	13,019	14,190	14,777	11,510	11,499	11,810	12,883	13,027

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	11	10	10	8	6	7	8	6	4
	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	15	16	14	14	13	15	15	16	14
	Employees	281	316	ds	244	250	255	390	329	245
	Payroll	18,983	14,131	ds	14,905	19,765	20,722	24,185	25,071	17,938
Deep sea passenger transportation	Establishments	2	1	1	1	3	2	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	183	185	179	183	179	176	175	172	159
	Employees	1,321	1,228	1,260	1,326	1,383	1,289	1,275	1,294	1,276
	Payroll	36,598	36,590	40,866	48,752	45,965	45,483	43,508	43,330	43,531
Marine cargo handling	Establishments	11	12	13	15	15	16	17	17	6
	Employees	1,725	1,639	1,659	1,791	1,572	1,599	2,742	1,924	ds
	Payroll	75,911	81,219	73,367	85,328	48,382	46,727	95,182	86,680	ds
Navigational services to shipping	Establishments	8	9	9	8	9	11	10	11	10
	Employees	ds	ds	ds	157	92	77	84	84	ds
	Payroll	ds	ds	ds	4,882	3,968	3,807	4,015	4,259	ds
Port & harbor operations	Establishments	10	11	11	8	3	4	5	5	22
	Employees	479	ds	ds	323	ds	ds	ds	ds	1,875
	Payroll	19,218	ds	ds	13,427	ds	ds	ds	ds	93,001
Ship & boat building	Establishments	58	57	55	48	46	38	35	35	34
	Employees	1,022	ds	1,119	874	677	416	ds	633	378
	Payroll	35,364	ds	33,463	29,500	22,363	16,238	ds	36,675	14,619

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Tables | New Jersey

2013 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	41,319	6,397,514	1,421,131	2,313,158	6,385	504,586	167,686	240,751
Commercial Harvesters	2,274	263,117	69,125	112,119	2,274	263,117	69,125	112,119
Seafood Processors & Dealers	5,825	538,313	203,870	266,091	583	53,511	20,266	26,451
Importers	16,387	4,507,610	722,430	1,374,117	0	0	0	0
Seafood Wholesalers & Distributors	2,544	401,532	129,052	175,486	168	26,473	8,508	11,570
Retail	14,290	686,941	296,653	385,345	3,362	161,485	69,787	90,612

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	145,217	158,746	146,346	151,509	168,508	151,539	178,575	220,365	187,732	132,905
Finfish & Other	21,369	22,585	33,683	24,234	19,936	24,074	23,031	26,796	28,638	25,791
Shellfish	123,847	136,161	112,663	127,275	148,572	127,465	155,544	193,570	159,094	107,114
Key Species										
American lobster	1,800	2,001	2,522	4,056	3,215	2,278	2,895	3,039	3,937	2,796
Atlantic herring	1	1	3,297	562	548	1,507	422	415	150	401
Atlantic mackerel	3,398	3,957	9,324	668	1,568	1,539	848	53	589	18
Blue crab	5,330	6,773	6,359	5,471	7,284	184	12,034	9,423	10,036	8,111
Eastern oyster	1,558	823	2,255	NA	2,547	NA	NA	NA	NA	NA
Goosefish	3,446	4,451	4,501	4,486	4,005	3,018	2,752	3,654	3,302	2,463
Ocean quahog & surfclams	31,379	25,567	25,107	26,547	30,838	27,496	23,889	25,301	25,453	22,962
Quahog clam	7,409	7,556	7,615	968	6,254	NA	NA	NA	NA	NA
Sea scallop	67,309	88,486	58,538	77,359	91,317	90,150	109,118	142,505	110,560	65,331
Summer flounder	4,134	4,478	5,091	3,988	3,461	3,376	4,552	5,461	5,434	4,877

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	187,377	156,695	175,777	153,848	162,308	162,029	162,162	187,535	180,502	120,014
Finfish & Other	71,450	74,193	89,298	65,166	62,821	73,623	74,882	94,674	104,172	61,828
Shellfish	115,926	82,502	86,478	88,683	99,487	88,406	87,281	92,861	76,330	58,186
Key Species										
American lobster	370	369	471	680	633	585	689	687	919	660
Atlantic herring	5	1	25,486	6,038	6,539	13,692	4,140	2,385	1,114	2,344
Atlantic mackerel	36,091	32,414	24,977	5,384	9,426	10,255	4,692	107	2,017	46
Blue crab	4,350	6,333	5,981	4,636	5,816	257	9,459	9,600	7,393	4,391
Eastern oyster	323	162	343	NA	550	NA	NA	NA	NA	NA
Goosefish	4,177	3,881	3,842	4,231	3,698	2,692	2,024	2,274	2,212	2,238
Ocean quahog & surfclams	61,155	49,849	43,644	44,791	51,597	45,306	38,538	41,281	38,921	35,960
Quahog clam	1,796	1,852	1,844	240	1,516	NA	NA	NA	NA	NA
Sea scallop	13,705	11,831	8,457	11,808	13,282	14,045	14,171	14,545	11,379	5,652
Summer flounder	2,630	2,349	2,380	1,697	1,541	1,799	2,165	2,831	2,269	1,996

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	4.86	5.42	5.36	5.96	5.08	3.89	4.20	4.42	4.28	4.23
Atlantic herring	0.23	0.78	0.13	0.09	0.08	0.11	0.10	0.17	0.13	0.17
Atlantic mackerel	0.09	0.12	0.37	0.12	0.17	0.15	0.18	0.50	0.29	0.40
Blue crab	1.23	1.07	1.06	1.18	1.25	0.72	1.27	0.98	1.36	1.85
Eastern oyster	4.82	5.09	6.57	NA	4.63	NA	NA	NA	NA	NA
Goosefish	0.83	1.15	1.17	1.06	1.08	1.12	1.36	1.61	1.49	1.10
Ocean quahog & surfclams	0.51	0.51	0.58	0.59	0.60	0.61	0.62	0.61	0.65	0.64
Quahog clam	4.13	4.08	4.13	4.04	4.12	NA	NA	NA	NA	NA
Sea scallop	4.91	7.48	6.92	6.55	6.88	6.42	7.70	9.80	9.72	11.56
Summer flounder	1.57	1.91	2.14	2.35	2.25	1.88	2.10	1.93	2.39	2.44

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of New Jersey Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	889	102,472	47,695	63,795
	Private Boat	1,162	143,422	56,866	88,950
	Shore	697	78,748	31,993	49,781
Total Durable Expenditures		10,262	1,209,310	528,457	797,070
Total State Economic Impacts		13,010	1,533,952	665,011	999,596

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	24,431	36,096
Private Boat	40,538	79,180
Shore	17,192	44,571
Total	82,161	159,846

Equipment	Durable Goods Expenditures
Fishing Tackle	273,703
Other Equipment	52,186
Boat Expenses	439,813
Vehicle Expenses	204,163
Second Home Expenses	126,520
Total Durable Expenditures	1,096,383

Total State Trip and Durable Equipment Expenditures	1,338,390

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	708	818	693	890	765	656	776	687	662	581
Non-Coastal	31	39	25	19	26	35	36	23	27	20
Out-of-State	379	471	481	518	456	454	449	357	431	330
Total Anglers	1,117	1,328	1,199	1,427	1,246	1,145	1,261	1,067	1,121	931

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	432	452	633	605	449	434	320	383	369	550
Private	3,895	3,753	3,721	3,614	3,595	2,671	3,265	2,446	2,580	1,914
Shore	2,121	2,357	2,682	2,979	2,857	2,234	2,278	2,334	2,072	1,900
Total Trips	6,448	6,562	7,036	7,198	6,901	5,339	5,863	5,163	5,020	4,364

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black seabass	H	1,078	660	531	724	580	583	687	149	735	345
	R	3,121	2,387	2,082	2,422	4,432	3,138	3,869	1,303	3,817	2,548
Bluefin tuna	H	8	9	4	7	3	14	6	2	1	9
	R	61	24	98	1	1	2	7	6	(1)	(1)
Bluefish	H	1,531	2,368	1,183	1,654	1,028	814	909	1,149	1,190	792
	R	2,226	2,293	1,803	2,736	1,477	1,476	1,886	1,910	1,996	883
Drum (weakfish)	H	229	1,008	490	230	298	12	2	3	115	30
	R	535	1,372	1,336	612	1,436	79	102	99	732	93
Red hake	H	4	6	141	1	152	240	125	206	57	82
	R	4	2	12	(1)	20	23	24	13	16	55
Striped bass	H	424	412	509	290	310	283	320	393	168	346
	R	1,502	1,219	1,890	1,789	1,310	800	690	884	406	1,108
Summer flounder	H	1,617	1,300	1,556	1,068	762	825	552	737	1,131	1,244
	R	6,702	8,939	6,740	6,192	8,959	10,414	10,565	8,096	6,981	6,461
Winter flounder	H	40	33	64	96	3	7	24	28	(1)	5
	R	32	21	113	27	15	26	39	25	2	30
Wrasses (tautog)	H	91	43	201	300	172	127	375	137	38	111
	R	387	224	604	1,290	901	856	1,063	843	510	462
Yellowfin tuna	H	9	22	35	58	7	7	25	17	69	75
	R	8	1	(1)	(1)	1	16	(1)	(1)	9	4

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

New Jersey's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	240,539 (3.3%)	3,609,640 (3.1%)	160.24 (3.8%)	237.35 (3.5%)	422.91 (3.5%)	1
2012	228,289 (3.1%)	3,440,470 (3%)	189.91 (3.5%)	283.82 (3.3%)	528.79 (3.3%)	1
% change	-5.4	-4.9	15.6	16.4	20	0

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	23	26	27	25	22	33	47	29	35
	Receipts	2,694	3,086	3,027	2,399	1,851	3,670	3,613	3,447	3,565
Seafood sales, retail	Firms	89	93	72	90	92	86	66	68	77
	Receipts	9,219	9,194	8,916	11,320	11,196	11,131	8,265	8,049	8,972

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	15	17	16	16	14	13	11	12	11
	Employees	749	969	667	628	566	661	482	518	404
	Payroll	21,029	28,235	22,097	18,403	18,703	22,025	17,427	17,940	13,747
Seafood sales, wholesale	Establishments	85	85	89	101	81	83	90	91	82
	Employees	948	914	941	978	856	858	848	935	1,058
	Payroll	38,066	37,828	41,506	41,994	37,462	37,348	38,065	40,103	44,033
Seafood sales, retail	Establishments	134	128	127	124	118	106	108	109	114
	Employees	547	524	493	472	368	332	332	332	382
	Payroll	11,952	11,787	11,373	10,352	9,372	9,126	9,094	9,264	11,561

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	17	18	18	23	18	19	18	20	16
	Employees	ds	914	1,040	778	645	594	600	508	402
	Payroll	ds	54,097	68,096	56,017	48,911	41,925	44,246	40,587	32,007
Deep sea freight transportation	Establishments	33	38	39	31	27	26	26	26	25
	Employees	1,028	948	648	566	1,115	1,045	ds	ds	390
	Payroll	65,691	68,633	45,940	44,133	75,848	66,547	78,898	81,936	27,481
Deep sea passenger transportation	Establishments	4	5	4	2	2	3	2	2	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	201	206	204	216	211	214	212	206	210
	Employees	945	978	940	1,045	916	784	781	773	811
	Payroll	36,862	38,323	39,154	41,624	39,596	35,811	35,475	34,675	35,760
Marine cargo handling	Establishments	26	26	25	23	21	22	21	22	15
	Employees	4,685	4,972	4,599	4,781	4,244	3,479	3,292	3,744	2,582
	Payroll	340,085	363,714	345,784	350,690	278,189	230,886	260,894	273,636	203,148
Navigational services to shipping	Establishments	17	16	19	26	20	19	16	17	18
	Employees	ds	169	ds	227	191	133	75	110	96
	Payroll	ds	9,673	ds	11,403	7,776	6,638	6,125	5,619	5,983
Port & harbor operations	Establishments	6	7	6	8	6	6	11	7	25
	Employees	ds	194	ds	271	143	54	124	163	ds
	Payroll	ds	11,599	ds	12,197	12,446	5,548	10,463	16,933	139,276
Ship & boat building	Establishments	35	37	34	31	30	25	24	23	21
	Employees	2,040	2,320	2,307	2,305	2,019	1,188	1,056	864	901
	Payroll	80,301	89,421	88,367	91,460	79,309	42,909	37,920	39,810	36,334

[1] 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.
[2] ds = these data are suppressed.

Tables | New York

2013 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	48,732	5,809,415	1,247,120	2,060,194	4,471	203,691	70,774	98,996
Commercial Harvesters	2,092	99,462	28,592	43,971	2,092	99,462	28,592	43,971
Seafood Processors & Dealers	1,033	148,089	56,305	73,238	157	22,338	8,493	11,048
Importers	16,079	4,422,908	708,855	1,348,296	0	0	0	0
Seafood Wholesalers & Distributors	4,826	344,757	116,550	157,148	154	11,010	3,722	5,019
Retail	24,702	794,199	336,817	437,542	2,068	70,881	29,966	38,958

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	46,878	56,367	58,479	60,314	57,429	48,856	49,563	48,400	54.695	56,978
Finfish & Other	16,765	18,317	19,894	20,434	18,824	17,571	20,546	22,402	23,824	23,415
Shellfish	30,113	38,051	38,585	39,880	38,606	31,285	29,017	15,129	15,312	33,563
Key Species										
American lobster	3,722	4,396	6,288	4,623	3,821	3,468	3,165	1,398	976	938
Atlantic surfclam	4,475	7,055	2,135	5,932	5,670	5,858	3,929	545	NA	2,410
Eastern oyster	3,367	1,961	2,390	2,627	2,870	1,428	2,046	NA	2	4,149
Summer flounder	3,275	3,797	3,409	3,131	2,933	3,087	3,550	3,732	3,652	3,232
Loligo squid	5,426	6,054	5,844	5,157	5,290	4,167	4,516	7,250	8,648	5,976
Quahog clam	10,673	12,696	12,237	14,224	13,185	8,397	7,774	NA	0	13,475
Scups or porgies	1,637	2,027	2,450	2,348	1,710	1,887	2,112	2,551	3,536	2,970
Sea scallop	720	3,617	3,519	3,872	5,050	5,018	3,778	4,960	4,083	2,602
Softshell clam	1,227	1,468	2,055	1,628	1,076	700	709	NA	1	848
Tilefishes	2,082	2,765	3,325	3,843	3,343	3,262	4,077	4,525	4,257	4,676

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	34,514	38,150	33,287	35,785	34,175	34,304	33,371	27,030	30,029	32,953
Finfish & Other	16,531	14,631	14,225	16,492	15,084	16,194	18,595	18,805	19,296	18,566
Shellfish	17,983	23,519	19,062	19,293	19,092	18,110	14,777	8,225	10,733	14,387
Key Species										
American lobster	996	1,154	1,243	912	850	932	814	344	270	NA
Atlantic surfclam	7,462	11,953	2,987	9,161	8,753	8,799	5,856	809	NA	3,452
Eastern oyster	370	219	269	124	135	64	81	NA	0	204
Summer flounder	1,594	1,799	1,220	942	856	1,142	1,364	1,517	1,237	1,052
Loligo squid	6,363	6,693	6,460	5,437	5,469	4,098	3,900	5,630	7,838	4,828
Quahog clam	1,346	1,617	1,650	1,592	1,476	1,410	1,216	NA	0	1,932
Scups or porgies	1,907	2,186	2,416	2,325	1,214	1,850	2,690	3,729	4,307	4,578
Sea scallop	170	647	1,040	619	782	918	508	522	430	256
Softshell clam	234	270	393	198	131	114	116	NA	0	138
Tilefishes	1,335	1,142	1,298	1,393	1,199	1,435	1,586	1,521	1,412	1,468

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
American lobster	3.74	3.81	5.06	5.07	4.49	3.72	3.89	4.06	3.62	NA
Atlantic surfclam	0.60	0.59	0.71	0.65	0.65	0.67	0.67	0.67	NA	0.70
Eastern oyster	9.10	8.97	8.87	21.21	21.21	22.23	25.41	NA	25.43	20.32
Summer flounder	2.05	2.11	2.80	3.33	3.43	2.70	2.60	2.46	2.95	3.07
Loligo squid	0.85	0.90	0.90	0.95	0.97	1.02	1.16	1.29	1.10	1.24
Quahog clam	7.93	7.85	7.42	8.94	8.93	5.96	6.39	NA	0.00	6.97
Scups or porgies	0.86	0.93	1.01	1.01	1.41	1.02	0.79	0.68	0.82	0.65
Sea scallop	4.24	5.59	3.38	6.25	6.46	5.47	7.44	9.50	9.50	10.18
Softshell clam	5.24	5.43	5.23	8.23	8.24	6.13	6.13	NA	6.69	6.13
Tilefishes	1.56	2.42	2.56	2.76	2.79	2.27	2.57	2.97	3.02	3.18

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of New York Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	1,156	136,426	69,043	88,710
	Private Boat	740	78,864	32,041	51,602
	Shore	340	30,280	12,422	19,290
Total Durable Expenditures		1,599	160,961	71,706	114,972
Total State Economic Impacts		3,835	406,531	185,212	274,574

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	9,002	73,982
Private Boat	2,258	86,254
Shore	2,075	27,153
Total	13,335	187,389

Equipment	Durable Goods Expenditures
Fishing Tackle	55,621
Other Equipment	25,044
Boat Expenses	58,122
Vehicle Expenses	12,492
Second Home Expenses	0
Total Durable Expenditures	151,279

Total State Trip and Durable Equipment Expenditures	352,003

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	587	885	735	881	817	638	646	497	533	595
Non-Coastal	18	27	25	39	32	21	24	18	30	8
Out-of-State	76	110	114	147	118	58	69	46	53	93
Total Anglers	681	1,022	874	1,067	967	717	740	561	616	695

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	389	527	361	684	388	381	348	458	366	565
Private	2,670	3,107	3,120	3,315	3,199	2,819	2,351	2,320	1,908	1,711
Shore	1,754	2,495	1,961	2,522	2,341	1,625	1,675	1,389	1,492	1,597
Total Trips	4,813	6,129	5,442	6,521	5,928	4,824	4,374	4,168	3,766	3,873

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic herring[2]	H	123	60	23	214	70	3	79	75	174	222
	R	2	2	2	230	50	(1)	17	(1)	(1)	59
Black seabass	H	134	143	269	410	259	566	543	275	322	353
	R	626	1,071	1,326	1,550	1,654	1,236	1,163	893	2,471	1,372
Bluefish	H	1,895	1,684	1,832	2,150	1,484	1,294	1,026	928	1,150	1,108
	R	2,529	3,380	2,379	2,650	3,225	1,793	1,472	1,599	1,809	1,030
Drum (weakfish)	H	11	(1)	10	4	40	(1)	3	(1)	5	7
	R	38	76	17	109	25	3	3	55	12	6
Porgies (scup)	H	1,877	859	1,678	1,596	1,451	1,460	1,991	715	592	1,096
	R	3,514	1,737	2,622	1,964	2,838	2,124	1,864	998	1,235	1,865
Shortfin mako shark	H	(1)	(1)	(1)	(1)	(1)	(1)	1	(1)	1	-1
	R	2	5	(1)	(1)	(1)	(1)	(1)	3	3	1
Striped bass	H	263	378	368	475	685	357	539	676	424	491
	R	2,708	1,412	1,723	1,678	1,347	1,074	1,069	1,506	586	989
Summer flounder	H	1,024	1,163	753	867	608	298	335	376	509	518
	R	3,183	7,753	4,946	5,272	5,521	5,564	6,571	7,296	5,013	4,667
Winter flounder	H	228	100	261	11	41	69	31	65	44	1
	R	34	200	76	14	17	110	63	101	33	3
Wrasses (tautog)	H	279	85	246	223	320	346	146	111	61	77
	R	640	177	823	386	728	665	567	487	365	590

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.
[2] 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[1]
2004	511,440 (6.9%)	7,433,686 (6.5%)	353.25 (8.3%)	530.06 (7.9%)	959.16 (7.9%)	0.21
2012	527,001 (7.1%)	7,556,521 (6.5%)	451.85 (8.4%)	691.09 (8%)	1,280.74 (7.9%)	0.13
% change	3	1.6	21.8	23.3	25.1	-61.5

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	49	57	61	68	73	101	115	142	133
	Receipts	3,517	2,652	3,044	3,516	3,383	4,896	6,784	7,380	8,279
Seafood sales, retail	Firms	241	219	206	266	247	196	214	183	205
	Receipts	28,640	24,987	24,790	23,157	23,983	19,753	18,999	16,286	16,714

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	17	18	15	15	17	15	15	18	17
	Employees	323	324	298	294	379	ds	272	299	265
	Payroll	14,782	14,810	16,491	18,723	18,570	15,227	16,976	21,372	25,666
Seafood sales, wholesale	Establishments	274	269	254	291	231	246	263	291	243
	Employees	2,091	2,003	2,066	2,058	1,627	1,741	1,798	1,876	1,839
	Payroll	75,411	76,177	78,198	84,361	72,233	68,345	72,442	76,970	78,324
Seafood sales, retail	Establishments	386	392	388	372	368	386	394	391	385
	Employees	1,602	1,513	1,495	1,575	1,470	1,509	1,586	1,660	1,674
	Payroll	26,489	25,665	26,701	28,497	30,741	31,640	32,001	35,664	38,721

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	60	57	55	50	50	48	65	62	42
	Employees	1,452	1,448	1,464	1,746	1,759	2,299	1,654	1,708	ds
	Payroll	94,074	91,347	109,315	125,570	160,735	198,352	136,577	154,087	ds
Deep sea freight transportation	Establishments	36	39	38	34	29	32	30	31	23
	Employees	600	602	ds	ds	732	782	704	752	214
	Payroll	38,246	39,309	ds	65,632	108,744	89,313	98,499	88,354	31,229
Deep sea passenger transportation	Establishments	7	6	4	4	3	4	2	1	2
	Employees	ds	ds	ds	7	ds	8	ds	ds	ds
	Payroll	ds	ds	ds	240	316	126	ds	ds	ds
Marinas	Establishments	413	416	404	411	419	418	429	431	415
	Employees	2,185	2,093	2,112	2,070	2,263	2,099	2,052	2,033	1,868
	Payroll	81,737	84,832	83,807	88,862	100,910	96,640	94,654	96,408	87,124
Marine cargo handling	Establishments	14	12	12	12	10	9	13	12	6
	Employees	1,099	ds	ds	ds	ds	ds	1,086	1,019	ds
	Payroll	48,529	ds	ds	ds	ds	ds	68,555	66,439	ds
Navigational services to shipping	Establishments	34	35	36	36	32	37	37	35	53
	Employees	ds	ds	ds	578	386	312	598	596	712
	Payroll	ds	ds	ds	40,976	23,294	19,126	50,119	54,406	63,334
Port & harbor operations	Establishments	3	3	3	5	3	4	8	9	18
	Employees	ds	ds	6	ds	ds	ds	ds	33	1,294
	Payroll	ds	ds	119	ds	ds	ds	568	1,493	105,325
Ship & boat building	Establishments	45	47	48	53	49	47	41	43	49
	Employees	ds	590	ds	643	688	585	575	552	560
	Payroll	ds	21,514	ds	26,653	30,462	28,880	26,771	25,998	24,599

[1] 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.
[2] ds = these data are suppressed.

Tables | Virginia

2013 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	16,162	1,148,669	364,656	522,944	13,992	772,393	289,524	394,838
Commercial Harvesters	4,156	280,728	84,546	129,194	4,156	280,728	84,546	129,194
Seafood Processors & Dealers	1,426	123,921	48,214	62,225	1,379	119,809	46,615	60,161
Importers	1,143	314,344	50,380	95,826	0	0	0	0
Seafood Wholesalers & Distributors	691	82,970	28,683	38,227	469	56,336	19,475	25,956
Retail	8,745	346,705	152,833	197,471	7,988	315,518	138,888	179,527

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	160,496	155,066	110,066	138,149	146,602	152,017	183,181	191,025	175,640	163,293
Finfish & Other	43,522	48,559	41,637	45,735	40,506	47,575	55,915	58,190	61,538	57,266
Shellfish	116,973	106,507	68,430	92,414	106,096	104,442	127,267	132,835	114,102	106,027
Key Species										
Atlantic croaker	3,013	3,691	4,326	4,445	5,269	6,940	6,025	4,527	7,518	6,247
Black sea bass	1,167	1,242	1,048	663	759	569	928	1,003	1,401	1,710
Blue crab	21,822	20,578	14,057	15,793	18,013	21,169	29,133	25,116	24,644	23,991
Catfishes & bullheads	649	900	1,570	978	1,191	1,567	670	904	490	645
Goosefish	599	1,142	685	781	951	631	594	752	1,218	922
Menhaden	24,144	25,259	22,306	25,317	21,271	23,578	34,476	32,977	31,104	25,343
Sea Scallop	92,207	84,574	52,764	63,013	65,534	63,312	70,204	79,427	54,076	32,610
Spot	2,236	2,227	1,793	3,232	1,171	3,411	975	3,214	749	2,406
Striped bass	3,648	4,457	2,946	3,831	3,378	4,219	3,635	4,496	5,551	5,702
Summer flounder	5,376	4,652	4,373	3,184	2,719	2,959	4,202	5,920	7,723	8,736

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	481,374	441,538	426,229	493,415	423,066	426,798	510,474	494,050	461,944	381,723
Finfish & Other	432,023	402,586	393,735	452,342	384,804	379,296	457,408	441,884	416,804	346,922
Shellfish	49,351	38,952	32,494	41,073	38,262	47,502	53,066	52,166	45,140	34,802
Key Species										
Atlantic croaker	9,488	9,272	7,829	10,588	11,214	8,576	7,873	5,535	6,887	6,325
Black sea bass	498	475	328	189	215	164	264	275	392	496
Blue crab	27,642	26,064	22,708	25,141	23,243	32,756	38,490	37,862	32,020	24,258
Catfishes & bullheads	1,922	1,622	1,360	1,598	1,770	1,877	871	905	766	1,140
Goosefish	1,002	1,157	677	847	972	743	596	604	907	847
Menhaden	399,798	372,578	370,946	420,481	353,895	351,392	433,241	413,835	390,284	317,950
Sea Scallop	19,410	11,444	8,302	9,916	9,685	10,137	9,167	8,260	5,798	2,958
Spot	4,338	3,103	1,696	4,328	1,977	3,910	1,024	3,540	596	2,085
Striped bass	2,120	2,472	1,431	1,962	2,196	2,109	2,139	2,077	2,173	1,680
Summer flounder	3,906	3,869	2,757	1,856	1,654	1,980	2,592	4,051	4,121	4,864

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic croaker	0.32	0.40	0.55	0.42	0.47	0.81	0.77	0.82	1.09	0.99
Black sea bass	2.34	2.61	3.19	3.50	3.52	3.46	3.52	3.65	3.57	3.45
Blue crab	0.79	0.79	0.62	0.63	0.77	0.65	0.76	0.66	0.77	0.99
Catfishes & bullheads	0.34	0.55	1.15	0.61	0.67	0.83	0.77	1.00	0.64	0.57
Goosefish	0.60	0.99	1.01	0.92	0.98	0.85	1.00	1.25	1.34	1.09
Menhaden	0.06	0.07	0.06	0.06	0.06	0.07	0.08	0.08	0.08	0.08
Sea Scallop	4.75	7.39	6.36	6.35	6.77	6.25	7.66	9.62	9.33	11.02
Spot	0.52	0.72	1.06	0.75	0.59	0.87	0.95	0.91	1.26	1.15
Striped bass	1.72	1.80	2.06	1.95	1.54	2.00	1.70	2.16	2.56	3.39
Summer flounder	1.38	1.20	1.59	1.72	1.64	1.49	1.62	1.46	1.87	1.80

2013 Economic Impacts of Virginia Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	118	11,487	4,589	6,752
	Private Boat	797	78,582	30,309	49,460
	Shore	555	49,829	19,733	31,423
Total Durable Expenditures		6,517	634,399	266,933	429,173
Total State Economic Impacts		7,987	774,297	321,564	516,808

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-residents	Residents	Fishing Tackle	221,453
For-Hire	4,108	3,591	Other Equipment	67,985
Private Boat	19,233	59,903	Boat Expenses	352,620
Shore	20,109	21,346	Vehicle Expenses	50,800
Total	43,450	84,840	Second Home Expenses	474
			Total Durable Expenditures	693,332
Total State Trip and Durable Equipment Expenditures				821,622

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	510	559	578	463	464	515	496	516	412	419
Non-Coastal	69	137	90	76	89	87	63	56	78	74
Out-of-State	428	511	364	297	338	305	279	320	193	267
Total Anglers	1,007	1,206	1,033	836	891	907	838	892	684	760

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	70	37	43	60	57	48	45	30	45	59
Private	2,491	2,563	2,590	2,369	2,353	2,124	1,700	1,782	1,426	1,302
Shore	1,104	1,365	1,155	1,083	1,089	876	852	1,086	1,051	1,120
Total Trips	3,664	3,964	3,788	3,511	3,499	3,048	2,597	2,899	2,522	2,480

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black seabass	H	46	34	83	36	39	115	29	19	4	21
	R	1,247	1,116	1,356	1,271	1,251	1,152	525	444	884	594
Cobia	H	1	18	22	10	5	17	7	4	1	10
	R	6	16	23	3	3	13	9	9	9	16
Drum (Atlantic croaker)	H	8,260	7,657	7,222	6,944	8,389	5,328	4,744	3,305	3,455	4,318
	R	6,276	8,738	4,194	8,505	7,807	7,621	4,824	4,873	5,100	6,014
Drum (spot)	H	1,718	2,782	3,585	8,203	4,398	2,147	1,670	2,967	1,350	4,288
	R	881	2,457	1,372	2,156	1,487	1,458	1,155	2,245	1,146	2,218
Drum (spotted seatrout)	H	69	22	43	159	104	22	17	248	126	55
	R	258	192	83	363	367	171	550	1,215	429	291
Drum (weakfish)	H	158	44	43	88	28	16	4	4	22	2
	R	545	355	556	230	427	84	178	289	103	80
Red drum	H	5	3	13	46	21	38	11	(1)	29	124
	R	33	28	186	110	237	178	29	61	2,503	220
Striped bass	H	393	258	461	238	245	226	74	123	70	87
	R	1,733	1,295	1,655	949	532	359	135	154	102	169
Summer flounder	H	674	684	763	398	260	288	261	317	260	187
	R	3,697	2,509	2,164	3,023	2,425	3,613	2,420	1,987	856	515
Wrasses (tautog)	H	151	61	105	61	56	61	127	46	14	6
	R	123	77	200	80	34	34	130	36	17	17

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Virginia's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	188,989 (2.6%)	3,054,816 (2.7%)	114.89 (2.7%)	195.74 (2.9%)	332.16 (2.7%)	0.53
2012	192,730 (2.6%)	3,089,241 (2.7%)	150.56 (2.8%)	256.79 (3%)	445.09 (2.8%)	0.66
% change	1.9	1.1	23.7	23.8	25.4	19.7

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	68	65	74	62	74	69	56	73	76
	Receipts	3,456	3,665	4,916	4,845	5,020	4,053	3,698	3,792	4,691
Seafood sales, retail	Firms	89	80	86	84	80	82	82	78	87
	Receipts	8,346	8,762	8,027	7,265	8,273	6,642	6,951	7,819	8,373

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

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	42	39	33	30	26	25	23	18	19
	Employees	1,231	1,336	871	955	490	941	961	899	919
	Payroll	38,731	39,980	28,530	34,520	11,366	30,600	30,460	33,285	32,955
Seafood sales, wholesale	Establishments	86	86	80	83	69	72	76	62	64
	Employees	756	675	605	734	621	519	518	469	492
	Payroll	22,235	21,864	21,388	25,365	17,667	15,620	17,901	15,733	14,271
Seafood sales, retail	Establishments	68	69	75	73	68	62	59	58	51
	Employees	297	286	334	282	251	271	265	277	280
	Payroll	4,479	4,865	5,348	5,227	5,170	5,401	5,480	5,453	5,563

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	13	15	13	15	10	9	7	7	12
	Employees	ds	ds	ds	565	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	30,704	ds	ds	ds	ds	ds
Deep sea freight transportation	Establishments	21	24	22	20	18	16	17	21	19
	Employees	1,124	1,090	1,564	1,611	409	ds	421	492	ds
	Payroll	91,978	95,871	141,085	148,502	32,473	19,241	35,917	42,018	ds
Deep sea passenger transportation	Establishments	2	1	1	1	2	2	1	2	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	137	141	131	126	119	118	115	110	105
	Employees	ds	ds	ds	992	964	829	868	818	673
	Payroll	ds	ds	ds	26,186	24,326	24,631	24,182	23,379	18,874
Marine cargo handling	Establishments	19	18	17	15	12	12	7	11	6
	Employees	ds	1,516	1,110	1,085	ds	ds	ds	ds	ds
	Payroll	ds	52,254	51,654	56,696	ds	ds	41,280	41,262	ds
Navigational services to shipping	Establishments	20	21	17	18	23	25	26	21	20
	Employees	ds	ds	ds	216	375	384	411	419	428
	Payroll	ds	ds	ds	11,700	21,014	22,177	22,910	22,132	25,732
Port & harbor operations	Establishments	9	9	10	10	8	6	7	6	13
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	52	50	51	52	59	53	56	51	59
	Employees	21,022	21,230	21,741	ds	ds	ds	ds	ds	ds
	Payroll	920,372	938,375	993,066	ds	ds	ds	ds	ds	ds

[1] 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.
[2] ds = these data are suppressed.

South Atlantic Region

- East Florida
- Georgia
- North Carolina
- South Carolina

Commercial grouper vessel, South Carolina
(photo credit: Chris Conklin)

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 ManagementCouncils, 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 2013. Red grouper was removed from the overfished list in 2013. Six stocks or stock complexes are currently subject to overfishing: gag, red snapper, snowy grouper, speckled hind, warsaw grouper, and blueline tilefish. Red grouper and black sea bass were removed from the overfishing list in 2013.

A number of the management actions in 2013 and 2014 were focused on ending overfishing or improving the stock status of overfished stocks. For example, management actions in 2013 and 2014 restricted both the commercial and recreational red snapper fishing seasons. The 2013 and 2014 commercial fishing seasons were opened August 26-October 8 and July 14-September 9, respectively, while the 2013 recreational fishing season was limited to one weekend and the 2014 season was limited to three consecutive weekends in July 2014.

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, which 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 overcapitalization 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. NMFS continues to collect data on this program to develop standard performance indicators that measure its basic economic performance.

COMMERCIAL FISHERIES

In 2013, commercial fishermen in the South Atlantic Region landed 92 million pounds of finfish and shellfish, earning $161 million in landings revenue. Landings revenue was dominated by blue crab ($44 million) and shrimp ($39 million). These species groups commanded ex-vessel prices of $1.35 and $2.80 per pound, respectively, and together comprised 51% of total landings revenue in the South Atlantic Region.

Key South Atlantic Region Commercial Species

- Blue crab
- Clams
- Flounders
- Groupers
- King mackerels
- Oysters
- Shrimp
- Snappers
- Swordfish
- Tunas

North Carolina and East Florida had the highest landings revenue in the region in 2013 with $79.1 million and $48.7 million, respectively. South Carolina landings revenue was $21.6 million while Georgia landings revenue was $11.8 million. North Carolina also had the highest landings (50 million pounds), followed by East Florida (21 million pounds), Georgia (11 million pounds), and South Carolina (10 million pounds).

Economic Impacts[1,2]

In 2013, the South Atlantic Region's seafood industry generated $15 billion in sales impacts in Florida, $2 billion in sales impacts in Georgia, $822 million in sales impacts in North Carolina, and $125 million in sales im-

[1] 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).
[2] Commercial economic impacts data were not available for East Florida, data for Florida are reported here.

pacts in South Carolina. The largest economic impacts were generated in Florida, which generated 78,000 jobs, $15 billion in sales impacts, $2.9 billion in income impacts, and $5.1 billion in value added impacts. The smallest economic impacts in the region were generated in South Carolina: 1,700 jobs, $125 million in sales, $41 million in income, and $58 million in value added impacts. The sector that generated the greatest employment impacts by state was the importers sector with 40,000 jobs in Florida.

Landings Revenue

Landings revenue in the South Atlantic Region totaled $161 million in 2013. This was a 1% increase (but a 26% decrease in real terms) from 2004 levels and a 6% decrease from 2012. Blue crab ($44 million) and shrimp ($39 million) had the highest landings revenue, together accounting for 51% of the South Atlantic Region's landings revenue in 2013. North Carolina had the highest landings revenue ($30 million) for finfish in 2013 followed by East Florida ($24 million), South Carolina ($6 million), and Georgia (0.5 million). Shellfish landings revenue was dominated by North Carolina ($49 million) in 2013.

From 2004 to 2013, species or species groups with large changes in landings revenue included oysters (106% or 51% in real terms), swordfish (103% or 49% in real terms) and tunas (63% or 20% in real terms). Landing revenues from blue crab increased 29% (a 5% decrease in real terms) despite landings declining 27% due to the 77% (30% in real terms) increase in the market price. National market trends for blue crab during this period were comparable - a 70% increase in price (a 25% increase in real terms) coupled with a 23% decrease in landings.

From 2012 to 2013, shrimp (-30%) and swordfish (-24%) experienced the largest changes in landings revenue. Blue crab landings revenue increased 17% despite landings falling 19% from 2012 levels due to the price surging 45% from 2012 to 2013.

Landings

Fishermen in the South Atlantic Region landed 92 million pounds of finfish and shellfish in 2013. This was a 53% decrease from 2004 and a 15% decrease from 2012. Finfish landings accounted for 40% of total landings in the South Atlantic Region (37 million pounds) in 2013. Blue crab and shrimp had the highest annual landings in the South Atlantic Region in 2013, with 33 million pounds and 14 million pounds, respectively. Together they accounted for 51% of the total landings in 2013. From 2004 to 2013, flounders experienced the largest decrease in landings (-63%). Species or species groups with large increases in landings include swordfish (64%), oysters (50%), and tunas (36%).

Commercial Fisheries Facts

Landings revenue

- On average, between 2004 and 2013, the key species or species groups accounted for 78% of total revenue, generating an annual average of $122 million in the South Atlantic Region.
- On average, landings revenue in the South Atlantic region was split 60% shellfish and 40% finfish.
- Shrimp had the highest annual average landings revenue in the region from 2004 to 2013: $44 million.

Landings

- Key species or species groups contributed an average of 63% annually to total landings between 2004 and 2013, or 76 million pounds.
- Blue crab contributed the most to landings in the region, averaging 39 million pounds from 2004 to 2013.

Prices

- Clams had the highest average annual ex-vessel price from 2004 to 2013:$6.06
- Blue crabs had the highest average annual ex-vessel price from 2004 to 2013:$0.92

Prices

Ex-vessel prices for blue crab (77%, 31% in real terms), king mackerel (71%, 26% in real terms), shrimp, flounders, and groupers (65% each or 21% in real terms) experienced the biggest increases between 2004 and 2013. Clams experienced a less than 1% increase in prices from 2004 to 2013, which translates into the largest real price decline (-26%). Relative to the ex-vessel prices in 2012, blue crabs experienced the greatest increase (45%).

RECREATIONAL FISHERIES

In 2013, almost 2.5 million recreational anglers took 17 million fishing trips in the South Atlantic Region. 84% of these anglers were residents of a regional coastal county. Of the total fishing trips taken, 47% of them were taken from a private or rental boat and another 51% were shore-based.

Economic Impacts and Expenditures[3]

The contribution of recreational fishing activities in the South 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.

Key South Atlantic Region Recreational Species

- Black sea bass
- Bluefish
- Dolphinfish
- Atlantic croaker and spot
- Spotted seatrout
- King mackerel
- Sheepshead porgy
- Red drum
- Sharks
- Spanish mackerel

Employment impacts in East Florida were the highest in the region in 2013 with 37,000 full- and part-time jobs generated by recreational fishing activities in the state. Employment impacts were lowest in Georgia, with 2,200 jobs. Throughout the South Atlantic Region, most of the employment impacts in 2013 were generated by expenditures on durable equipment: 72% region-wide.

In addition to jobs, the contribution of recreational fishing activities to South Atlantic Region's economy can be measured in terms of sales impacts, income impacts, and the contribution of these activities to gross domestic product (value added impacts). In 2013, sales, income, and value added impacts were the highest in East Florida: $4 billion in sales impacts, $1.6 billion in income impacts, $2.5 billion in value added. These impacts were smallest in Georgia.

Overall, total fishing trip and durable equipment expenditures across the South Atlantic Region in 2013 were $6.7 billion. Approximately 86% of these expenditures were related to durable equipment purchases. The greatest expenditures were for vehicle expenses ($2.7 billion), followed by boat expenses ($1.5 billion), fishing tackle ($1.2 billion), and other equipment ($306 million).

Fishing trip-related expenditures by the South Atlantic Region's non-residents totaled over $393 million of which the greatest portion can be attributed to shore-based fishing trips ($258 million). Residents of the South Atlantic Region spent $559 million on saltwater fishing trips, with the largest part of these expenses related to private boat trips ($320 million).

Participation

There were 2.5 million recreational anglers who fished in the South Atlantic Region in 2013. This was a 5% decrease from 2004. About 84% of total anglers in 2013 were residents of a coastal county.

Fishing Trips

Recreational fishermen took 17 million fishing trips in the South Atlantic Region in 2013. This was a 22% decrease from 2004 and a 7% decrease from 2012. Of the total trips taken in the South Atlantic Region in 2013, approximately 47% of the trips were private or rental boat based (7.9 million trips), while 51% of trips were shore based (8.4 million trips) .

Recreational Fisheries Facts

Participation
- An average of 2.8 million anglers fished in the South Atlantic Region annually from 2004 to 2013.
- Coastal county residents made up 82% of total anglers in this region from 2004 to 2013.

Fishing trips
- In the South Atlantic Region, an average of 19.7 million fishing trips were taken annually from 2004 to 2013.
- Private or rental boat trips accounted for 49% of trips from 2004 to 2013. Shore-based trips accounted for an additional 49%.

Harvest and release
- Atlantic croaker and spot was the most commonly caught key species or species group, averaging 8.3 million fish over the 10 year time period.
- The species or species group that was most commonly released was sharks (99% released).

[3] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).

Harvest and Release

Of the South Atlantic Region's key species and species groups, Atlantic croaker and spot (9.1 million fish), bluefish (5.6 million fish), and spotted seatrout (5.4 million fish) were the most often caught by anglers in 2013.

Between 2004 and 2013, the key species or species groups that registered the largest increase in catch were: sharks (81%), Spanish mackerel (65%), and bluefish (49%). Three of the South Atlantic Region's key species or species groups showed decreases in catch totals: spotted seatrout (-35%), king mackerel (-31%), and dolphinfish (-26%).

MARINE ECONOMY[4,5]

Across all sectors of the economy in North Carolina, South Carolina, Georgia and Florida nearly 15 million full- and part-time employees were employed by about 1 million establishments in 2012. Annual payroll totaled $593 billion. Total employee compensation in the South Atlantic region totaled $972 billion and the combined gross state product of all states totaled about $1.8 trillion.[6]

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.[7] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

In 2012, the commercial fishing location quotient (CFLQ) for Florida was the highest in the region at 1.05. This suggests that the proportion of state employment in commercial fishing-related industries in Florida is approximately the same as the national average. The 2012 CFLQ in North Carolina was second highest in the region at 0.13.

For this report, the marine economy, a subset of the regional economy, is comprised of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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

In 2012, there were 459 nonemployer firms (businesses that have no paid employees and are subject to federal income tax) engaged in seafood product preparation and packaging across the South Atlantic region. These firms had receipts totaling $26 million in 2012. Florida (307 firms) accounted for the vast majority of nonemployer firms. There were 45 employer establishments in this sector, a 21% decrease from 2004 to 2012. The largest number of employer establishments (27) were located in Florida.

There were 318 seafood wholesale establishments in the South Atlantic region in 2012, a decrease of 18% from 2004. Most of these establishments were located in Florida (226). In 2012, this sector had 3,343 employees and an annual payroll of $120 million. Nonemployer firms engaged in seafood retail sales in the South Atlantic region totaled 683 in 2012, a 28% increase from 2004 levels. Total receipts for these firms was $55 million. Florida (383 firms) and North Carolina (136) had the largest number of firms in this sector. Region-wide, there were 353 employer establishments in the seafood retail sales sector in 2012, employing 1,700 with payroll of $35 million. Most of these establishments were located in Florida (151)and North Carolina (88).

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, 667 establishments were classified as marinas over all four states,

[4] Marine Economy information was not available for East Florida, information for the entire state of Florida is provided here.
[5] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[6] 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 (accessed September 15, 2014).
[7] U.S. Bureau of Labor Statistics, "Location Quotient Calculator," http://data.bls.gov/location_quotient/ (accessed September 15, 2014).

employing 6,680 workers and spending $198 million on payroll in 2012. The Ship and Boat Building Sector consisted of 371 establishments employing 12,000 workers who earned $540 million in 2012. There were 53 marine cargo operation in Florida and South Carolina alone. These firms employed 5,300 workers and contributed $116 million in payroll.

Tables | South Atlantic Region

2013 Economic Impacts of the South Atlantic Seafood Industry (thousands of dollars)[1]

	Landings Revenue	With Imports				Without Imports			
		Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
East Florida	48,669	78,378	15,319,435	2,878,309	5,136,623	11,044	938,589	249,268	381,866
Georgia	11,806	13,763	1,932,077	424,934	701,661	1,564	70,547	27,900	37,952
North Carolina	79,092	9,579	821,508	231,047	343,855	5,744	274,004	113,697	150,534
South Carolina	21,618	1,742	124,561	40,713	57,853	1,409	73,525	30,310	40,284

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	159,444	131,410	140,674	152,390	165,872	147,328	165,681	171,300	171,350	161,169
Finfish & Other	66,858	56,907	60,707	61,339	60,813	63,163	65,931	66,228	63,961	60,679
Shellfish	92,592	74,507	79,976	91,061	105,059	84,176	99,756	105,078	107,397	100,506
Key Species										
Blue crab	34,249	31,784	27,050	33,634	40,206	37,784	36,301	33,862	37,619	44,139
Clams	5,561	4,779	4,223	4,039	3,862	3,516	3,809	3,396	3,456	3,690
Flounders	11,530	10,974	13,317	11,375	10,928	10,171	10,885	8,942	7,428	7,080
Groupers	2,728	2,814	3,416	4,565	4,084	3,214	3,022	3,027	2,611	2,605
King mackerels	5,260	5,551	6,495	6,872	7,695	8,088	7,585	6,580	5,559	5,213
Oysters	2,912	3,305	3,853	3,806	4,028	4,603	7,175	6,850	5,469	5,999
Shrimp	44,797	31,035	39,653	43,807	51,072	33,082	46,148	53,652	54,969	38,668
Snappers	3,208	3,314	2,748	3,922	4,554	4,024	3,497	3,757	3,842	3,687
Swordfish	3,555	3,134	2,753	4,298	3,661	4,821	7,519	9,400	9,482	7,207
Tunas	3,671	3,904	4,692	4,894	4,672	4,869	3,681	5,096	7,035	5,980

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	199,033	123,421	114,661	105,285	116,714	113,563	119,675	123,657	108,133	91,900
Finfish & Other	121,214	64,925	52,056	46,631	44,025	51,237	52,601	49,160	39,557	36,773
Shellfish	77,820	58,497	62,604	58,654	72,689	62,327	67,074	74,497	68,576	55,127
Key Species										
Blue crab	45,001	38,218	36,779	34,045	45,150	39,016	39,013	42,127	40,396	32,763
Clams	886	747	685	663	628	611	641	569	621	583
Flounders	7,325	5,944	6,282	4,778	5,034	5,278	5,020	4,130	2,740	2,734
Groupers	1,057	1,007	1,152	1,416	1,266	992	884	774	665	612
King mackerels	3,269	3,106	3,792	3,736	4,352	4,858	4,247	3,048	2,456	1,898
Oysters	689	730	808	776	857	938	1,439	1,233	897	1,031
Shrimp	26,472	16,048	22,080	21,235	23,343	20,110	23,204	22,940	22,374	13,803
Snappers	1,285	1,286	967	1,354	1,515	1,373	1,196	1,246	1,229	1,148
Swordfish	1,314	1,152	1,036	1,417	1,307	1,800	2,288	2,611	2,746	2,161
Tunas	1,739	1,569	2,360	2,310	1,658	1,945	1,805	2,209	2,500	2,367

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.76	0.83	0.74	0.99	0.89	0.97	0.93	0.80	0.93	1.35
Clams	6.27	6.40	6.16	6.09	6.15	5.76	5.94	5.97	5.57	6.33
Flounders	1.57	1.85	2.12	2.38	2.17	1.93	2.17	2.17	2.71	2.59
Groupers	2.58	2.79	2.97	3.22	3.23	3.24	3.42	3.91	3.93	4.25
King mackerels	1.61	1.79	1.71	1.84	1.77	1.66	1.79	2.16	2.26	2.75
Oysters	4.22	4.53	4.77	4.91	4.70	4.91	4.99	5.55	6.09	5.82
Shrimp	1.69	1.93	1.80	2.06	2.19	1.65	1.99	2.34	2.46	2.80
Snappers	2.50	2.58	2.84	2.90	3.01	2.93	2.92	3.02	3.13	3.21
Swordfish	2.71	2.72	2.66	3.03	2.80	2.68	3.29	3.60	3.45	3.33
Tunas	2.11	2.49	1.99	2.12	2.82	2.50	2.04	2.31	2.81	2.53

2013 Economic Impacts of the South Atlantic Recreational Fishing Expenditures (thousands of dollars)

	Trips	Jobs	Sales	Income	Value Added
East Florida	8,981	36,557	3,992,360	1,618,037	2,486,549
Georgia	690	2,177	214,483	88,583	137,657
North Carolina	4,968	16,150	1,601,486	633,794	989,131
South Carolina	1,977	4,280	384,382	145,772	231,908

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	93,120	24,708
Private Boat	41,163	320,082
Shore	258,284	214,377
Total	392,568	559,167

Equipment	Durable Goods Expenditures
Fishing Tackle	1,169,853
Other Equipment	305,541
Boat Expenses	1,539,514
Vehicle Expenses	2,698,074
Second Home Expenses	69,656
Total Durable Expenditures	5,782,638

Total State Trip and Durable Equipment Expenditures	6,734,373

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	2,105	2,615	2,603	3,157	2,330	1,922	1,933	1,893	2,135	2,092
Non-Coastal	511	472	477	493	560	462	536	450	502	396
Out-of-State	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	2,616	3,087	3,080	3,650	2,890	2,384	2,470	2,343	2,637	2,488

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	492	503	456	503	415	391	368	372	348	336
Private	9,901	9,896	9,823	11,536	10,910	8,923	9,514	8,663	8,775	7,878
Shore	10,830	10,620	11,250	9,956	10,469	9,371	9,185	8,637	8,669	8,402
Total Trips	21,222	21,018	21,528	21,995	21,794	18,684	19,066	17,673	17,793	16,616

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black sea bass	H	918	623	579	435	348	270	510	336	291	247
	R	2,759	2,388	2,511	2,865	2,567	1,907	2,594	3,032	4,376	2,864
Bluefish	H	1,877	2,077	1,488	1,916	1,691	1,587	2,348	1,936	1,379	1,895
	R	2,663	2,750	3,199	4,089	3,085	2,557	4,267	3,455	2,368	3,682
Dolphinfish	H	840	1,019	1,017	1,078	1,025	727	825	824	801	521
	R	118	202	185	394	188	98	128	354	126	168
Drum (Atlantic croaker and spot)	H	5,703	4,210	4,981	4,576	5,516	2,817	1,946	3,075	2,795	3,314
	R	3,876	3,882	6,756	3,774	4,182	4,867	3,335	4,183	3,560	5,786
Drum(spotted seatrout)	H	1,049	1,479	1,505	1,546	1,633	1,410	932	859	1,691	1,067
	R	3,561	6,409	5,264	5,554	5,166	4,170	5,771	4,889	6,519	4,289
King mackerel	H	460	392	490	818	483	421	234	154	150	100
	R	227	194	199	300	169	96	77	48	27	23
Porgies (sheepshead)	H	429	539	392	639	694	626	704	662	522	594
	R	315	420	419	547	693	509	496	519	628	745
Red drum	H	414	484	319	413	463	277	607	493	459	634
	R	1,768	2,613	2,035	1,838	2,414	1,870	3,321	2,137	2,966	3,069
Sharks[2]	H	22	75	6	15	16	19	4	11	8	13
	R	1,821	2,571	1,855	1,955	2,521	2,060	1,972	1,542	1,787	3,240
Spanish mackerel	H	758	932	654	1,061	1,315	1,126	1,073	869	820	1,054
	R	446	618	274	607	886	519	604	395	424	679

[1] 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.
[2] Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks, and unidentified sharks.

Tables | East Florida

2013 Economic Impacts of the Florida[1] Seafood Industry (thousands of dollars)[1]

	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	78,378	15,319,435	2,878,309	5,136,623	11,044	938,589	249,268	381,866
Commercial Harvesters	7,199	453,074	144,057	190,994	7,199	453,074	144,057	190,994
Seafood Processors & Dealers	4,525	725,679	140,440	276,093	574	97,932	18,953	37,259
Importers	40,111	11,033,696	1,768,360	3,363,554	0	0	0	0
Seafood Wholesalers & Distributors	9,869	1,115,332	437,875	544,775	482	54,490	21,392	26,615
Retail	16,674	1,991,654	387,576	761,207	2,788	333,094	64,866	126,997

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	39,978	35,489	42,002	42,767	47,856	40,992	51,151	60,643	57,766	48,669
Finfish & Other	15,324	16,496	17,422	19,768	21,131	23,164	25,756	26,344	26,061	24,139
Shellfish	24,654	18,993	24,580	23,000	26,726	17,828	25,395	34,300	31,705	24,530
Key Species										
Blue crab	3,685	4,648	3,701	4,924	4,333	2,376	3,415	4,155	4,747	3,785
Clams	506	390	435	391	510	415	331	220	138	28
Groupers	584	587	521	923	724	583	561	556	764	631
King mackerel	3,650	3,456	4,318	4,833	6,036	6,563	6,911	5,500	4,685	4,320
Lobsters	2,148	1,624	2,462	2,488	3,312	1,089	2,825	3,207	1,720	3,437
Sharks	1,149	1,201	1,364	726	636	949	757	677	458	491
Shrimp	17,360	11,118	16,390	13,821	17,225	12,455	17,071	24,361	21,903	14,125
Snappers	1,098	1,009	972	1,279	1,905	2,383	1,454	1,673	1,604	1,769
Spanish mackerel	1,827	2,198	2,094	2,332	1,827	2,004	2,414	2,686	2,448	2,650
Swordfish	1,491	1,625	1,219	2,529	2,339	2,385	3,677	4,005	4,838	3,287

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	28,707	22,964	27,021	25,196	26,307	27,501	29,713	31,244	28,579	21,416
Finfish & Other	12,497	12,815	13,848	13,893	14,111	16,105	17,137	16,051	14,241	12,554
Shellfish	16,209	10,149	13,173	11,303	12,196	11,396	12,576	15,193	14,338	8,862
Key Species										
Blue crab	3,536	4,045	3,130	4,063	3,342	1,640	2,553	3,226	3,440	2,211
Clams	54	42	47	41	55	54	42	22	17	5
Groupers	216	207	166	274	204	165	150	139	190	150
King mackerel	2,291	1,833	2,572	2,631	3,299	4,064	3,905	2,633	2,143	1,547
Lobsters	456	313	407	361	506	298	481	514	302	486
Sharks	1,273	1,292	1,472	818	776	1,109	781	716	631	657
Shrimp	11,728	5,203	8,843	6,174	7,619	8,662	8,743	10,528	8,869	5,044
Snappers	453	407	355	461	635	805	510	564	523	572
Spanish mackerel	3,066	3,134	3,143	3,264	2,263	2,629	3,553	3,433	2,586	2,246
Swordfish	511	543	407	772	791	838	1,028	1,067	1,343	831

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	1.04	1.15	1.18	1.21	1.30	1.45	1.34	1.29	1.38	1.71
Clams	9.30	9.27	9.20	9.52	9.29	7.73	7.90	9.84	8.17	6.00
Groupers	2.70	2.84	3.14	3.37	3.55	3.53	3.73	3.99	4.02	4.20
King mackerel	1.59	1.89	1.68	1.84	1.83	1.61	1.77	2.09	2.19	2.79
Lobsters	4.71	5.18	6.06	6.90	6.55	3.65	5.87	6.23	5.69	7.07
Sharks	0.90	0.93	0.93	0.89	0.82	0.86	0.97	0.95	0.73	0.75
Shrimp	1.48	2.14	1.85	2.24	2.26	1.44	1.95	2.31	2.47	2.80
Snappers	2.42	2.48	2.74	2.78	3.00	2.96	2.85	2.97	3.07	3.09
Spanish mackerel	0.60	0.70	0.67	0.71	0.81	0.76	0.68	0.78	0.95	1.18
Swordfish	2.92	2.99	3.00	3.28	2.96	2.85	3.58	3.75	3.60	3.96

[1] Information reported in this table is for the state of Florida, not East Florida.

2013 Economic Impacts of East Florida Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	1,019	111,816	46,455	67,910
	Private Boat	2,328	248,676	93,447	154,024
	Shore	1,454	144,476	54,459	90,124
Total Durable Expenditures		31,756	3,487,392	1,423,676	2,174,491
Total State Economic Impacts		36,557	3,992,360	1,618,037	2,486,549

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	53,285	8,904
Private Boat	15,132	156,962
Shore	46,394	60,388
Total	114,811	226,253

Equipment	Durable Goods Expenditures
Fishing Tackle	792,140
Other Equipment	190,740
Boat Expenses	860,988
Vehicle Expenses	2,252,462
Second Home Expenses	6,485
Total Durable Expenditures	4,102,814

Total State Trip and Durable Equipment Expenditures	4,443,878

Recreational Anglers by Residential Area (thousands of anglers)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	1,161	1,565	1,660	2,168	1,317	1,099	1,033	1,109	1,181	1,263
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	685	945	935	1,008	703	643	629	553	514	540
Total Anglers	1,847	2,510	2,595	3,176	2,021	1,741	1,662	1,662	1,695	1,803

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	204	193	171	169	137	149	118	124	144	156
Private	5,544	6,064	5,913	7,157	6,452	5,394	5,706	5,298	5,028	4,643
Shore	5,145	5,092	5,543	5,277	4,651	4,577	4,393	4,735	4,219	4,183
Total Trips	10,893	11,349	11,628	12,603	11,240	10,120	10,218	10,156	9,390	8,981

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefish	H	514	444	434	471	377	623	787	556	278	409
	R	499	368	718	932	499	680	1,621	912	1,111	1,493
Dolphinfish	H	545	353	492	513	661	328	248	347	433	297
	R	113	200	161	373	185	77	118	346	106	163
Drum (kingfish)	H	1,094	998	838	854	949	409	720	936	825	972
	R	753	903	706	1,099	552	608	935	807	1,102	1,115
Drum (spotted seatrout)	H	234	379	331	278	182	172	252	287	427	335
	R	2,413	4,246	3,316	3,094	2,830	1,642	2,937	2,141	3,026	1,940
Gray snapper	H	321	397	445	689	352	225	161	187	210	639
	R	1,771	1,047	1,326	2,073	1,551	1,706	497	678	1,549	1,992
Jack (Florida pompano)	H	447	281	164	126	272	91	263	106	181	110
	R	417	187	129	163	359	80	161	297	278	184
King mackerel	H	287	242	340	515	349	292	183	133	114	73
	R	145	118	158	226	125	52	59	45	21	16
Porgies (sheepshead)	H	202	389	243	255	237	227	352	287	267	253
	R	251	289	313	307	466	354	337	358	475	471
Red drum	H	137	196	146	161	159	80	175	180	239	298
	R	1,006	1,406	848	758	889	521	1,414	1,051	799	1,542
Spanish mackerel	H	369	513	323	456	503	369	513	406	247	533
	R	208	249	141	197	364	150	282	147	89	366

[1] Data is not available because all East Florida residents are considered coastal county residents.

East Florida's State Economy (% of national total)[1]

	Establishments	Employees	Annual Payroll (million $)	Employee Compensation (million $)	Gross State Product (million $)	Commercial Fishing Location Quotient[2]
2004	484,938 (6.6%)	6,864,987 (6%)	219.79 (5.2%)	351.86 (5.2%)	635.77 (5.2%)	1.03
2011	502,414 (6.8%)	6,932,382 (6%)	280.30 (5.2%)	424.11 (4.9%)	769.01 (4.8%)	1.05
% change	3.5	1	21.6	17	17.3	1.9

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	177	164	174	173	202	217	280	294	307
	Receipts	8,652	8,756	10,184	10,497	11,065	12,473	14,635	14,618	17,557
Seafood sales, retail	Firms	247	247	251	319	331	316	361	362	383
	Receipts	18,004	22,787	20,708	27,557	26,087	25,667	27,964	29,037	30,765

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

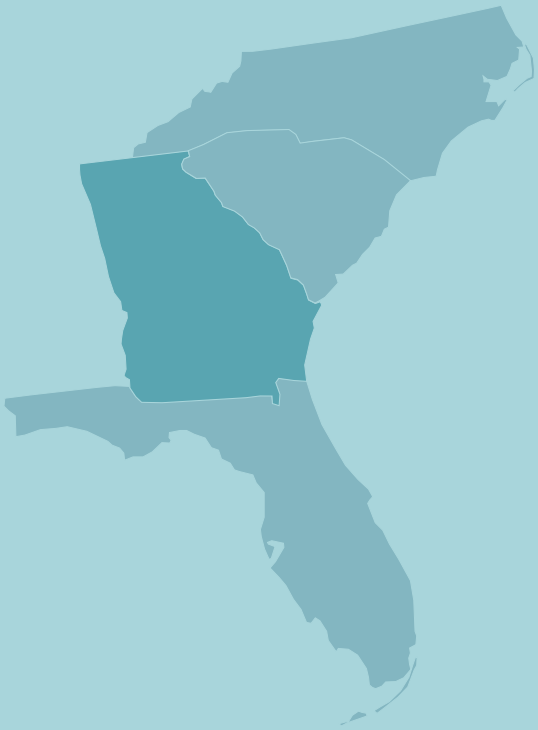
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	24	25	22	20	23	25	27	24	27
	Employees	2,193	1,616	1,704	1,748	1,637	1,143	1,269	1,095	1,608
	Payroll	65,881	47,529	62,801	58,233	53,455	46,235	45,772	42,612	51,735
Seafood sales, wholesale	Establishments	261	258	259	267	229	215	229	250	226
	Employees	1,948	1,883	2,091	2,308	1,913	1,762	1,747	1,913	1,957
	Payroll	63,276	65,339	73,897	85,019	75,203	72,159	70,889	77,115	75,945
Seafood sales, retail	Establishments	190	176	173	169	168	158	145	145	151
	Employees	977	970	936	989	991	885	865	849	945
	Payroll	17,575	19,192	19,513	20,595	21,604	21,182	20,783	20,158	21,577

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	59	59	54	47	42	42	50	54	60
	Employees	1,132	1,150	1,217	1,242	1,106	972	709	753	1,381
	Payroll	80,422	71,420	91,638	94,429	50,115	37,774	50,217	53,341	100,402
Deep sea freight transportation	Establishments	63	69	73	69	57	58	61	65	75
	Employees	2,567	2,622	3,729	3,190	2,486	2,801	2,279	2,374	3,345
	Payroll	150,701	207,300	226,810	208,144	169,055	180,139	159,025	177,386	231,887
Deep sea passenger transportation	Establishments	32	31	37	34	31	33	29	29	39
	Employees	8,849	8,492	9,077	ds	ds	ds	ds	ds	ds
	Payroll	536,753	504,625	571,590	ds	ds	ds	ds	ds	ds
Marinas	Establishments	532	551	513	493	442	428	430	411	432
	Employees	5,067	5,069	5,494	4,935	5,024	4,665	4,439	4,657	4,918
	Payroll	125,763	133,384	146,390	148,592	151,677	132,955	133,017	142,997	148,573
Marine cargo handling	Establishments	66	63	66	53	56	59	55	64	43
	Employees	5,671	6,409	7,266	6,585	8,052	7,288	7,547	7,484	4,598
	Payroll	175,257	177,983	189,020	173,788	192,473	185,309	191,560	195,458	86,461
Navigational services to shipping	Establishments	149	148	142	145	147	145	145	150	151
	Employees	686	660	781	1,484	894	829	980	1,047	853
	Payroll	39,309	42,200	48,370	61,470	56,917	60,641	76,853	75,561	68,366
Port & harbor operations	Establishments	29	31	27	29	40	32	34	32	66
	Employees	1,045	973	584	459	712	527	470	377	2,082
	Payroll	24,327	22,606	19,417	12,872	24,668	19,006	20,525	16,879	72,554
Ship & boat building	Establishments	306	312	301	296	297	261	248	246	258
	Employees	12,503	12,729	12,385	12,332	12,419	8,221	7,363	7,909	8,621
	Payroll	443,379	454,209	427,888	469,382	442,096	296,537	302,909	325,942	374,831

[1] All data presented on this page are for the state of Florida, not West Florida.
[2] 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.
[3] ds = these data are suppressed.

Tables | Georgia



2013 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	13,763	1,932,077	424,934	701,661	1,564	70,547	27,900	37,952
Commercial Harvesters	566	20,452	7,255	10,340	566	20,452	7,255	10,340
Seafood Processors & Dealers	1,151	89,787	34,603	45,676	161	12,514	4,823	6,366
Importers	5,256	1,445,807	231,718	440,745	0	0	0	0
Seafood Wholesalers & Distributors	1,118	135,349	46,678	65,596	34	4,073	1,405	1,974
Retail	5,672	240,683	104,681	139,303	804	33,507	14,416	19,271

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	14,374	13,465	11,534	11,331	13,081	11,761	13,731	16,179	16,625	11,806
Finfish & Other	747	729	574	625	623	626	279	146	180	516
Shellfish	13,627	12,736	10,960	10,706	12,458	11,135	13,452	16,033	16,445	11,290
Key Species										
Blue crab	2,508	3,096	2,959	3,767	3,910	3,839	2,648	3,341	4,259	3,994
Clams	426	658	298	290	383	473	430	605	603	563
Groupers	NA	NA	NA	123	NA	NA	NA	NA	NA	NA
Shrimp	10,589	8,936	7,640	6,446	7,877	6,608	10,103	11,398	11,045	5,774
Snails (conchs)	4	3	6	1	6	11	27	39	27	1
Snappers	NA	NA	NA	269	NA	NA	NA	NA	NA	NA

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	9,659	9,638	8,294	7,908	8,930	7,424	7,220	12,795	10,557	10,570
Finfish & Other	420	401	285	304	267	306	168	83	111	116
Shellfish	9,239	9,237	8,009	7,603	8,663	7,118	7,053	12,712	10,447	10,454
Key Species										
Blue crab	2,963	4,302	4,091	4,421	4,227	3,598	2,329	3,427	4,265	3,229
Clams	70	112	46	49	54	76	81	107	98	105
Groupers	NA	NA	NA	37	NA	NA	NA	NA	NA	NA
Shrimp	5,090	4,531	3,851	2,797	3,132	3,324	4,553	4,355	3,928	1,900
Snails (conchs)	4	3	5	1	5	11	18	30	18	1
Snappers	NA	NA	NA	93	NA	NA	NA	NA	NA	NA

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.85	0.72	0.72	0.85	0.92	1.07	1.14	0.97	1.00	1.24
Clams	6.10	5.85	6.49	5.89	7.03	6.24	5.30	5.68	6.18	5.34
Groupers	NA	NA	NA	3.33	NA	NA	NA	NA	NA	NA
Shrimp	2.08	1.97	1.98	2.30	2.51	1.99	2.22	2.62	2.81	3.04
Snails (conchs)	1.10	1.03	1.22	1.25	1.31	1.00	1.50	1.30	1.52	1.65
Snappers	NA	NA	NA	2.89	NA	NA	NA	NA	NA	NA

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Georgia Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	95	8,908	3,550	5,044
	Private Boat	178	17,095	6,497	10,643
	Shore	157	15,033	5,496	8,989
Total Durable Expenditures		1,747	173,447	73,040	112,981
Total State Economic Impacts		2,177	214,483	88,583	137,657

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	2,768	1,928
Private Boat	889	14,186
Shore	3,372	7,577
Total	7,029	23,692

Equipment	Durable Goods Expenditures
Fishing Tackle	48,665
Other Equipment	12,606
Boat Expenses	111,191
Vehicle Expenses	12,449
Second Home Expenses	0
Total Durable Expenditures	184,911

Total State Trip and Durable Equipment Expenditures	215,632

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	104	135	121	149	190	146	145	146	134	99
Non-Coastal	120	67	66	115	154	91	136	131	96	72
Out-of-State	53	43	33	45	98	45	61	78	74	53
Total Anglers	278	245	219	308	441	282	342	355	303	225

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	26	25	29	31	17	16	7.4	16	20	21
Private	486	538	480	577	731	516	530.2	620	496	387
Shore	457	370	289	421	456	311	335.2	335	376	283
Total Trips	969	933	798	1,029	1,204	842	872.8	970	892	690

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black drum	H	19	20	20	51	92	15	70	11	19	19
	R	42	11	29	35	65	23	40	5	20	10
Black sea bass	H	71	86	67	35	99	18	14	44	15	81
	R	143	218	184	292	581	112	162	226	135	295
Bluefish	H	(1)	4	3	11	8	1	13	3	6	3
	R	16	21	23	103	117	72	107	70	52	7
Drum (Atlantic croaker)	H	39	39	34	45	38	82	35	44	38	55
	R	154	281	284	229	294	435	264	262	168	299
Drum (southern kingfish)	H	661	511	448	575	697	587	585	873	377	396
	R	818	563	668	625	873	559	465	668	605	287
Drum (spotted seatrout)	H	341	242	378	577	642	506	384	290	527	237
	R	610	642	809	1,039	721	915	742	552	1,029	321
Porgies (sheepshead)	H	82	65	36	59	65	52	104	138	59	42
	R	26	57	52	85	98	32	38	45	29	39
Red drum	H	139	105	69	113	133	69	195	107	46	74
	R	142	334	137	226	314	168	483	213	90	199
Sharks[2]	H	1	2	(1)	2	3	1	(1)	3	1	(1)
	R	293	366	356	581	518	330	267	297	322	225
Southern flounder	H	53	38	23	92	49	34	35	28	18	19
	R	33	8	17	(1)	1	10	3	12	5	7

1 In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.
2 Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks, and unidentified sharks.

Georgia's State Economy (% of national total)

	Establishments	Employees	Annual Payroll (million $)	Employee Compensation (million $)	Gross State Product (million $)	Commercial Fishing Location Quotient[1]
2004	214,714 (2.9%)	3,452,451 (3%)	121.34 (2.9%)	193.47 (2.9%)	352.88 (2.9%)	0.13
2011	216,308 (2.9%)	3,390,540 (2.9%)	149.29 (2.8%)	240.97 (2.8%)	438.32 (2.7%)	0.08
% change	0.7	-1.8	18.7	19.7	19.5	-62.5

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	29	24	21	34	45	51	52	61	71
	Receipts	2,030	2,642	1,957	2,187	3,489	3,817	5,458	5,540	4,974
Seafood sales, retail	Firms	69	64	78	87	101	98	96	89	97
	Receipts	4,855	6,625	7,180	8,671	6,922	5,701	6,474	8,646	8,233

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

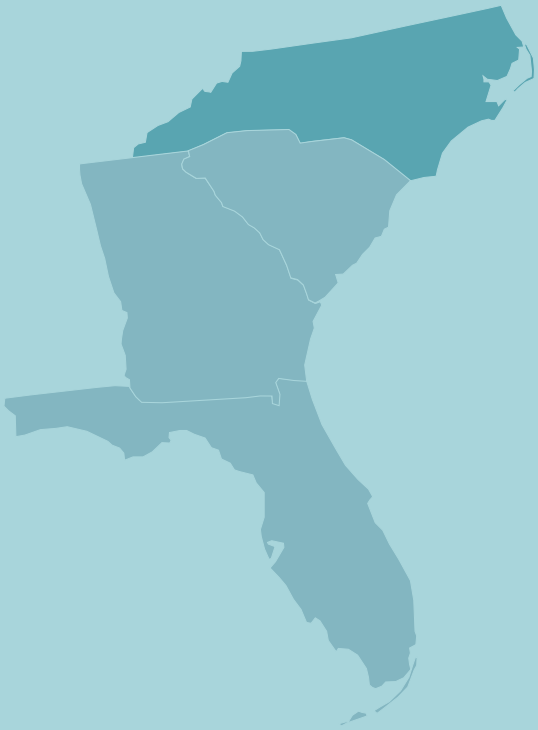
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	11	11	8	6	7	6	6	5	6
	Employees	ds	1,155	1,164	ds	ds	ds	1,056	1,022	854
	Payroll	ds	39,839	43,637	ds	ds	ds	37,343	39,433	32,928
Seafood sales, wholesale	Establishments	36	29	30	42	30	33	36	28	18
	Employees	619	640	659	688	565	532	514	562	468
	Payroll	31,012	32,781	31,654	31,033	20,122	18,628	20,075	20,660	15,459
Seafood sales, retail	Establishments	50	59	55	44	48	42	48	51	54
	Employees	159	185	184	179	160	162	176	176	214
	Payroll	2,437	2,753	2,724	2,633	2,433	2,447	2,502	2,566	3,425

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	6	7	6	6	6	5	4	4	3
	Employees	ds	ds	ds	33	28	ds	ds	ds	ds
	Payroll	ds	ds	ds	1,883	2,040	1,700	ds	ds	ds
Deep sea freight transportation	Establishments	18	19	15	13	14	13	14	12	12
	Employees	185	193	ds	132	156	29	ds	51	236
	Payroll	10,306	10,658	ds	10,090	11,275	2,192	2,465	4,833	11,238
Deep sea passenger transportation	Establishments	0	0	0	1	0	0	0	1	1
	Employees	NA	NA	NA	ds	NA	NA	NA	ds	ds
	Payroll	NA	NA	NA	ds	NA	NA	NA	ds	ds
Marinas	Establishments	57	60	66	68	60	58	62	63	63
	Employees	ds	ds	ds	569	527	541	631	580	636
	Payroll	ds	ds	ds	12,701	15,571	15,736	17,428	16,986	17,921
Marine cargo handling	Establishments	18	17	17	17	17	18	17	20	10
	Employees	2,018	2,350	3,003	2,501	2,660	3,707	2,971	4,655	ds
	Payroll	68,696	80,706	104,596	110,857	97,869	87,410	84,675	108,674	ds
Navigational services to shipping	Establishments	8	8	10	11	11	9	8	8	10
	Employees	ds	136	ds	217	182	ds	ds	ds	ds
	Payroll	ds	7,784	ds	11,141	10,193	12,185	11,237	ds	ds
Port & harbor operations	Establishments	7	6	5	4	5	5	4	2	13
	Employees	ds	ds	196	98	ds	ds	ds	ds	ds
	Payroll	ds	ds	3,303	3,108	ds	ds	ds	ds	ds
Ship & boat building	Establishments	20	17	16	21	20	14	12	15	14
	Employees	ds	ds	1,967	2,225	2,159	ds	ds	ds	ds
	Payroll	ds	ds	64,667	68,646	69,096	ds	ds	ds	ds

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Tables | North Carolina



2013 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	9,579	821,508	231,047	343,855	5,744	274,004	113,697	150,534
Commercial Harvesters	2,436	132,801	54,196	73,575	2,436	132,801	54,196	73,575
Seafood Processors & Dealers	1,101	72,965	28,369	36,659	455	30,004	11,666	15,075
Importers	1,539	423,435	67,864	129,082	0	0	0	0
Seafood Wholesalers & Distributors	453	48,219	16,911	22,321	137	14,558	5,106	6,739
Retail	4,050	144,088	63,707	82,218	2,717	96,641	42,729	55,145

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	79,703	64,890	70,121	82,285	86,822	77,196	79,361	71,183	72,906	79,092
Finfish & Other	38,910	34,901	37,716	36,203	34,445	34,005	33,153	31,309	31,051	29,875
Shellfish	40,793	29,989	32,405	46,082	52,377	43,192	46,208	39,874	41,855	49,217
Key Species										
Atlantic croaker	3,528	3,409	3,563	2,714	3,142	3,004	3,491	3,164	2,136	1,724
Black sea bass	1,486	1,332	1,715	1,195	1,156	1,401	953	628	688	869
Blue crab	24,465	20,274	17,087	21,432	27,555	27,429	26,425	21,282	22,809	29,993
Clams	3,390	2,798	2,656	2,660	2,435	2,086	2,359	1,933	2,130	2,349
Flounders	11,503	10,963	13,301	11,335	10,886	10,124	10,845	8,890	7,421	7,059
Groupers	1,124	1,214	1,559	1,995	1,939	1,609	1,512	1,302	1,206	1,041
King mackerel	1,573	2,054	2,120	1,967	1,632	1,500	650	1,062	831	877
Shrimp	9,463	4,409	9,141	17,905	19,251	8,528	10,804	10,886	13,333	12,946
Snappers	873	1,116	953	1,601	1,784	1,073	963	1,004	900	917
Tunas	3,317	3,321	4,060	4,046	3,393	2,922	1,193	2,437	4,398	3,207

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	134,078	79,607	68,744	62,871	71,209	68,955	71,994	67,487	56,671	50,180
Finfish & Other	91,383	49,435	35,675	30,440	27,706	32,421	32,519	29,806	22,782	22,077
Shellfish	42,696	30,172	33,069	32,432	43,503	36,534	39,474	37,681	33,889	28,103
Key Species										
Atlantic croaker	11,993	11,903	10,397	7,271	5,792	6,135	7,312	5,054	3,107	1,929
Black sea bass	881	690	778	473	485	615	401	272	256	330
Blue crab	34,129	25,430	25,343	21,425	32,917	29,707	30,683	30,035	26,787	22,191
Clams	551	418	427	438	400	359	366	302	404	356
Flounders	7,302	5,937	6,272	4,754	5,009	5,256	5,001	4,102	2,736	2,728
Groupers	478	481	587	701	683	553	493	366	327	261
King mackerel	955	1,246	1,186	1,059	1,037	778	329	408	297	345
Shrimp	4,881	2,358	5,737	9,537	9,427	5,408	5,955	5,140	6,141	4,860
Snappers	339	433	345	550	603	374	320	326	279	276
Tunas	1,424	1,271	1,982	1,836	1,041	1,028	703	1,056	1,482	1,283

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic croaker	0.29	0.29	0.34	0.37	0.54	0.49	0.48	0.63	0.69	0.89
Black sea bass	1.69	1.93	2.21	2.53	2.39	2.28	2.38	2.31	2.69	2.64
Blue crab	0.72	0.80	0.67	1.00	0.84	0.92	0.86	0.71	0.85	1.35
Clams	6.15	6.69	6.21	6.08	6.09	5.82	6.44	6.39	5.28	6.61
Flounders	1.58	1.85	2.12	2.38	2.17	1.93	2.17	2.17	2.71	2.59
Groupers	2.35	2.52	2.65	2.84	2.84	2.91	3.07	3.56	3.69	3.98
King mackerel	1.65	1.65	1.79	1.86	1.57	1.93	1.98	2.60	2.79	2.54
Shrimp	1.94	1.87	1.59	1.88	2.04	1.58	1.81	2.12	2.17	2.66
Snappers	2.57	2.58	2.76	2.91	2.96	2.87	3.01	3.08	3.22	3.32
Tunas	2.33	2.61	2.05	2.20	3.26	2.84	1.70	2.31	2.97	2.50

2013 Economic Impacts of North Carolina Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	585	55,108	21,898	31,429
	Private Boat	1,575	157,514	58,421	95,738
	Shore	3,320	312,739	111,053	184,018
Total Durable Expenditures		10,669	1,076,031	442,383	677,887
Total State Economic Impacts		16,149	1,601,392	633,755	989,072

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	23,585	9,394
Private Boat	17,819	121,945
Shore	100,687	128,762
Total	142,091	260,101

Equipment	Durable Goods Expenditures
Fishing Tackle	255,039
Other Equipment	86,516
Boat Expenses	468,651
Vehicle Expenses	427,755
Second Home Expenses	63,165
Total Durable Expenditures	1,301,126

Total State Trip and Durable Equipment Expenditures	1,703,318

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	613	685	588	564	587	446	544	490	614	564
Non-Coastal	290	285	265	265	303	259	296	254	283	240
Out-of-State	1,156	1,280	1,374	1,079	1,079	976	1,073	755	764	601
Total Anglers	2,058	2,250	2,227	1,908	1,970	1,681	1,914	1,499	1,661	1,405

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	183	259	234	218	192	146	165	152	160	111
Private	2,640	2,346	2,452	2,671	2,461	2,005	2,199	1,899	2,061	2,101
Shore	4,089	3,938	4,178	3,445	4,246	3,158	3,313	2,690	3,082	2,756
Total Trips	6,913	6,543	6,864	6,333	6,898	5,309	5,678	4,740	5,303	4,968

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black sea bass	H	397	231	125	110	58	107	139	95	76	50
	R	1,300	1,195	1,176	952	560	667	1,104	1,063	2,085	1,368
Bluefish	H	1,231	1,382	917	1,258	1,178	828	1,104	1,153	889	1,184
	R	1,762	2,044	1,836	2,377	2,136	1,553	2,221	1,923	1,036	1,873
Dolphinfish	H	268	663	522	533	358	367	499	472	327	212
	R	5	2	24	5	2	3	5	8	2	3
Drum (Atlantic croaker and spot)	H	4,337	3,340	3,535	3,539	2,163	1,425	1,313	1,454	1,073	1,876
	R	2,914	2,736	5,167	2,805	2,742	3,134	2,469	2,798	2,014	3,298
Drum (spotted seatrout)	H	285	586	565	531	655	608	195	216	501	369
	R	261	1,059	595	849	881	1,213	1,685	1,916	1,647	1,427
Flounder (lefteye and summer)	H	188	156	150	190	71	100	143	92	106	91
	R	1,341	878	925	1,090	1,689	1,213	1,586	990	1,397	1,529
King mackerel	H	148	139	143	269	105	91	37	15	28	23
	R	79	73	32	44	25	12	7	1	3	5
Spanish mackerel	H	326	336	306	495	744	678	484	368	491	497
	R	150	180	96	259	449	312	294	171	235	289
Striped bass	H	432	137	99	49	36	12	34	106	8	20
	R	585	124	63	82	175	121	108	296	176	124
Yellowfin tuna	H	169	181	166	102	26	29	23	26	57	45
	R	10	8	13	1	(1)	1	1	(1)	4	1

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

North Carolina's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	213,057 (2.9%)	3,365,633 (2.9%)	109.57 (2.6%)	179.05 (2.7%)	331.60 (2.7%)	0.39
2012	217,404 (2.9%)	3,352,151 (2.9%)	137.93 (2.5%)	233.41 (2.7%)	452.36 (2.8%)	0.13
% change	2	-0.4	20.6	23.3	26.7	-200

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	27	26	27	30	ds	34	40	50	46
	Receipts	1,515	1,106	1,084	1,813	ds	1,297	1,652	2,705	1,630
Seafood sales, retail	Firms	144	130	115	150	114	140	126	144	136
	Receipts	12,294	10,913	11,342	14,999	10,918	12,188	9,057	10,386	11,990

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

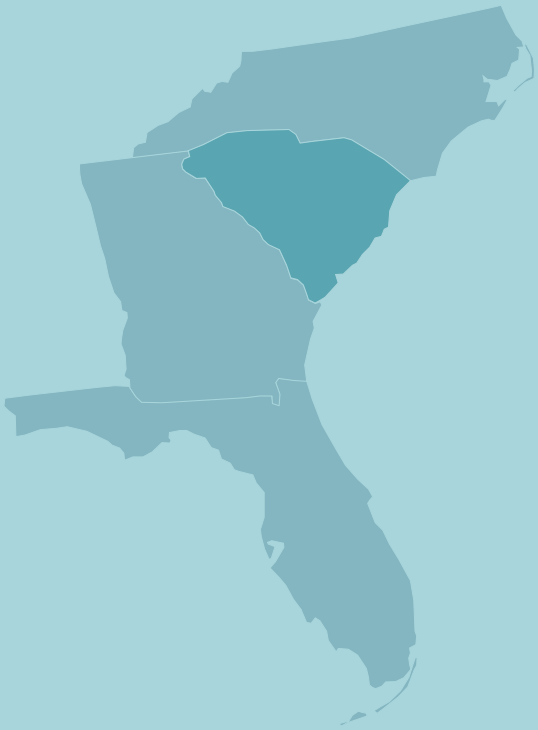
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	18	17	18	22	18	16	16	14	12
	Employees	ds	ds	475	ds	232	170	171	ds	ds
	Payroll	ds	ds	11,563	12,659	5,373	4,461	4,749	4,830	5,084
Seafood sales, wholesale	Establishments	72	77	70	71	65	66	66	64	59
	Employees	627	703	582	597	559	584	590	603	793
	Payroll	17,411	17,577	16,543	15,655	16,843	17,383	18,348	19,344	23,949
Seafood sales, retail	Establishments	88	90	89	86	90	77	82	84	88
	Employees	340	316	250	241	219	243	247	244	289
	Payroll	4,234	4,185	4,129	4,170	4,143	4,494	5,017	5,250	5,860

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	5	5	4	6	4	6	4	5	6
	Employees	ds	ds	ds	54	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	2,061	ds	2,366	ds	ds	ds
Deep sea freight transportation	Establishments	7	7	8	6	5	6	10	8	7
	Employees	ds	ds	ds	ds	ds	9	ds	ds	25
	Payroll	ds	ds	ds	510	533	617	ds	ds	1,579
Deep sea passenger transportation	Establishments	2	2	1	1	0	1	0	1	0
	Employees	ds	ds	ds	ds	NA	ds	NA	ds	NA
	Payroll	ds	ds	ds	ds	NA	ds	NA	ds	NA
Marinas	Establishments	97	103	103	96	107	105	102	104	102
	Employees	644	654	681	522	656	501	536	524	531
	Payroll	16,529	16,530	16,616	14,922	17,164	15,858	16,238	16,187	15,975
Marine cargo handling	Establishments	10	12	9	13	13	12	11	14	6
	Employees	668	641	757	652	760	914	600	ds	ds
	Payroll	28,676	25,988	19,736	25,164	23,328	20,707	20,755	ds	ds
Navigational services to shipping	Establishments	6	8	7	14	10	11	13	11	8
	Employees	ds	ds	ds	102	87	96	94	86	90
	Payroll	ds	ds	ds	3,773	3,668	4,313	3,968	4,041	3,203
Port & harbor operations	Establishments	5	5	5	3	3	2	4	3	9
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	62	65	74	78	77	64	60	57	60
	Employees	3,622	3,957	4,232	ds	4,281	1,983	1,501	1,515	1,760
	Payroll	127,472	133,665	153,672	ds	138,243	68,004	64,807	66,929	74,843

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Tables | South Carolina



2013 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	1,742	124,561	40,713	57,853	1,409	73,525	30,310	40,284
Commercial Harvesters	523	35,497	14,174	19,440	523	35,497	14,174	19,440
Seafood Processors & Dealers	119	8,921	3,490	4,488	104	7,833	3,064	3,940
Importers	153	42,101	6,748	12,834	0	0	0	0
Seafood Wholesalers & Distributors	66	6,635	2,331	3,062	37	3,725	1,309	1,719
Retail	882	31,407	13,971	18,029	745	26,471	11,764	15,185

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	18,542	17,570	17,025	16,017	17,872	17,256	21,205	23,300	24,061	21,618
Finfish & Other	5,042	4,781	4,995	4,744	4,614	5,338	6,740	8,429	6,670	6,149
Shellfish	13,499	12,789	12,031	11,274	13,259	11,918	14,465	14,871	17,391	15,469
Key Species										
Black sea bass	302	191	168	236	257	362	213	182	303	434
Blue crab	3,591	3,766	3,304	3,511	4,187	4,059	3,593	5,084	5,804	6,367
Clams	1,238	934	834	697	535	542	688	638	584	750
Groupers	1,020	1,013	1,335	1,524	1,421	1,021	949	1,169	640	933
Oysters	1,229	1,471	1,369	1,375	1,739	1,738	1,858	1,975	2,155	2,337
Sharks	128	136	144	78	78	56	123	166	136	76
Shrimp	7,385	6,572	6,481	5,634	6,712	5,487	8,168	7,008	8,688	5,823
Snappers	1,237	1,190	823	773	864	568	1,079	1,080	1,338	1,001
Swordfish	555	NA	NA	NA	187	1,116	1,944	2,777	1,635	983
Tilefish	221	143	271	5	66	9	25	8	128	379

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	12,439	11,212	10,602	9,310	10,081	9,599	10,567	12,131	12,325	9,735
Finfish & Other	2,768	2,274	2,249	1,994	1,940	2,384	2,774	3,220	2,424	2,026
Shellfish	9,670	8,938	8,353	7,316	8,141	7,215	7,793	8,911	9,902	7,709
Key Species										
Black sea bass	212	115	86	114	132	168	98	100	118	163
Blue crab	4,374	4,440	4,215	4,137	4,484	4,014	3,275	5,439	5,905	5,133
Clams	211	175	165	135	119	123	152	137	102	117
Groupers	363	319	399	404	379	274	241	269	148	201
Oysters	275	308	291	285	324	309	332	337	362	375
Sharks	206	174	147	105	110	63	87	108	104	52
Shrimp	4,773	3,957	3,650	2,727	3,162	2,716	3,951	2,918	3,435	1,999
Snappers	492	447	267	250	277	194	365	356	427	299
Swordfish	200	NA	NA	NA	71	459	630	741	500	272
Tilefish	124	80	139	4	28	5	15	4	46	150

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black sea bass	1.42	1.66	1.97	2.07	1.94	2.15	2.16	1.82	2.58	2.67
Blue crab	0.82	0.85	0.78	0.85	0.93	1.01	1.10	0.93	0.98	1.24
Clams	5.86	5.34	5.06	5.17	4.51	4.42	4.54	4.65	5.71	6.40
Groupers	2.81	3.17	3.35	3.77	3.75	3.73	3.94	4.35	4.33	4.64
Oysters	4.46	4.78	4.71	4.82	5.36	5.63	5.60	5.85	5.96	6.24
Sharks	0.62	0.78	0.98	0.74	0.71	0.89	1.42	1.53	1.30	1.45
Shrimp	1.55	1.66	1.78	2.07	2.12	2.02	2.07	2.40	2.53	2.91
Snappers	2.51	2.66	3.08	3.09	3.12	2.92	2.95	3.03	3.13	3.34
Swordfish	2.78	NA	NA	NA	2.64	2.43	3.09	3.75	3.27	3.61
Tilefish	1.78	1.78	1.95	1.36	2.30	2.00	1.71	1.84	2.78	2.53

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of South Carolina Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	306	27,557	11,371	15,916
	Private Boat	405	33,489	12,249	19,764
	Shore	1,745	152,710	53,204	90,095
Total Durable Expenditures		1,824	170,626	68,948	106,133
Total State Economic Impacts		4,280	384,382	145,772	231,908

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-residents	Residents	Fishing Tackle	73,981
For-Hire	13,482	4,482	Other Equipment	15,671
Private Boat	7,323	26,989	Boat Expenses	98,646
Shore	107,831	17,650	Vehicle Expenses	5,374
Total	128,637	49,121	Second Home Expenses	0
			Total Durable Expenditures	193,673
Total State Trip and Durable Equipment Expenditures				371,431

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	227	230	234	277	236	231	210	148	207	166
Non-Coastal	101	120	146	113	103	112	104	66	123	84
Out-of-State	334	448	617	551	604	554	494	264	406	602
Total Anglers	662	798	997	941	942	898	809	478	736	852

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	78	25	21	85	69	80	77	81	25	48
Private	1,231	949	978	1,132	1,266	1,008	1,078	847	1,189	748
Shore	1,138	1,220	1,240	813	1,116	1,325	1,143	879	992	1,181
Total Trips	2,448	2,194	2,238	2,030	2,451	2,413	2,298	1,806	2,206	1,977

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black sea bass	H	238	74	182	125	90	37	216	56	91	24
	R	770	513	583	921	864	471	640	661	811	381
Bluefish	H	132	247	134	176	128	135	444	224	206	299
	R	386	317	622	677	333	252	318	550	169	309
Drum (Atlantic croaker and spot)	H	902	502	1,229	643	2,799	829	370	947	1,030	832
	R	530	504	1,092	376	394	840	354	464	358	1,751
Drum (southern kingfish)	H	1,149	998	926	699	823	1,056	389	609	778	1,195
	R	750	391	1,163	540	612	690	(1)	68	146	(1)
Drum (spotted seatrout)	H	189	272	231	160	154	124	101	66	236	126
	R	277	462	544	572	734	400	407	280	817	601
Porgies (sheepshead)	H	95	45	61	109	217	222	102	171	76	26
	R	22	47	27	21	60	23	58	93	45	81
Red drum	H	108	131	48	72	120	70	173	161	121	98
	R	438	494	540	437	553	751	787	665	543	674
Sharks[2]	H	15	38	(1)	3	5	13	(1)	3	3	1
	R	402	604	514	171	259	397	468	347	626	1,134
Southern flounder	H	216	85	111	77	103	89	109	102	91	62
	R	89	73	200	106	103	74	(1)	17	35	(1)
Spanish mackerel	H	56	70	23	95	54	74	71	87	80	22
	R	85	185	28	97	68	56	28	67	98	24

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.
[2] Sharks include species within the requiem shark family, blacktip sharks, Atlantic sharpnose sharks, and unidentified sharks.

South Carolina's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	101,165 (1.4%)	1,560,573 (1.4%)	46.66 (1.1%)	78.02 (1.2%)	136.18 (1.1%)	0.18
2012	101,228 (1.4%)	1,548,516 (1.3%)	56.67 (1%)	99.65 (1.2%)	177.99 (1.1%)	0.08
% change	0.1	-0.8	17.7	21.7	23.5	-125

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	22	14	12	12	15	21	23	32	35
	Receipts	1,797	2,234	1,303	857	1,155	1,794	1,386	1,326	1,868
Seafood sales, retail	Firms	74	61	76	75	64	77	78	87	67
	Receipts	4,612	3,588	3,427	3,876	4,650	4,709	3,978	5,535	4,818

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	4	3	3	5	2	2	2	1	0
	Employees	28	7	ds	ds	ds	ds	ds	ds	ds
	Payroll	805	145	ds	ds	ds	ds	ds	ds	ds
Seafood sales, wholesale	Establishments	18	22	19	26	20	15	16	12	15
	Employees	ds	211	191	220	108	111	120	101	125
	Payroll	ds	5,818	5,542	6,186	3,770	3,676	3,868	3,760	4,506
Seafood sales, retail	Establishments	58	64	62	60	64	57	56	61	60
	Employees	ds	206	190	210	292	261	260	245	228
	Payroll	ds	2,773	2,905	3,155	4,871	4,901	4,580	4,231	3,670

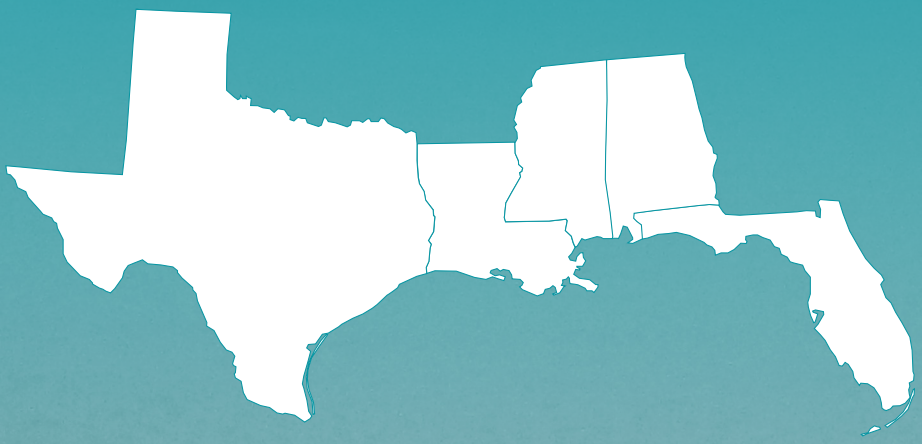
Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	4	4	4	5	4	4	4	4	5
	Employees	ds	45	ds	60	ds	ds	ds	ds	40
	Payroll	ds	1,882	ds	2,352	ds	ds	ds	ds	2,625
Deep sea freight transportation	Establishments	7	10	9	6	4	8	7	6	6
	Employees	ds	113	ds	67	ds	ds	20	ds	ds
	Payroll	ds	4,600	ds	3,419	659	ds	758	722	ds
Deep sea passenger transportation	Establishments	1	1	1	1	7	6	2	2	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	69	70	71	72	68	69	73	75	70
	Employees	378	398	452	469	588	533	537	543	595
	Payroll	7,645	8,050	10,105	11,498	13,753	12,642	13,786	15,805	15,408
Marine cargo handling	Establishments	17	18	17	15	17	14	12	14	10
	Employees	2,253	1,994	2,707	1,419	1,282	1,953	1,731	1,717	715
	Payroll	81,691	66,767	83,142	75,967	56,812	43,170	39,625	49,172	30,381
Navigational services to shipping	Establishments	5	7	8	6	8	8	7	8	10
	Employees	ds	ds	155	152	227	208	222	217	247
	Payroll	ds	ds	7,588	7,369	11,916	12,522	12,591	11,922	16,625
Port & harbor operations	Establishments	1	1	1	3	3	2	2	5	7
	Employees	ds	ds	ds	113	ds	ds	ds	ds	676
	Payroll	ds	ds	ds	7,058	ds	ds	ds	ds	29,332
Ship & boat building	Establishments	46	48	45	41	46	41	39	41	39
	Employees	2,380	2,672	2,425	2,962	3,001	1,929	1,922	1,943	1,980
	Payroll	90,974	97,087	92,098	102,531	97,743	73,988	74,945	85,568	90,942

[1] 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.
[2] ds = these data are suppressed.

Gulf of Mexico Region

- Alabama
- West Florida
- Louisiana
- Mississippi
- Texas



Kayak fishing, Everglades National Park, Florida
(photo credit: Sean Howard)

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 (NMFS) 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).

Gulf of Mexico Region FMPs

1. Red drum
2. Shrimp
3. Reef fish
4. Coastal migratory pelagic resources (with SAFMC)
5. Spiny lobster (with SAFMC)
6. Corals
7. Aquaculture

Four stocks or stock complexes in the Gulf of Mexico Region were identified as overfished in 2013: gag, gray triggerfish, greater amberjack, and red snapper. Hogfish and the jack complex were listed as subject to overfishing in 2013; gag, gray triggerfish, and greater amberjack were removed from the overfishing list in 2013.

In 2010, the Deepwater Horizon MC252 oil spill severely affected Gulf fisheries. Large parts of the Gulf of Mexico, including state and federal waters, were closed to fishing during May through October 2010. Both Alabama and Mississippi reported less than half and Louisiana about three quarters of their annual shrimp landings compared to the average of the previous three years. Funded as part of the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies (RESTORE) Act of 2012, NOAA's RESTORE Act Science Program's mission is to carry out research, observation, and monitoring to support the long-term sustainability of the ecosystem, fish stocks, fish habitat, and the recreational, commercial, and charter-fishing industry in the Gulf of Mexico.[1]

Amendments to the Reef Fish FMP currently being considered by the Council include Amendments 28, 39, and 40. Amendment 28 addresses the allocation of red snapper between the commercial and recreational sectors. The purpose of this action is to reallocate the red snapper harvest consistent with the 2015 red snapper assessment update to ensure the allowable catch and recovery benefits are fairly and equitably allocated between the commercial and recreational sectors to achieve optimum yield. Amendment 39 examines dividing the federal recreational red snapper quota among states or regions. This division would potentially give states/regions more flexibility in choosing seasons and bag limits, but would not necessarily result in more fishing days. Under regional management, red snapper would remain a federally-managed species subject to federal conservation goals, and the Council would continue to oversee management of the stock. Amendment 40 addresses separating the private angling and federal for-hire components of the recreational red snapper fishery and allocating the recreational red snapper quota between these two components. This would be expected to provide a basis for flexible management approached tailored to each component and reduce the likelihood for recreational quota overruns.

There are two catch share programs in the Gulf of Mexico. These are the: 1) Red Snapper Individual Fishing Quota (IFQ) Program, and 2) Grouper-Tilefish IFQ Program. Below is a brief 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. Key performance indicators of this program show that relative to its Baseline period (3-year period prior to implemenation), 2012 red snapper revenue and red snapper revenue per active vessel increased while red snapper quota, landings and active vessels decreased. The red snapper commercial quota has not been exceeded since 2007. In 2010, the commercial red snapper sector was less affected by the fishing closures due to the Deepwater Horizon oil spill because fishermen were able to transfer quota allocation to fishermen fishing in other areas of the Gulf of Mexico or used their quota allocation after fishing areas re-opened.

The Grouper-Tilefish IFQ Program was implemented in 2010 to reduce overcapacity and mitigate derby fishing conditions in the grouper-tilefish segment of the com-

[1] For more information on the NOAA RESTORE Act Science Program, see: http://restoreactscienceprogram.noaa.gov/

mercial reef fish fishery. The key performance indicators of this program show that for 2012, catch share species revenue, revenue per vessel, and landings increased while quota and active vessels decreased relative to the Baseline period. In addition, the commercial quota was not exceeded in any year since the program was implemented.

COMMERCIAL FISHERIES

In 2013, commercial fishermen in the Gulf of Mexico Region landed 1.4 billion pounds of finfish and shellfish earning $937 million for their harvest. Landings revenue was dominated by shrimp ($504 million), which made up 54% of revenue and 15% of landings. Menhaden ($95 million), oysters ($77 million), and blue crab ($61 million) also contributed a large portion of regional landings revenue.

Louisiana and Texas had the highest landings revenue in the region in 2013, $400 million and $268 million, respectively. In terms of pounds landed, Louisiana had the highest landings (just over 1 billion pounds) followed by Mississippi (181 million pounds).

Key Gulf of Mexico Region Commercial Species

- Blue crab
- Crawfish
- Groupers
- Menhaden
- Mullets
- Oysters
- Red snapper
- Shrimp
- Stone crab
- Tunas

Economic Impacts[2,3]

In 2013, the Gulf of Mexico Region's seafood industry generated $15.3 billion in sales impacts in Florida (both east and west Florida combined), $2.6 billion in Texas, $2.1 billion in Louisiana, $527 million in Alabama, and $268 million in Mississippi. Florida generated the largest employment (78,000 jobs), income ($2.8 billion), and value added ($5.1 billion) impacts. The smallest impacts were generated in Mississippi with 6,400 jobs, $107 million in income, and $139 million in value added impacts.

The sector that generated the greatest employment impacts by state was the importers sector with 40,000 jobs in Florida. Florida importers also generated higher sales impacts ($11 billion) than any other sector in any another state in the region and also had the greatest value added impacts ($3.4 billion).

Landings Revenue

Landings revenue in the Gulf of Mexico Region totaled $937 million in 2013. This was a 40% increase (3% in real terms) from 2004 levels and a 24% increase from 2012. Louisiana had the highest landing revenues ($400 million) followed by Texas ($268 million) and West Florida ($179 million).

Shellfish landings revenue totaled $732 million in 2013, an increase of 39% (5% in real terms) since 2004 and a 25% increase since 2012. Shellfish landings revenue was greatest in Louisiana ($291 million), Texas ($254 million), and West Florida ($112 million). Finfish landings revenue totaled ($205 million) and was highest in Louisiana ($108 million) and West Florida ($68 million).

Between 2004 and 2013, crawfish increased 245% (154% in real terms) primarily due to higher landings; menhaden increased 112% (56% in real terms) due to higher prices; and red snapper increased 76% (29% in real terms) due to a combination of higher prices and landings. Red snapper landings were at their highest level since 1984 largely due to the quota increasing 120% from 2009-2013. Tunas (-40% or -56% in real terms), groupers (-9% or -33% in real terms), and stone crabs (-7% or -32% in real terms) experienced notably large decreases over the same 10-year period.

Landings

Fishermen in the Gulf of Mexico Region landed 1.4 billion pounds of finfish and shellfish in 2013. This was a 6% decrease from 2004 and an 8% increase from 2012. Finfish landings contributed 78% of total landings volume in the Gulf of Mexico Region (1.1 billion pounds) in 2013. From 2012 to 2013, finfish landings experienced an 11% increase in volume. Shellfish landings decreased 2% from 2012 levels. Menhaden and shrimp had the highest annual landings in the Gulf of Mexico Region in 2013, 1 billion pounds and 205 million pounds, respectively. Together they accounted for 88% of the total landings in 2013. Menhaden landings decreased by less than 1% while shrimp landings decreased 20% from 2004 to 2013.

[2] 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).
[3] Commercial economic impacts were not available seperately for West Florida. Impacts for the entire state of Florida are reported here.

From 2004 to 2013 landings volume for crawfish (up 132%) and red snapper (up 13%) experienced notably large increases. Species or species groups with large decreases in landings value included tunas (-46%), groupers (-39%), and stone crab (-37%). Species or species groups with large changes in landings between 2012 and 2013 included crawfish (+195%), red snapper (+34%) mullets (+27%), tunas (-28%), and stone crabs (-28%).

Commercial Fisheries Facts

Landings revenue

- On average, between 2004 and 2013, the key species or species groups accounted for 90% of total revenue, generating $643 million in the Gulf of Mexico Region.
- Shrimp had higher landings revenues than any other species or species group, averaging $388 million in landings revenue from 2004 to 2013.

Landings

- Key species or species groups contributed an average of 96% annually to total landings between 2004 and 2013, or 1.3 billion pounds annually.
- Menhaden contributed the most to landings in the region, averaging 976 million pounds from 2004 to 2013.

Prices

- Stone crab had the highest average annual ex-vessel price from 2004 to 2013:$4.52
- Menhaden had the lowest average annual ex-vessel price from 2004 to 2013:$0.06

Prices

The ex-vessel prices for the Gulf of Mexico Region's key species and species groups in 2013 were higher than their 10 year average for all ten of the key species (eight of the species in real terms). Ex-vessel prices for menhaden (125%, 80% in real terms), blue crab (89%, 39% in real terms), and shrimp (72%, 26% in real terms) increased the most between 2004 and 2013. Relative to ex-vessel prices in 2012, the Gulf of Mexico Region's stone crab (42%), blue crab (35%), and shrimp (31%) had the greatest increase.

RECREATIONAL FISHERIES

In 2013, 3.4 million recreational anglers took over 25 million fishing trips in the Gulf of Mexico Region. Over 88% of these anglers were residents of a regional coastal county. Of the total fishing trips taken, 54% were taken from a private or rental boat and another 43% were shore-based. Spotted seatrout were the most frequently caught species or species group with 31 million fish caught in 2013.

Key Gulf of Mexico Region Recreational Species

- Atlantic croaker
- Gulf and southern kingfish
- Sand and silver seatrout
- Spotted seatrout
- Sheepshead porgy
- Red drum
- Red snapper
- Southern flounder
- Spanish mackerel
- Striped mullet

Economic Impacts and Expenditures[4]

The contribution of recreational fishing activities in the Gulf of Mexico 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 West Florida were the highest in the region with over 76,000 full- and part-time jobs generated by recreational fishing activities in the state. Mississippi had the lowest level of employment impacts in the Gulf region with 1,600 jobs. Throughout the Gulf of Mexico Region, most of the employment impacts in 2013 were generated by expenditures on durable equipment: 85% region-wide.

In addition to employment impacts, the contribution of recreational fishing activities to the Gulf of Mexico Region's economy can be measured in terms of sales impacts, income impacts, and the contribution of these activities to gross domestic product (value added impacts). In 2013, sales, income, and value added impacts were the highest in West Florida with $9.1 billion in sales impacts, $3.4 billion in income impacts, and $5.3 billion in value added. These impacts were lowest in Mississippi.

Overall, total fishing trip and durable equipment expenditures across the Gulf of Mexico Region in 2013 were $11.5 billion. Approximately 85% of these expenditures were related to durable equipment purchases. The

[4] Expenditure estimates were generated from the 2011 National Marine Recreational Fishing Expenditure 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: https://www.st.nmfs.noaa.gov/economics/publications/marine-angler-expenditures/marine-angler-2011).

greatest expenditures were for boat expenses ($5.2 billion), followed by fishing tackle ($1.6 billion), and vehicle expenses ($1.3 billion).

Recreational Fishing Facts

Participation
- An average of 3.2 million anglers fished in the Gulf of Mexico Region annually from 2004 to 2013.
- Coastal county residents made up 91% of total anglers in this region from 2004 to 2013.

Fishing trips
- In the Gulf of Mexico Region, an average of 23.7 million fishing trips were taken annually from 2004 to 2013.
- Private or rental boat and shore-based fishing trips accounted for an annual average of 13.8 million and 9 million fishing trips, respectively, from 2004 to 2013.

Harvest and release
- Spotted seatrout was the most commonly caught key species or species group, averaging 31.3 million fish over the 10 year time period. Of these, about 61% were released rather than harvested.

Fishing trip-related expenditures by the Gulf of Mexico Region's non-residents totaled over $663 million of which the greatest portion can be attributed to for-hire-based fishing trips ($268 million). Residents of the Gulf of Mexico Region spent $1.1 billion on saltwater fishing trips, with most of these expenses related to private boat trips ($622 million).

Participation

There were 3.4 million recreational anglers who fished in the Gulf of Mexico Region in 2013. This was a 4% decrease from 2004 and a 10% increase from 2012. About 88% of these anglers were Gulf of Mexico Region residents of a coastal county.

Fishing Trips

Recreational fishermen took 25.2 million fishing trips in the Gulf of Mexico Region in 2013. This was a 5% decrease from 2004 and a 9% increase from 2012. Of the total trips taken in Gulf of Mexico Region in 2013, approximately 54% of the trips were private or rental boat based trips. The other most popular mode of fishing was shore based (43% of trips).

Harvest and Release

Of the Gulf of Mexico Region's key species and species groups, spotted seatrout (31.5 million fish) and red drum (11.6 million fish) were the most often caught by anglers in 2013.

MARINE ECONOMY[5,6]

Across all sectors of the economy in Alabama, Louisiana, Mississippi, Texas, and Florida over 20.4 million full- and part-time employees were employed by about 1.3 million establishments in 2012. Annual payroll totaled $888 billion. Total employee compensation in the Gulf of Mexico region totaled $1.4 trillion and the combined gross state product of all states totaled about $2.8 trillion.[7]

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.[8] 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 US CFLQ is 1; a state CFLQ less than (greater than) 1 implies that there is less (more) commercial fishing in this state than the national average.

In 2012, the commercial fishing location quotient (CFLQ) for Louisiana was the highest in the region at 1.51. Louisiana's CFLQ suggests that the level of employment in commercial fishing-related industries in this state is approximately 1.5 times the level of employment in these industries nationwide. The 2012 CFLQ in Texas was the lowest in the region at 0.2.

For this report, the marine economy, a subset of the regional economy, is comprised of two industry sectors: 1) seafood sales and processing, which includes both employer establishments and nonemployer 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 are comprised 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 establish-

[5] Marine Economy information was not available for West Florida, information for the entire state of Florida is provided here.
[6] Unless otherwise stated, data is from the U.S. Census Bureau, http://censtats.census.gov/ (accessed September 15, 2014).
[7] 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 (accessed September 15, 2014).
[8] U.S. Bureau of Labor Statistics, "Location Quotient Calculator," http://data.bls.gov/location_quotient/ (accessed September 15, 2014).

ments or firms, employees, and total annual payroll or receipts.

Seafood Sales and Processing

In 2012, there were 582 nonemployer firms engaged in seafood product preparation and packaging across the Gulf of Mexico region. This was a 41% increase from 2004 levels. Florida (307) and Texas (123) had the largest number of firms. Nonemployer firms in the seafood product preparation and packaging sector had receipts totaling $36 million in 2012. From 2004-2012, the number of employer establishments in this sector decreased 25% to 119. The largest number of employer establishments (35) engaged in seafood product preparation and packaging was located in Louisiana. The number of employees in the seafood product preparation and packaging sector decreased 33% from 2004 to 2012 to 7,119 employees. Payroll in this sector was $205 million in 2012, a substantial (14%) decline from 2004.

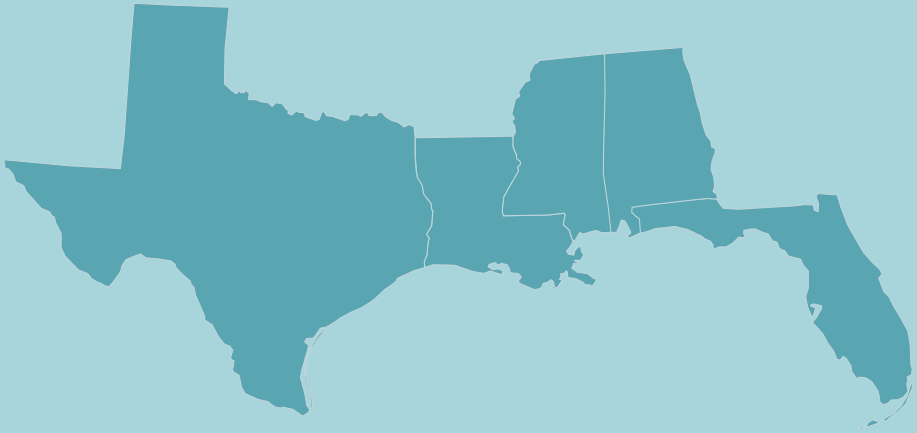
There were 433 seafood wholesale establishments in the Gulf of Mexico region in 2012, a decrease of 22% from 2004. Most of these establishments (226) were located in Florida. The number of employees in the seafood wholesale sector decreased 18% from 2004 to 2012 to 3,839. Payroll in this sector was $134 million in 2012.

Nonemployer firms engaged in seafood retail sales in the Gulf of Mexico region totaled 879 in 2012, a 22% increase from 2004 levels. Florida (383), Texas (194), and Louisiana (184) had the largest number of firms in this sector. Region-wide, there were 353 employer establishments in the seafood retail sales sector in 2012.

Transport, Support, and Marine Operations

The size of the Transport, Support, and Marine Operations sectors in the Gulf of Mexico 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, the Ship and Boat Building Sector consisted of 501 establishments employing over 30,000 workers and contributing $1.6 billion in payroll across five of the six states in the region.

Tables | Gulf of Mexico Region



2013 Economic Impacts of the Gulf of Mexico Seafood Industry (thousands of dollars)

		With Imports				Without Imports			
	Landings Revenue	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Alabama	55,434	12,090	526,767	200,494	265,580	11,498	456,899	183,219	239,188
Louisiana	399,516	39,743	2,074,255	742,761	1,023,033	37,724	1,765,470	678,404	916,004
Mississippi	34,696	6,432	268,367	107,340	138,779	6,413	265,670	106,770	137,842
Texas	267,532	31,553	2,555,824	754,450	1,123,529	25,443	1,491,869	540,667	758,855
Florida	179,483	78,378	15,319,435	2,878,309	5,136,623	11,044	938,589	249,268	381,866

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	669,002	625,038	691,220	690,211	663,848	636,427	624,629	811,905	753,978	936,660
Finfish & Other	143,479	122,642	135,982	145,584	146,341	142,028	117,363	184,536	167,286	204,967
Shellfish	525,523	502,396	555,238	544,626	517,507	494,400	507,265	627,368	586,692	731,693
Key Species										
Blue crab	42,292	37,961	43,355	46,028	39,813	45,484	41,264	48,794	48,852	61,264
Crawfish	4,810	8,360	1,290	9,034	9,507	15,547	13,971	9,914	8,163	16,593
Groupers	25,807	24,692	22,795	20,242	22,927	17,292	13,580	19,679	23,372	23,396
Menhaden	44,921	32,938	44,946	62,110	64,376	60,606	51,750	92,855	67,391	95,277
Mullets	8,956	6,593	9,429	5,543	6,099	6,105	5,221	10,368	7,440	13,222
Oysters	60,845	56,510	62,316	69,542	60,464	73,464	55,085	65,273	73,787	76,729
Red snapper	11,676	11,336	13,167	9,570	7,972	7,984	10,202	11,413	13,489	20,493
Shrimp	366,426	360,513	397,706	367,060	366,808	327,608	339,228	441,384	409,270	503,842
Stone crab	26,704	21,223	24,115	26,242	19,040	17,910	23,384	24,521	24,038	24,763
Tunas	12,335	9,431	8,461	10,535	6,170	8,180	2,688	5,516	10,132	7,352

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	1,475,139	1,198,203	1,362,326	1,404,307	1,278,879	1,435,665	1,072,068	1,792,550	1,293,195	1,392,364
Finfish & Other	1,110,240	887,920	974,969	1,071,322	994,374	1,071,708	810,649	1,472,798	987,374	1,092,148
Shellfish	364,899	310,283	387,357	332,985	284,505	363,957	261,419	319,752	305,821	300,216
Key Species										
Blue crab	60,581	50,041	67,481	57,964	49,258	61,277	41,240	55,606	50,079	46,543
Crawfish	8,537	15,177	1,469	15,848	15,735	19,312	14,557	9,599	6,712	19,823
Groupers	11,912	10,776	9,092	7,308	8,560	6,633	4,870	6,987	7,959	7,280
Menhaden	1,023,260	815,495	901,398	1,005,325	927,517	1,002,579	753,442	1,398,654	915,582	1,020,244
Mullets	13,750	9,023	12,727	8,933	10,609	11,303	8,963	14,233	10,654	13,482
Oysters	25,052	20,174	19,674	22,518	20,723	22,829	15,824	18,742	20,637	19,230
Red snapper	4,677	4,109	4,637	2,998	2,370	2,503	3,259	3,567	3,957	5,286
Shrimp	255,782	216,291	288,973	225,163	188,806	250,572	178,902	221,469	218,094	204,527
Stone crab	5,971	4,534	4,806	5,893	6,169	5,407	5,112	5,482	5,226	3,778
Tunas	3,882	3,050	2,851	3,426	1,786	2,836	1,322	1,588	2,931	2,107

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.70	0.76	0.64	0.79	0.81	0.74	1.00	0.88	0.98	1.32
Crawfish	0.56	0.55	0.88	0.57	0.60	0.81	0.96	1.03	1.22	0.84
Groupers	2.17	2.29	2.51	2.77	2.68	2.61	2.79	2.82	2.94	3.21
Menhaden	0.04	0.04	0.05	0.06	0.07	0.06	0.07	0.07	0.07	0.09
Mullets	0.65	0.73	0.74	0.62	0.57	0.54	0.58	0.73	0.70	0.98
Oysters	2.43	2.80	3.17	3.09	2.92	3.22	3.48	3.48	3.58	3.99
Red snapper	2.50	2.76	2.84	3.19	3.36	3.19	3.13	3.20	3.41	3.88
Shrimp	1.43	1.67	1.38	1.63	1.94	1.31	1.90	1.99	1.88	2.46
Stone crab	4.47	4.68	5.02	4.45	3.09	3.31	4.57	4.47	4.60	6.55
Tunas	3.18	3.09	2.97	3.07	3.45	2.88	2.03	3.47	3.46	3.49

2013 Economic Impacts of the Gulf of Mexico Recreational Fishing Expenditures (thousands of dollars)

	Trips	Jobs	Sales	Income	Value Added
Alabama	2,862	10,163	927,409	358,769	569,144
West Florida	15,949	76,236	9,086,311	3,423,836	5,341,420
Louisiana	4,661	18,991	2,162,502	801,436	1,249,075
Mississippi	1,761	1,583	146,333	53,602	87,684
Texas	NA[1]	14,436	1,697,497	644,516	1,030,326

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures		Equipment	Durable Goods Expenditures
	Non-residents	Residents	Fishing Tackle	1,579,012
For-Hire	267,519	112,637	Other Equipment	637,813
Private Boat	162,857	621,777	Boat Expenses	5,238,903
Shore	233,315	334,131	Vehicle Expenses	1,337,544
Total	663,691	1,068,545	Second Home Expenses	981,974
			Total Durable Expenditures	9,775,248
Total State Trip and Durable Equipment Expenditures				11,507,484

Recreational Anglers by Residential Area (thousands of anglers)[1,2]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	3,185	3,133	3,328	3,235	2,926	2,550	2,480	2,737	2,803	2,973
Non-Coastal	318	190	315	326	262	296	235	311	268	400
Out-of-State[2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Anglers	3,503	3,323	3,643	3,562	3,188	2,846	2,715	3,048	3,071	3,373

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

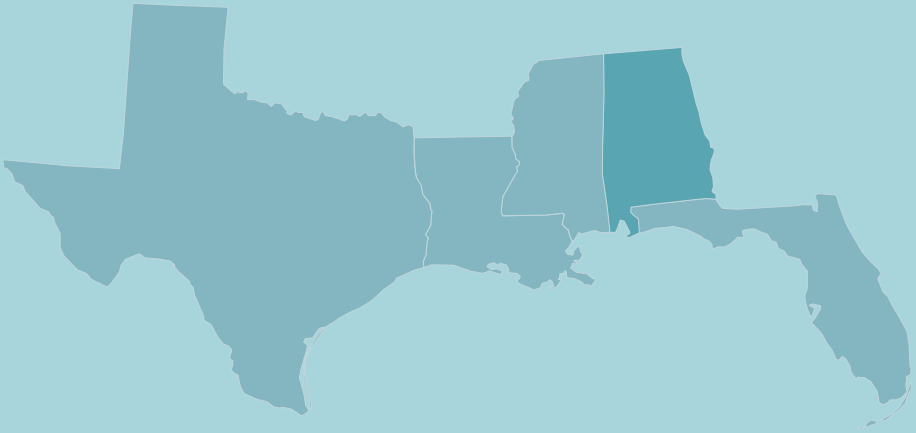
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	831	691	836	852	819	822	580	735	884	907
Private	15,644	13,585	13,620	14,980	15,195	13,443	12,685	12,911	12,782	13,510
Shore	9,954	9,014	8,837	8,457	8,776	8,332	7,783	8,930	9,506	10,817
Total Trips	26,429	23,290	23,293	24,289	24,790	22,597	21,047	22,576	23,172	25,233

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Drum (Atlantic croaker)	H	975	772	1440	1313	1871	1173	1510	2052	1305	1731
	R	3639	2844	2314	2616	3149	3858	3827	5899	3922	3268
Drum (Gulf and southern king-fish)	H	1681	1426	1250	1137	1307	1066	1420	941	918	1623
	R	809	781	926	843	729	576	625	539	535	474
Drum (sand and silver seatrouts)	H	2265	2034	2110	3090	3404	4203	4573	5735	4878	2862
	R	1000	724	1538	1910	1989	2444	1807	2541	2474	1851
Drum (spotted seatrout)	H	11561	10027	13285	11187	14125	13336	10138	13582	12783	11965
	R	19764	20214	20055	18849	21017	17365	14564	19120	20217	19528
Porgies (sheepshead)	H	2497	2000	1107	1199	1567	1573	1146	2217	1453	1271
	R	2173	2394	1507	1223	1486	1338	1739	1634	1516	1672
Red drum	H	2940	2317	2363	2847	3294	2608	3252	3542	2689	3869
	R	5809	6233	6392	6222	7016	5525	6468	6448	6330	7699
Red snapper	H	1278	835	966	1225	679	797	335	521	592	1243
	R	2686	2194	2831	3259	2112	2145	1436	1521	1424	2824
Southern flounder	H	741	542	474	652	474	644	771	765	740	1011
	R	271	195	171	239	121	193	220	222	309	339
Spanish mackerel	H	2127	1192	1759	1330	1895	1504	1564	1534	1834	3352
	R	2317	1374	2855	2104	2040	1634	2477	1941	1441	4158
Striped mullet	H	1163	1081	1103	1150	1258	743	1666	1900	2356	2984
	R	167	165	141	158	146	226	127	313	204	194

[1] The Marine Recreational Program (MRIP) does not collect effort data for Texas.
[2] 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.

Tables | Alabama



2013 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	12,090	526,767	200,494	265,580	11,498	456,899	183,219	239,188
Commercial Harvesters	1,911	90,964	26,991	40,181	1,911	90,964	26,991	40,181
Seafood Processors & Dealers	2,258	141,126	55,280	70,248	1,867	116,535	45,647	58,007
Importers	159	43,833	7,025	13,362	0	0	0	0
Seafood Wholesalers & Distributors	182	8,490	2,976	3,834	176	8,201	2,875	3,703
Retail	7,579	242,354	108,222	137,955	7,543	241,199	107,705	137,296

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	37,036	39,726	48,558	48,845	44,503	39,624	26,335	50,910	46,495	55,434
Finfish & Other	3,905	3,982	4,572	3,686	4,358	3,662	2,748	4,072	5,183	4,680
Shellfish	33,131	35,744	43,986	45,160	40,145	35,962	23,587	46,838	41,312	50,754
Key Species										
Blue crab	1,774	663	1,319	1,711	1,533	961	732	1,128	1,044	1,036
Flounders	230	247	223	261	214	197	97	222	185	58
Menhaden	89	63	48	71	59	42	15	58	84	104
Mullets	1,187	1,117	1,171	984	1,030	765	594	687	1,206	1,178
Oysters	2,120	3,020	3,639	2,698	243	77	390	1,322	1,253	786
Red snapper	382	638	536	213	239	263	329	314	316	401
Sharks	431	478	463	250	403	275	111	381	330	247
Shrimp	29,197	32,002	39,022	40,742	38,355	34,894	22,463	44,361	39,009	48,922
Spanish mackerel	554	401	573	453	664	301	499	582	1,149	940
Vermillion snapper	152	149	318	323	507	841	384	622	393	88

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	26,559	23,985	34,033	29,434	24,612	29,199	14,063	26,119	26,322	23,065
Finfish & Other	6,248	5,552	6,498	4,857	5,577	4,478	3,441	4,966	6,596	5,831
Shellfish	20,311	18,432	27,535	24,578	19,035	24,721	10,622	21,153	19,726	17,234
Key Species										
Blue crab	3,329	1,024	2,384	2,557	1,799	1,458	927	1,617	1,325	1,025
Flounders	138	130	118	133	107	97	48	111	83	25
Menhaden	828	521	350	470	268	190	81	364	521	496
Mullets	2,133	1,976	1,913	1,798	2,017	1,814	1,202	1,262	1,946	1,793
Oysters	908	1,041	940	769	71	23	68	296	265	133
Red snapper	138	214	177	59	61	65	83	78	78	108
Sharks	716	800	1,227	315	424	328	140	450	495	343
Shrimp	16,064	16,260	24,201	21,247	17,154	23,215	9,625	19,224	18,124	16,063
Spanish mackerel	914	568	873	580	921	418	733	839	1,377	972
Vermillion snapper	66	66	122	129	199	346	148	224	133	28

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.53	0.65	0.55	0.67	0.85	0.66	0.79	0.70	0.79	1.01
Flounders	1.67	1.91	1.89	1.97	2.01	2.04	2.05	2.00	2.21	2.35
Menhaden	0.11	0.12	0.14	0.15	0.22	0.22	0.18	0.16	0.16	0.21
Mullets	0.56	0.57	0.61	0.55	0.51	0.42	0.49	0.54	0.62	0.66
Oysters	2.33	2.90	3.87	3.51	3.41	3.33	5.75	4.47	4.72	5.90
Red snapper	2.78	2.98	3.03	3.62	3.93	4.04	3.97	4.04	4.05	3.70
Sharks	0.60	0.60	0.38	0.79	0.95	0.84	0.79	0.85	0.67	0.72
Shrimp	1.82	1.97	1.61	1.92	2.24	1.50	2.33	2.31	2.15	3.05
Spanish mackerel	0.61	0.71	0.66	0.78	0.72	0.72	0.68	0.69	0.83	0.97
Vermillion snapper	2.32	2.26	2.61	2.50	2.55	2.43	2.59	2.78	2.97	3.12

2013 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	595	52,002	20,361	28,133
	Private Boat	583	51,088	17,809	29,462
	Shore	1,353	113,909	39,361	64,495
Total Durable Expenditures		7,632	710,410	281,238	447,054
Total State Economic Impacts		10,163	927,409	358,769	569,144

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	28,544	5,849
Private Boat	15,005	35,879
Shore	53,578	41,267
Total	97,127	82,995

Equipment	Durable Goods Expenditures
Fishing Tackle	292,589
Other Equipment	78,174
Boat Expenses	195,623
Vehicle Expenses	246,439
Second Home Expenses	0
Total Durable Expenditures	812,826

Total State Trip and Durable Equipment Expenditures	992,948

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	223	231	233	253	192	205	195	295	254	279
Non-Coastal	159	93	184	169	116	151	140	177	131	224
Out-of-State	345	161	320	291	237	209	220	435	339	549
Total Anglers	728	485	736	712	545	566	554	907	723	1,052

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	76	56	78	75	56	56	34	75	59	90
Private	994	828	811	985	946	885	840	1,206	1,035	1,006
Shore	1,181	721	1,050	901	702	772	812	1,202	1,211	1,767
Total Trips	2,251	1,604	1,938	1,961	1,704	1,713	1,686	2,483	2,305	2,862

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefish	H	131	15	13	26	16	14	30	74	55	163
	R	216	77	150	175	54	46	80	166	197	639
Drum (Atlantic croaker)	H	178	233	452	463	1,163	250	918	886	345	391
	R	1,070	1,593	824	924	1,370	1,822	1,861	2,593	1,206	886
Drum (kingfishes)[1]	H	620	263	444	477	668	593	633	626	226	929
	R	410	266	460	291	257	284	310	342	97	260
Drum (sand seatrout)	H	503	349	593	704	1,216	1,428	2,069	2,346	1,415	485
	R	266	289	502	481	409	753	835	743	479	294
Drum (spotted seatrout)	H	210	295	327	358	269	318	610	825	773	539
	R	168	323	598	487	844	758	454	1,302	1,126	761
Porgies (sheepshead)	H	462	279	123	321	289	165	218	480	313	285
	R	172	86	80	30	158	48	51	146	48	46
Red drum	H	118	154	100	84	88	62	123	143	124	188
	R	263	184	144	136	227	111	152	150	306	425
Red snapper	H	304	232	181	217	107	138	42	217	152	451
	R	589	494	639	852	340	394	287	488	193	857
Southern flounder	H	137	151	123	96	93	139	243	163	155	84
	R	73	83	65	38	37	22	65	60	53	43
Spanish mackerel	H	468	45	58	91	111	76	254	335	515	1,313
	R	277	52	49	21	32	59	102	128	148	1,130

[1] Kingfishes include southern kingfish and Gulf kingfish.

Alabama's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	100,802 (1.4%)	1,629,141 (1.4%)	49.77 (1.2%)	81.91 (1.2%)	148.40 (1.2%)	0.31
2012	97,938 (1.3%)	1,585,761 (1.4%)	61.28 (1.1%)	101.24 (1.2%)	189.54 (1.2%)	0.63
% change	-2.9	-2.7	18.8	19.1	21.7	50.8

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	43	40	34	47	33	41	68	67	47
	Receipts	3,413	3,414	1,558	1,547	1,894	1,809	3,314	4,354	1,965
Seafood sales, retail	Firms	61	44	57	61	57	67	71	58	68
	Receipts	3,645	3,855	4,802	4,279	5,632	5,484	5,197	4,759	7,073

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

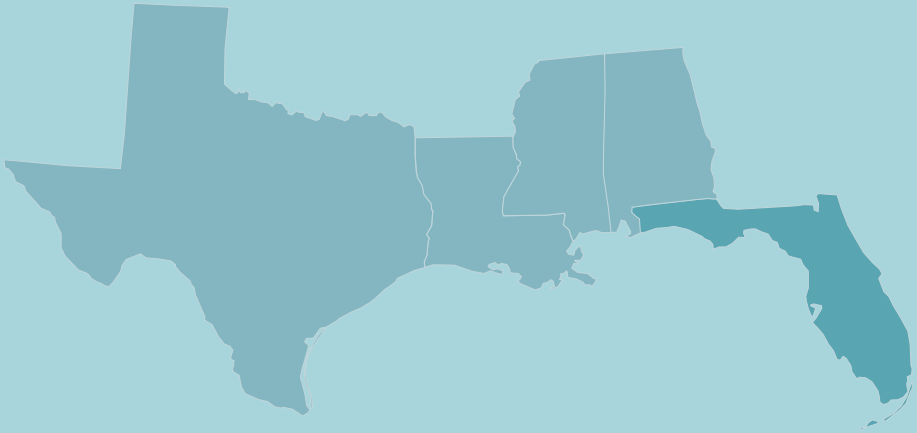
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	23	26	24	23	23	22	21	16	17
	Employees	2,037	1,925	1,629	1,510	1,450	1,086	1,128	882	778
	Payroll	36,130	38,229	34,703	32,774	29,277	24,900	22,824	21,922	19,730
Seafood sales, wholesale	Establishments	31	26	26	31	29	28	23	25	16
	Employees	588	607	395	395	494	339	332	321	306
	Payroll	6,752	6,345	6,195	6,202	8,751	5,893	5,119	6,547	6,221
Seafood sales, retail	Establishments	35	34	28	33	33	31	34	32	32
	Employees	96	95	ds	ds	ds	130	132	120	189
	Payroll	1,401	1,399	ds	1,809	1,710	2,044	2,016	1,888	2,990

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	10	10	6	8	4	4	5	5	4
	Employees	ds	ds	15	48	ds	ds	ds	215	ds
	Payroll	ds	ds	754	3,266	ds	ds	ds	13,117	ds
Deep sea freight transportation	Establishments	3	3	3	5	7	7	5	6	5
	Employees	ds	ds	ds	46	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	3,553	ds	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	1	1	1	1	2	3	2	2	1
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	52	58	52	52	56	55	54	53	57
	Employees	341	347	312	364	316	278	609	ds	329
	Payroll	7,631	8,047	8,388	9,382	9,170	8,418	12,149	12,196	10,253
Marine cargo handling	Establishments	18	17	14	19	20	19	19	19	10
	Employees	577	672	ds	491	756	658	548	536	ds
	Payroll	26,201	28,458	ds	21,076	33,244	27,272	32,143	34,998	ds
Navigational services to shipping	Establishments	16	17	18	16	17	16	16	16	14
	Employees	ds	ds	ds	338	287	294	276	283	241
	Payroll	ds	ds	ds	17,554	16,712	15,383	14,737	14,981	8,808
Port & harbor operations	Establishments	1	3	3	2	4	5	5	3	6
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	101
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	5,788
Ship & boat building	Establishments	42	45	47	42	42	40	32	35	37
	Employees	2,195	2,591	3,027	3,570	4,435	3,913	2,598	3,176	4,936
	Payroll	83,756	86,453	121,185	172,380	188,543	159,065	151,813	166,116	251,063

[1] 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.
[2] ds = these data are suppressed.

Tables | West Florida



2013 Economic Impacts of the Florida[1] Seafood Industry (thousands of dollars)

	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	78,378	15,319,435	2,878,309	5,136,623	11,044	938,589	249,268	381,866
Commercial Harvesters	7,199	453,074	144,057	190,994	7,199	453,074	144,057	190,994
Seafood Processors & Dealers	4,525	725,679	140,440	276,093	574	97,932	18,953	37,259
Importers	40,111	11,033,696	1,768,360	3,363,554	0	0	0	0
Seafood Wholesalers & Distributors	9,869	1,115,332	437,875	544,775	482	54,490	21,392	26,615
Retail	16,674	1,991,654	387,576	761,207	2,788	333,094	64,866	126,997

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	148,058	137,912	145,494	132,162	123,850	117,324	139,046	166,015	143,038	179,483
Finfish & Other	52,331	50,600	50,358	45,890	50,926	49,582	40,865	59,410	60,406	67,612
Shellfish	95,727	87,312	95,136	86,272	72,924	67,743	98,181	106,605	82,632	111,872
Key Species										
Blue crab	7,316	7,035	7,043	5,769	3,289	4,195	6,706	7,719	5,142	6,454
Gag	7,615	7,084	4,151	4,348	4,913	2,759	2,079	1,439	2,437	2,799
Lobsters	20,724	15,077	24,885	24,546	19,175	12,206	32,752	35,616	21,136	46,749
Mullets	4,891	4,355	6,021	3,663	4,172	5,069	4,188	8,630	5,050	11,081
Oyster	2,884	2,854	5,415	6,631	5,519	6,968	6,298	8,582	9,706	5,783
Quahog clam	2,074	1,736	807	914	1,825	1,524	1,002	921	753	921
Red grouper	13,281	13,376	14,384	11,024	13,591	10,488	8,992	15,087	16,737	16,219
Red snapper	2,168	1,671	1,991	3,066	2,951	2,980	4,552	5,417	6,141	8,073
Shrimp	34,737	38,625	32,225	20,976	23,265	24,446	27,554	28,456	21,313	26,475
Stone crab	26,507	21,074	24,029	26,213	19,019	17,806	23,335	24,430	23,934	24,710

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	83,894	73,038	70,766	59,784	60,380	66,387	63,678	78,459	63,288	62,357
Finfish & Other	41,134	36,543	35,887	30,645	35,302	38,792	32,023	42,288	37,993	37,759
Shellfish	42,760	36,496	34,879	29,139	25,078	27,595	31,656	36,171	25,295	24,598
Key Species										
Blue crab	8,083	7,370	8,610	6,110	2,660	3,371	5,759	6,833	4,157	4,463
Gag	3,054	2,688	1,436	1,339	1,478	825	572	369	612	676
Lobsters	4,565	3,059	4,372	3,405	2,981	3,961	5,287	5,303	3,635	5,601
Mullets	6,660	5,635	7,308	5,619	6,980	9,167	7,262	11,410	7,249	10,879
Oyster	1,644	1,417	2,394	2,959	2,526	2,877	2,165	3,100	3,316	1,298
Quahog clam	266	212	96	116	279	255	156	137	128	183
Red grouper	6,789	6,386	6,062	4,352	5,628	4,387	3,488	5,635	6,141	5,412
Red snapper	811	584	649	919	849	863	1,317	1,538	1,698	2,181
Shrimp	18,258	19,297	14,176	8,628	9,942	11,451	12,892	11,975	7,598	8,803
Stone crab	5,933	4,502	4,784	5,884	6,163	5,382	5,100	5,460	5,202	3,767

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.91	0.95	0.82	0.94	1.24	1.24	1.16	1.13	1.24	1.45
Gag	2.49	2.64	2.89	3.25	3.32	3.34	3.63	3.90	3.98	4.14
Lobsters	4.54	4.93	5.69	7.21	6.43	3.08	6.19	6.72	5.81	8.35
Mullets	0.73	0.77	0.82	0.65	0.60	0.55	0.58	0.76	0.70	1.02
Oyster	1.75	2.02	2.26	2.24	2.19	2.42	2.91	2.77	2.93	4.46
Quahog clam	7.79	8.17	8.44	7.90	6.53	5.97	6.43	6.74	5.86	5.03
Red grouper	1.96	2.09	2.37	2.53	2.41	2.39	2.58	2.68	2.73	3.00
Red snapper	2.67	2.86	3.07	3.34	3.47	3.45	3.46	3.52	3.62	3.70
Shrimp	1.90	2.00	2.27	2.43	2.34	2.13	2.14	2.38	2.80	3.01
Stone crab	4.47	4.68	5.02	4.45	3.09	3.31	4.58	4.47	4.60	6.56

[1] Information reported in this table is for the state of Florida, not West Florida.

2013 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	4,222	451,459	191,040	274,542
	Private Boat	3,906	409,055	156,645	258,908
	Shore	2,988	294,721	111,769	184,015
Total Durable Expenditures		65,120	7,931,076	2,964,382	4,623,955
Total State Economic Impacts		76,236	9,086,311	3,423,836	5,341,420

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	207,324	40,458
Private Boat	116,477	225,542
Shore	150,940	61,548
Total	474,741	327,549

Equipment	Durable Goods Expenditures
Fishing Tackle	824,925
Other Equipment	364,881
Boat Expenses	3,494,671
Vehicle Expenses	533,998
Second Home Expenses	794,471
Total Durable Expenditures	6,012,946

Total State Trip and Durable Equipment Expenditures	6,815,236

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	2,023	2,088	2,084	1,934	1,820	1,551	1,538	1,592	1,718	1,813
Non-Coastal[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	2,141	2,008	1,988	2,151	2,029	1,671	1,470	1,624	2,141	2,538
Total Anglers	4,165	4,096	4,072	4,085	3,849	3,222	3,008	3,216	3,859	4,351

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	599	505	565	612	571	573	461	536	699	684
Private	10,172	9,491	9,382	10,005	10,145	8,623	8,160	7,520	7,865	8,328
Shore	7,025	6,699	6,721	6,319	6,782	6,482	5,645	5,845	6,216	6,937
Total Trips	17,796	16,695	16,667	16,936	17,497	15,677	14,266	13,901	14,780	15,949

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Common snook	H	70	62	25	35	25	14	(1)	1	(1)	33
	R	2,197	2,281	1,391	1,591	1,596	1,925	600	747	1,040	1,547
Drum (sand and silver seatrouts)	H	434	487	434	1,119	746	892	409	865	1,415	705
	R	193	64	409	599	583	459	211	295	742	240
Drum (spotted seatrout)	H	2,066	1,980	1,616	1,514	1,543	1,370	1,115	1,475	1,626	1,406
	R	9,894	11,749	9,456	10,059	9,584	7,672	8,470	11,382	10,921	7,760
Gag	H	690	491	356	286	434	203	232	98	132	213
	R	3,865	2,314	1,875	2,676	4,076	2,724	2,017	1,158	980	1,170
Gray snapper	H	1,145	932	663	1,046	1,394	1,176	560	419	949	1,482
	R	3,637	4,700	2,848	4,289	5,690	3,014	1,858	2,239	3,125	5,136
King mackerel	H	197	178	343	271	184	453	172	128	180	205
	R	107	133	392	84	155	138	81	46	62	88
Mullets[2]	H	1,078	988	1,297	613	1,237	656	967	855	1,550	1,640
	R	282	208	100	183	143	191	73	106	88	224
Porgies (sheepshead)	H	708	1,050	623	591	556	682	455	608	628	524
	R	1,400	1,856	942	894	855	808	1,245	1,276	1,177	1,084
Red drum	H	321	501	377	412	457	225	240	286	414	364
	R	2,101	3,254	2,828	2,558	2,562	1,440	1,992	2,894	2,300	2,196
Spanish mackerel	H	1,628	1,100	1,672	1,205	1,753	1,392	1,284	1,154	1,215	1,970
	R	2,012	1,279	2,767	2,064	1,988	1,545	2,360	1,780	1,219	3,017

[1] Data is not available because all West Florida residents are considered coastal county residents.
[2] Mullets include species within the mullet genus including striped mullets.

West Florida's State Economy (% of national total)[1]

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[2]
2004	484,938 (6.6%)	6,864,987 (6%)	219.79 (5.2%)	351.86 (5.2%)	635.77 (5.2%)	1.03
2012	502,414 (6.8%)	6,932,382 (6%)	280.30 (5.2%)	424.11 (4.9%)	769.01 (4.8%)	1.05
% change	3.5	1	21.6	17	17.3	1.9

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	177	164	174	173	202	217	280	294	307
	Receipts	8,652	8,756	10,184	10,497	11,065	12,473	14,635	14,618	17,557
Seafood sales, retail	Firms	247	247	251	319	331	316	361	362	383
	Receipts	18,004	22,787	20,708	27,557	26,087	25,667	27,964	29,037	30,765

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

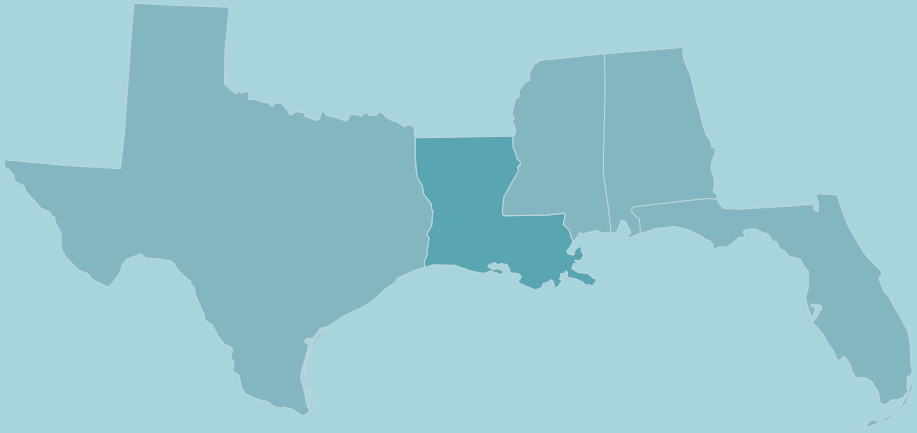
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	24	25	22	20	23	25	27	24	27
	Employees	2,193	1,616	1,704	1,748	1,637	1,143	1,269	1,095	1,608
	Payroll	65,881	47,529	62,801	58,233	53,455	46,235	45,772	42,612	51,735
Seafood sales, wholesale	Establishments	261	258	259	267	229	215	229	250	226
	Employees	1,948	1,883	2,091	2,308	1,913	1,762	1,747	1,913	1,957
	Payroll	63,276	65,339	73,897	85,019	75,203	72,159	70,889	77,115	75,945
Seafood sales, retail	Establishments	190	176	173	169	168	158	145	145	151
	Employees	977	970	936	989	991	885	865	849	945
	Payroll	17,575	19,192	19,513	20,595	21,604	21,182	20,783	20,158	21,577

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	59	59	54	47	42	42	50	54	60
	Employees	1,132	1,150	1,217	1,242	1,106	972	709	753	1,381
	Payroll	80,422	71,420	91,638	94,429	50,115	37,774	50,217	53,341	100,402
Deep sea freight transportation	Establishments	63	69	73	69	57	58	61	65	75
	Employees	2,567	2,622	3,729	3,190	2,486	2,801	2,279	2,374	3,345
	Payroll	150,701	207,300	226,810	208,144	169,055	180,139	159,025	177,386	231,887
Deep sea passenger transportation	Establishments	32	31	37	34	31	33	29	29	39
	Employees	8,849	8,492	9,077	ds	ds	ds	ds	ds	ds
	Payroll	536,753	504,625	571,590	ds	ds	ds	ds	ds	ds
Marinas	Establishments	532	551	513	493	442	428	430	411	432
	Employees	5,067	5,069	5,494	4,935	5,024	4,665	4,439	4,657	4,918
	Payroll	125,763	133,384	146,390	148,592	151,677	132,955	133,017	142,997	148,573
Marine cargo handling	Establishments	66	63	66	53	56	59	55	64	43
	Employees	5,671	6,409	7,266	6,585	8,052	7,288	7,547	7,484	4,598
	Payroll	175,257	177,983	189,020	173,788	192,473	185,309	191,560	195,458	86,461
Navigational services to shipping	Establishments	149	148	142	145	147	145	145	150	151
	Employees	686	660	781	1,484	894	829	980	1,047	853
	Payroll	39,309	42,200	48,370	61,470	56,917	60,641	76,853	75,561	68,366
Port & harbor operations	Establishments	29	31	27	29	40	32	34	32	66
	Employees	1,045	973	584	459	712	527	470	377	2,082
	Payroll	24,327	22,606	19,417	12,872	24,668	19,006	20,525	16,879	72,554
Ship & boat building	Establishments	306	312	301	296	297	261	248	246	258
	Employees	12,503	12,729	12,385	12,332	12,419	8,221	7,363	7,909	8,621
	Payroll	443,379	454,209	427,888	469,382	442,096	296,537	302,909	325,942	374,831

[1] All data presented on this page are for the state of Florida, not West Florida.
[2] 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.
[3] ds = these data are suppressed.

Tables | Louisiana



2013 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	39,743	2,074,255	742,761	1,023,033	37,724	1,765,470	678,404	916,004
Commercial Harvesters	15,021	745,964	246,290	365,485	15,021	745,964	246,290	365,485
Seafood Processors & Dealers	2,432	202,551	78,565	100,213	2,287	190,362	73,837	94,183
Importers	903	248,264	39,789	75,682	0	0	0	0
Seafood Wholesalers & Distributors	1,183	127,313	43,372	56,142	1,019	109,654	37,356	48,355
Retail	20,205	750,162	334,744	425,511	19,398	719,490	320,920	407,982

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	274,082	251,678	278,292	289,288	275,701	286,993	233,559	324,123	301,844	399,516
Finfish & Other	66,074	49,443	60,735	65,198	64,116	62,629	56,900	102,083	68,296	108,377
Shellfish	208,008	202,235	217,557	224,090	211,585	224,364	176,658	222,040	233,549	291,139
Key Species										
Blue crab	29,881	27,419	32,605	35,044	32,203	37,301	30,325	36,784	39,064	51,028
Crawfish	4,810	8,360	1,290	9,034	9,507	15,547	13,971	9,914	8,163	16,593
King mackerel	1,198	1,273	1,112	1,298	1,307	1,184	1,149	1,594	1,475	1,517
Menhaden	35,249	25,776	36,441	41,368	45,768	42,555	43,331	82,881	44,875	84,897
Mullets	2,681	946	2,061	690	749	73	185	775	859	626
Oysters	34,814	33,305	35,999	40,148	39,009	50,950	24,986	41,652	39,931	45,151
Red snapper	3,861	3,568	4,472	2,529	2,038	2,185	2,311	2,261	2,358	4,696
Shrimp	138,466	133,143	147,652	139,842	130,854	120,555	107,362	133,670	146,361	178,345
Tunas	10,739	7,687	7,040	8,334	4,409	6,338	1,649	3,369	7,367	4,639
Vermillion snapper	1,663	1,137	762	991	819	806	399	517	619	473

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	1,095,571	849,280	918,675	999,343	919,017	1,007,474	793,377	1,311,040	849,407	1,041,190
Finfish & Other	895,336	681,322	714,545	814,645	759,438	806,844	665,665	1,153,912	689,178	872,686
Shellfish	200,235	167,959	204,130	184,698	159,579	200,631	127,712	157,128	160,229	168,504
Key Species										
Blue crab	44,397	38,100	53,394	45,107	41,714	53,057	30,752	43,893	40,961	38,794
Crawfish	8,537	15,177	1,469	15,848	15,735	19,312	14,557	9,599	6,712	19,823
King mackerel	984	867	971	879	789	927	691	1,002	969	731
Menhaden	862,947	657,702	689,853	789,621	738,092	785,575	648,561	1,131,287	666,055	849,036
Mullets	4,754	1,238	3,361	1,375	1,503	189	362	1,385	1,268	609
Oysters	13,902	12,099	11,417	12,858	12,840	15,006	6,874	11,156	10,813	11,337
Red snapper	1,560	1,316	1,653	807	589	667	828	918	943	1,196
Shrimp	133,370	102,576	137,839	110,860	89,285	113,250	75,515	92,469	101,715	98,533
Tunas	3,230	2,296	2,143	2,476	1,248	2,009	490	932	2,013	1,254
Vermillion snapper	921	588	365	517	409	412	186	234	272	173

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.67	0.72	0.61	0.78	0.77	0.70	0.99	0.84	0.95	1.32
Crawfish	0.56	0.55	0.88	0.57	0.60	0.81	0.96	1.03	1.22	0.84
King mackerel	1.22	1.47	1.15	1.48	1.66	1.28	1.66	1.59	1.52	2.07
Menhaden	0.04	0.04	0.05	0.05	0.06	0.05	0.07	0.07	0.07	0.10
Mullets	0.56	0.76	0.61	0.50	0.50	0.39	0.51	0.56	0.68	1.03
Oysters	2.50	2.75	3.15	3.12	3.04	3.40	3.63	3.73	3.69	3.98
Red snapper	2.47	2.71	2.71	3.13	3.46	3.28	2.79	2.46	2.50	3.93
Shrimp	1.04	1.30	1.07	1.26	1.47	1.06	1.42	1.45	1.44	1.81
Tunas	3.33	3.35	3.29	3.37	3.53	3.16	3.37	3.62	3.66	3.70
Vermillion snapper	1.81	1.93	2.09	1.92	2.00	1.95	2.15	2.21	2.28	2.73

2013 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	593	65,729	30,483	40,047
	Private Boat	1,867	226,834	70,671	130,678
	Shore	622	72,560	22,261	40,853
Total Durable Expenditures		15,909	1,797,379	678,021	1,037,497
Total State Economic Impacts		18,991	2,162,502	801,436	1,249,075

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	26,644	11,460
Private Boat	20,916	159,828
Shore	10,828	49,338
Total	58,388	220,626

Equipment	Durable Goods Expenditures
Fishing Tackle	271,998
Other Equipment	96,785
Boat Expenses	1,068,955
Vehicle Expenses	241,871
Second Home Expenses	99,974
Total Durable Expenditures	1,779,583

Total State Trip and Durable Equipment Expenditures	2,058,597

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	747	706	868	853	795	669	609	690	651	709
Non-Coastal	133	68	108	124	120	108	67	86	77	109
Out-of-State	179	138	198	157	170	139	120	183	165	262
Total Anglers	1,059	911	1,174	1,134	1,084	916	796	959	893	1,080

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	143	123	187	144	179	183	79	113	115	122
Private	3,821	2,784	2,801	3,156	3,508	3,176	3,055	3,342	2,891	3,190
Shore	1,239	1,159	775	889	933	769	729	1,122	1,131	1,349
Total Trips	5,204	4,065	3,763	4,188	4,620	4,128	3,862	4,576	4,137	4,661

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Black drum	H	504	309	369	386	543	519	399	468	424	455
	R	1,026	651	717	729	1,116	974	1,033	1,085	882	1,639
Drum (Atlantic croaker)	H	476	443	805	684	357	470	229	606	520	829
	R	1,995	963	1,143	1,006	1,187	1,100	1,268	2,319	1,676	1,797
Drum (sand seatrout)	H	905	974	775	889	1,085	879	1,065	1,188	895	755
	R	453	254	453	540	824	854	514	1,032	679	990
Drum (spotted seatrout)	H	8,524	7,435	10,872	8,930	11,705	10,558	7,857	10,441	9,608	9,004
	R	8,657	7,304	9,026	7,394	9,580	7,975	5,054	5,802	6,776	9,709
Drum (southern kingfish)	H	200	240	89	67	74	103	41	17	110	15
	R	85	187	151	28	119	59	47	25	40	65
Porgies (sheepshead)	H	1,289	644	325	270	705	704	430	869	397	368
	R	567	429	463	288	448	473	440	188	237	477
Red drum	H	2,418	1,626	1,828	2,308	2,673	2,237	2,812	3,023	2,010	3,169
	R	3,293	2,652	3,321	3,455	4,074	3,734	4,111	3,195	2,871	4,675
Red snapper	H	88	111	172	160	85	98	7	31	102	83
	R	274	339	429	285	261	195	7	109	131	223
Southern flounder	H	471	280	290	349	235	286	327	399	331	685
	R	129	76	54	67	37	50	72	61	97	134
Yellowfin tuna	H	8	10	14	8	17	3	1	13	25	11
	R	(1)	1	1	1	7	(1)	(1)	4	3	2

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.

Louisiana's State Economy (% of national total)

	Establishments	Employees	Annual Payroll ($ billions)	Employee Compensation ($ billions)	Gross State Product ($ billions)	Commercial Fishing Location Quotient[1]
2004	103,067 (1.4%)	1,623,680 (1.4%)	49.05 (1.2%)	81.54 (1.2%)	172.82 (1.4%)	2.13
2012	104,059 (1.4%)	1,644,282 (1.4%)	68.86 (1.3%)	110.65 (1.3%)	251.37 (1.6%)	1.51
% change	1	1.3	28.8	26.3	31.2	-41.1

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	75	76	99	85	77	68	120	94	78
	Receipts	10,097	8,513	8,179	6,523	7,365	5,308	10,358	9,308	8,492
Seafood sales, retail	Firms	204	156	181	196	182	173	197	192	184
	Receipts	18,148	14,585	20,046	20,932	25,900	17,622	16,001	18,758	16,804

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

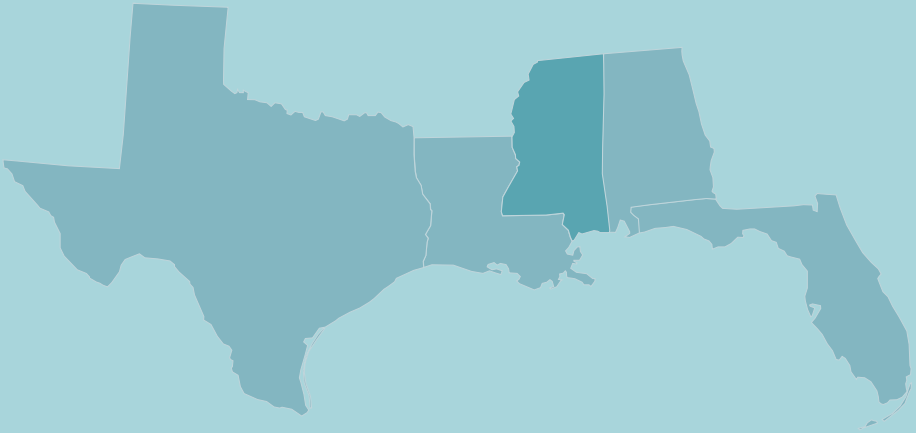
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	54	50	40	41	36	38	34	33	35
	Employees	1,519	1,556	1,506	1,253	991	1,301	1,209	1,006	1,117
	Payroll	47,016	43,801	45,439	41,391	32,382	37,657	35,770	46,440	51,237
Seafood sales, wholesale	Establishments	133	128	112	119	98	98	97	94	103
	Employees	975	1,037	807	954	739	702	683	767	862
	Payroll	19,639	17,649	21,243	21,604	15,858	17,261	15,554	18,427	22,296
Seafood sales, retail	Establishments	111	106	101	101	107	106	101	100	97
	Employees	745	723	759	781	681	703	527	590	704
	Payroll	9,567	8,277	10,560	11,827	11,141	11,564	11,214	11,090	13,042

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	148	136	137	138	123	117	125	125	105
	Employees	6,656	5,771	6,397	7,680	6,506	6,077	5,610	5,834	6,422
	Payroll	300,547	294,941	386,136	527,290	549,388	391,914	405,796	417,362	497,165
Deep sea freight transportation	Establishments	22	25	24	22	18	21	16	17	18
	Employees	705	ds	595	685	1,095	1,192	93	93	ds
	Payroll	38,949	ds	35,269	39,843	87,479	91,760	6,147	5,608	ds
Deep sea passenger transportation	Establishments	3	3	2	3	2	2	1	3	2
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Marinas	Establishments	52	53	41	50	43	43	43	45	44
	Employees	ds	352	ds	378	274	244	314	329	257
	Payroll	ds	10,213	ds	17,794	9,581	8,989	14,716	10,771	9,209
Marine cargo handling	Establishments	47	46	51	49	39	44	41	42	37
	Employees	3,278	3,263	3,100	2,978	2,010	2,193	2,511	2,526	2,016
	Payroll	127,896	110,129	118,748	128,207	85,484	92,883	105,063	108,491	93,896
Navigational services to shipping	Establishments	127	120	129	128	145	137	138	138	136
	Employees	2,472	2,136	2,204	2,508	2,884	2,893	3,176	3,396	2,545
	Payroll	109,008	96,202	115,222	141,757	183,381	175,271	224,533	208,306	162,094
Port & harbor operations	Establishments	18	18	18	14	22	17	21	20	46
	Employees	ds	418	436	467	517	440	431	461	1,205
	Payroll	ds	19,510	29,676	31,734	37,181	33,907	38,776	38,745	80,780
Ship & boat building	Establishments	113	111	108	112	117	109	109	109	116
	Employees	13,206	11,016	11,521	12,808	12,815	12,521	11,737	11,722	10,933
	Payroll	460,606	376,407	437,028	503,199	619,606	613,188	600,259	639,047	631,098

[1] 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.
[2] ds = these data are suppressed.

Tables | Mississippi



2013 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	6,432	268,367	107,340	138,779	6,413	265,670	106,770	137,842
Commercial Harvesters	1,134	56,498	16,938	24,952	1,134	56,498	16,938	24,952
Seafood Processors & Dealers	961	71,085	28,123	35,239	958	70,892	28,046	35,143
Importers	8	2,137	342	651	0	0	0	0
Seafood Wholesalers & Distributors	75	6,811	2,403	3,028	73	6,662	2,351	2,962
Retail	4,256	131,837	59,533	74,910	4,249	131,618	59,435	74,785

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	43,618	23,386	21,586	39,340	43,696	37,956	21,895	30,291	49,282	34,696
Finfish & Other	10,485	7,804	8,959	21,359	19,233	18,667	8,963	10,527	23,172	10,938
Shellfish	33,133	15,582	12,628	17,981	24,464	19,289	12,932	19,764	26,110	23,758
Key Species										
Blue crab	658	433	928	741	447	573	366	318	724	416
Flounders	32	20	36	58	40	58	64	118	101	45
Menhaden	9,564	7,074	8,447	20,658	18,534	17,987	8,378	9,871	22,394	10,230
Mullets	54	38	23	35	32	30	31	56	63	61
Oysters	6,073	1,447	NA	819	6,858	6,094	4,268	928	1,596	1,544
Red snapper	71	115	NA	NA	NA	158	NA	168	226	NA
Shrimp	26,353	13,698	11,699	16,418	17,146	12,612	8,293	18,514	23,790	21,798

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	183,558	167,610	221,720	227,834	201,822	230,255	111,229	278,075	263,615	180,522
Finfish & Other	161,669	158,721	212,213	216,375	190,191	217,461	105,274	267,407	249,382	171,000
Shellfish	21,889	8,889	9,507	11,459	11,631	12,794	5,955	10,668	14,234	9,521
Key Species										
Blue crab	811	429	1,127	737	450	545	366	370	782	359
Flounders	18	10	16	25	17	25	28	55	43	19
Menhaden	159,392	157,194	211,163	215,182	189,118	216,709	104,729	266,774	248,824	170,500
Mullets	128	99	66	70	57	62	59	93	99	95
Oysters	3,029	610	NA	299	2,606	2,189	1,453	247	425	336
Red snapper	35	54	NA	NA	NA	57	NA	86	115	NA
Shrimp	17,992	7,848	8,380	10,421	8,570	10,054	4,135	10,048	13,026	8,825

Average Annual Price of Key Species/Species Groups (dollars per pound)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue crab	0.81	1.01	0.82	1.01	0.99	1.05	1.00	0.86	0.93	1.16
Flounders	1.73	1.88	2.22	2.38	2.36	2.34	2.33	2.14	2.33	2.38
Menhaden	0.06	0.05	0.04	0.10	0.10	0.08	0.08	0.04	0.09	0.06
Mullets	0.42	0.38	0.35	0.50	0.57	0.48	0.52	0.61	0.64	0.64
Oysters	2.00	2.37	NA	2.74	2.63	2.78	2.94	3.75	3.75	4.59
Red snapper	2.05	2.13	NA	NA	NA	2.75	NA	1.96	1.97	NA
Shrimp	1.46	1.75	1.40	1.58	2.00	1.25	2.01	1.84	1.83	2.47

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	63	4,995	1,730	2,440
	Private Boat	323	32,260	10,543	18,028
	Shore	124	11,010	3,700	6,133
Total Durable Expenditures		1,073	98,068	37,629	61,083
Total State Economic Impacts		1,583	146,333	53,602	87,684

2013 Angler Trip & Durable Expenditures (thousands of dollars)

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	1,409	1,637
Private Boat	3,415	31,727
Shore	1,955	9,155
Total	6,779	42,518

Equipment	Durable Goods Expenditures
Fishing Tackle	34,267
Other Equipment	12,266
Boat Expenses	48,781
Vehicle Expenses	33,537
Second Home Expenses	17
Total Durable Expenditures	128,867
Total State Trip and Durable Equipment Expenditures	178,164

Recreational Anglers by Residential Area (thousands of anglers)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coastal	191	108	143	196	119	125	137	160	179	171
Non-Coastal	26	29	23	34	26	36	29	48	60	67
Out-of-State	46	39	27	55	48	50	50	60	91	101
Total Anglers	262	176	193	284	194	212	216	268	331	339

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
For-Hire	12	8	7	21	13	11	7	11	11	11
Private	657	483	626	834	596	759	629	843	991	986
Shore	510	435	291	349	359	310	597	761	948	764
Total Trips	1,179	926	924	1,204	969	1,079	1,233	1,615	1,950	1,761

Harvest (H) and Release (R) of Key Species Species Groups (thousands of fish)[1]

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Drum (Atlantic croaker)	H	134	41	59	72	182	340	209	453	317	330
	R	370	208	190	264	388	716	422	606	695	329
Drum (kingfishes)[2]	H	354	225	163	161	181	126	173	177	234	519
	R	111	62	30	48	58	61	47	36	157	94
Drum (sand and silver seatrouts)	H	423	222	305	296	351	1,004	986	1,336	1,151	917
	R	88	117	173	230	166	378	246	471	574	327
Drum (spotted seatrout)	H	761	317	470	385	608	1,090	556	841	776	1,016
	R	1,045	838	975	909	1,009	960	586	634	1,394	1,298
Porgies (sheepshead)	H	38	27	36	17	17	22	43	260	115	94
	R	34	23	22	11	25	9	3	24	54	65
Red drum	H	83	36	58	43	76	84	77	90	141	148
	R	152	143	99	73	153	240	213	209	853	403
Red snapper	H	13	1	7	2	9	15	1	7	27	35
	R	61	51	52	9	104	55	25	(1)	2	95
Sharks[3]	H	8	9	4	4	3	21	71	35	15	89
	R	39	36	38	41	11	36	87	37	103	75
Southern flounder	H	103	72	47	121	110	209	196	182	227	215
	R	55	30	35	31	45	120	79	99	153	160
Striped mullet	H	192	34	2	66	79	119	188	491	396	647
	R	2	(1)	3	14	4	4	13	83	108	19

[1] In this table, '(1)' = 0-999 thousand fish and '1' = 1,000-1,499 thousand fish.
[2] Kingfishes include southern kingfish and Gulf kingfish.
[3] 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[1]
2004	60,534 (0.8%)	928,313 (0.8%)	24.82 (0.6%)	44.02 (0.7%)	78.33 (0.6%)	1.72
2012	58,644 (0.8%)	895,804 (0.8%)	30.90 (0.6%)	55.05 (0.6%)	101.55 (0.6%)	1
% change	-3.2	-3.6	19.7	20	22.9	-72

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	18	12	22	ds	17	16	30	25	27
	Receipts	1,056	1,045	1,537	ds	1,055	753	1,937	2,108	930
Seafood sales, retail	Firms	47	41	53	57	48	56	69	51	50
	Receipts	3,595	2,934	4,021	4,126	3,437	4,206	3,421	3,505	3,957

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

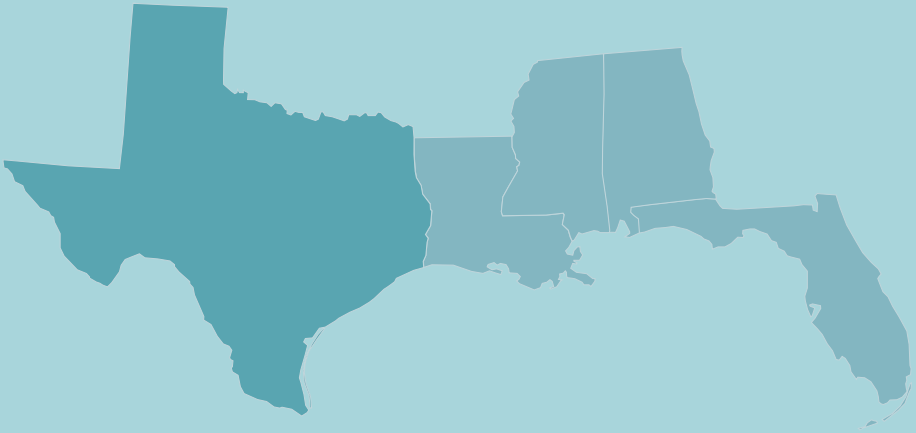
		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	33	28	24	22	20	20	20	18	18
	Employees	3,728	3,637	3,353	3,022	3,062	2,796	2,849	2,464	2,368
	Payroll	66,047	63,957	60,510	60,633	61,723	61,926	61,731	52,502	55,407
Seafood sales, wholesale	Establishments	29	30	23	25	18	16	18	18	17
	Employees	166	145	58	106	61	113	ds	64	102
	Payroll	3,631	1,822	2,063	3,285	3,088	2,836	2,542	2,532	4,412
Seafood sales, retail	Establishments	17	21	12	15	18	14	15	17	13
	Employees	55	57	41	ds	50	46	50	58	ds
	Payroll	532	521	395	ds	699	841	810	838	1,902

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	6	5	5	4	5	5	4	4	4
	Employees	ds	ds	ds	ds	119	114	ds	127	ds
	Payroll	ds	ds	ds	7,585	8,351	7,730	8,058	7,233	ds
Deep sea freight transportation	Establishments	2	3	3	1	0	1	1	1	2
	Employees	ds	ds	ds	ds	NA	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	NA	ds	ds	ds	ds
Deep sea passenger transportation	Establishments	1	1	1	1	0	0	0	0	0
	Employees	ds	ds	ds	ds	NA	NA	NA	NA	NA
	Payroll	ds	ds	ds	ds	NA	NA	NA	NA	NA
Marinas	Establishments	22	25	16	19	17	13	18	19	16
	Employees	220	158	ds	ds	111	172	183	189	204
	Payroll	2,603	2,358	ds	2,145	2,794	3,479	4,163	5,137	5,361
Marine cargo handling	Establishments	5	6	5	5	7	8	7	7	2
	Employees	ds	ds	238	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	8,621	ds	ds	ds	ds	ds	ds
Navigational services to shipping	Establishments	9	8	8	9	8	7	8	6	7
	Employees	ds	ds	ds	ds	ds	ds	141	ds	ds
	Payroll	ds	ds	ds	1,754	ds	ds	6,982	ds	ds
Port & harbor operations	Establishments	2	2	1	1	1	1	1	1	3
	Employees	ds	ds	ds	ds	ds	ds	ds	ds	ds
	Payroll	ds	ds	ds	ds	ds	ds	ds	ds	ds
Ship & boat building	Establishments	19	17	20	23	24	20	20	20	18
	Employees	ds	11,845	11,909	14,578	ds	ds	ds	ds	ds
	Payroll	ds	471,243	498,660	615,837	ds	ds	ds	ds	ds

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Tables | Texas



2013 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	31,553	2,555,824	754,450	1,123,529	25,443	1,491,869	540,667	758,855
Commercial Harvesters	6,683	562,931	162,577	260,743	6,683	562,931	162,577	260,743
Seafood Processors & Dealers	2,262	183,772	69,133	91,051	2,107	171,122	64,375	84,784
Importers	3,170	872,133	139,776	265,864	0	0	0	0
Seafood Wholesalers & Distributors	1,409	184,641	61,607	85,314	759	99,470	33,189	45,961
Retail	18,028	752,347	321,356	420,556	15,893	658,346	280,527	367,367

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Revenue	166,208	172,337	197,291	180,575	176,098	154,530	203,795	240,566	213,319	267,532
Finfish & Other	10,684	10,813	11,359	9,452	7,709	7,488	7,888	8,445	10,231	13,361
Shellfish	155,524	161,523	185,932	171,123	168,389	147,043	195,907	232,121	203,089	254,171
Key Species										
Atlantic croaker	382	415	500	450	446	484	531	622	743	819
Black drum	1,444	1,917	2,013	1,660	1,363	1,377	1,573	1,448	1,491	1,699
Blue crab	2,663	2,410	1,459	2,763	2,342	2,454	3,134	2,845	2,878	2,331
Flounders	325	276	164	62	144	91	62	205	175	73
Groupers	785	795	628	417	553	641	356	549	723	1,121
Oysters	14,954	15,883	17,263	19,246	8,835	9,376	19,144	12,789	21,302	23,465
Red snapper	5,193	5,345	6,168	3,762	2,744	2,398	3,009	3,254	4,448	7,324
Shrimp	137,674	143,045	167,108	149,084	157,187	135,100	173,556	216,382	178,798	228,302
Tunas	0	340	0	NA	94	139	4	2	5	7
Vermilion snapper	611	571	642	1,554	1,430	1,233	1,337	1,274	1,434	659

Total Landings and Landings of Key Species/Species Groups (thousands of pounds)[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Landings	85,557	84,289	117,131	87,912	73,048	102,351	89,721	98,857	90,562	85,230
Finfish & Other	5,852	5,782	5,825	4,800	3,866	4,134	4,247	4,224	4,225	4,872
Shellfish	79,705	78,507	111,306	83,111	69,182	98,216	85,475	94,633	86,337	80,358
Key Species										
Atlantic croaker	60	58	67	62	59	63	67	79	89	96
Black drum	1,717	2,077	2,212	1,687	1,468	1,610	1,729	1,795	1,623	1,689
Blue crab	3,961	3,119	1,966	3,454	2,635	2,844	3,436	2,893	2,853	1,902
Flounders	151	144	68	24	58	32	26	75	60	20
Groupers	329	303	220	141	170	208	144	190	211	292
Oysters	5,569	5,007	4,923	5,633	2,679	2,733	5,265	3,943	5,817	6,126
Red snapper	2,133	1,940	2,158	1,213	870	851	1,031	948	1,123	1,800
Shrimp	70,098	70,310	104,378	74,007	63,855	92,602	76,734	87,753	77,632	72,303
Tunas	0	112	0	NA	22	45	1	1	3	3
Vermilion snapper	322	279	273	672	592	561	539	465	511	234

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

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic croaker	6.35	7.14	7.43	7.29	7.58	7.64	7.98	7.84	8.31	8.55
Black drum	0.84	0.92	0.91	0.98	0.93	0.86	0.91	0.81	0.92	1.01
Blue crab	0.67	0.77	0.74	0.80	0.89	0.86	0.91	0.98	1.01	1.23
Flounders	2.15	1.92	2.42	2.55	2.48	2.84	2.37	2.75	2.94	3.55
Groupers	2.39	2.62	2.85	2.96	3.25	3.07	2.47	2.88	3.42	3.84
Oysters	2.69	3.17	3.51	3.42	3.30	3.43	3.64	3.24	3.66	3.83
Red snapper	2.43	2.76	2.86	3.10	3.15	2.82	2.92	3.43	3.96	4.07
Shrimp	1.96	2.03	1.60	2.01	2.46	1.46	2.26	2.47	2.30	3.16
Tunas	0.80	3.04	0.69	NA	4.26	3.08	3.19	1.82	1.83	2.10
Vermilion snapper	1.90	2.05	2.35	2.31	2.42	2.20	2.48	2.74	2.81	2.81

[1] NA = these data are confidential thus not disclosable.

2013 Economic Impacts of Recreational Fishing Expenditures (thousands of dollars)

		Jobs	Sales	Income	Value Added
Trip Impacts by Fishing Mode	For-Hire	985	103,546	40,180	59,559
	Private Boat	2,297	269,219	92,670	157,557
	Shore	2,638	293,075	100,461	170,897
Total Durable Expenditures		8,516	1,031,657	411,205	642,313
Total State Economic Impacts		14,436	1,697,497	644,516	1,030,326

2013 Angler Trip & Durable Expenditures (thousands of dollars)[1]

Fishing Mode	Trip Expenditures	
	Non-residents	Residents
For-Hire	3,598	53,233
Private Boat	7,044	168,801
Shore	16,014	172,823
Total	26,656	394,857

Equipment	Durable Goods Expenditures
Fishing Tackle	155,233
Other Equipment	85,707
Boat Expenses	430,873
Vehicle Expenses	281,699
Second Home Expenses	87,512
Total Durable Expenditures	1,041,026
Total State Trip and Durable Equipment Expenditures	1,462,539

Harvest (H) of Key Species Species Groups (thousands of fish)[2]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Atlantic croaker	109,241	94,656	100,502	95,243	64,190	117,446	124,785	156,573	156,535	152,314
Black drum	67,998	53,008	72,906	65,797	82,198	98,174	164,525	128,763	256,737	150,042
King mackerel	14,942	14,307	28,521	10,802	8,261	15,919	6,413	9,424	9,087	10,066
Red drum	273,305	230,520	318,412	289,080	266,008	284,796	264,310	347,452	323,344	268,833
Red snapper	40,336	49,112	69,487	44,635	40,502	31,143	33,312	36,261	34,183	47,655
Sand seatrout	175,650	124,600	129,394	95,325	151,706	111,420	126,786	226,599	177,027	150,578
Sheepshead	66,952	80,741	78,284	45,996	46,291	34,125	49,371	56,880	143,129	84,190
Southern flounder	100,477	80,532	64,322	49,117	64,412	47,420	30,234	92,111	95,563	91,515
Spotted seatrout	934,008	854,730	987,323	915,770	917,408	810,213	731,795	1,137,321	809,993	795,871

[1] 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 2012 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.
[2] 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. Please see the TPWD for more information: 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[1]
2004	491,092 (6.6%)	8,118,483 (7.1%)	293.57 (6.9%)	460.82 (6.8%)	920.39 (7.5%)	0.37
2012	537,839 (7.2%)	9,350,829 (8.1%)	446.68 (8.3%)	684.41 (8%)	1,463.02 (9.1%)	0.2
% change	8.7	13.2	34.3	32.7	37.1	-85

Seafood Sales & Processing - Nonemployer Firms (thousands of dollars)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Firms	100	108	109	94	85	82	99	119	123
	Receipts	1,989	2,228	2,974	5,386	3,466	3,858	3,224	5,734	6,675
Seafood sales, retail	Firms	159	159	141	182	188	196	184	171	194
	Receipts	19,131	19,534	18,355	17,442	18,204	13,177	12,124	13,433	14,891

Seafood Sales & Processing - Employer Establishments (thousands of dollars)[2]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Seafood product prep. & packaging	Establishments	24	23	21	26	27	24	22	24	22
	Employees	1,177	1,288	1,155	1,207	1,169	1,026	1,184	1,273	1,248
	Payroll	24,394	23,842	24,302	27,813	27,045	29,006	24,961	26,425	27,737
Seafood sales, wholesale	Establishments	103	97	92	104	69	75	77	82	71
	Employees	1,009	1,001	897	970	734	683	715	723	603
	Payroll	27,730	26,408	28,586	51,597	24,498	23,650	23,879	26,356	25,309
Seafood sales, retail	Establishments	60	59	58	62	60	51	52	50	60
	Employees	219	176	207	189	206	189	199	ds	ds
	Payroll	2,993	3,162	3,229	3,703	3,403	3,393	3,742	4,090	6,102

Transport, Support, & Marine Operations - Employer Establishments (thousands of dollars)[2,3]

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Coastal & Great Lakes freight transportation	Establishments	43	61	45	43	42	43	48	48	39
	Employees	2,565	ds	2,270	2,513	2,815	2,729	1,909	1,764	1,814
	Payroll	91,995	ds	107,328	131,946	251,997	200,219	161,080	177,549	174,686
Deep sea freight transportation	Establishments	41	43	40	41	35	36	30	39	40
	Employees	891	ds	751	920	514	802	764	860	742
	Payroll	38,553	ds	41,969	49,761	40,764	61,309	63,408	71,515	65,818
Deep sea passenger transportation	Establishments	3	4	3	4	3	2	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	165	166	150	141	143	131	148	144	132
	Employees	ds	ds	ds	1,200	1,486	1,423	1,198	1,233	1,169
	Payroll	ds	ds	ds	28,359	34,039	33,803	33,968	34,928	34,711
Marine cargo handling	Establishments	60	60	64	62	55	57	54	55	42
	Employees	4,539	5,200	5,349	6,237	6,313	6,276	5,262	5,259	4,373
	Payroll	138,630	151,522	161,386	186,416	196,006	167,562	166,877	153,360	130,817
Navigational services to shipping	Establishments	92	87	84	90	99	95	87	91	91
	Employees	1,213	1,064	1,373	1,709	1,884	1,849	1,606	1,448	1,676
	Payroll	68,741	75,914	98,244	125,061	137,962	137,289	132,283	113,444	124,500
Port & harbor operations	Establishments	15	15	16	15	24	30	29	26	37
	Employees	215	ds	112	98	ds	421	ds	439	1,381
	Payroll	7,128	ds	4,992	5,163	10,538	13,778	18,627	18,842	55,470
Ship & boat building	Establishments	103	99	90	96	102	99	97	91	89
	Employees	4,204	3,564	3,515	4,810	5,368	3,891	3,386	2,773	5,601
	Payroll	163,800	156,259	170,308	210,275	235,190	158,261	147,492	153,077	310,230

[1] 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.
[2] ds = these data are suppressed.
[3] NA = not applicable.

Data Sources

Researchers with NOAA Fisheries use human-occupied submersibles to survey rockfish habitat, Channel Islands, California (photo credit: NOAA, Southwest Fisheries Science Center)

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).www.nmfs.noaa.gov/msa2007/docs/042808_312_b_6_report.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/statusoffisheries/SOSmain.htm
- "Endangered Species Act (ESA)." Office of Protected Resources, National Marine Fisheries Service, National Oceanic & Atmospheric Admistration (NOAA Fisheries). www.nmfs.noaa.gov/pr/laws/esa/
- "Certified Fisheries." Marine Stewardship Council. www.msc.org/
- "Catch Shares" Office of Sustainable Fisheries, National Marine Fisheries Service, National Oceanic Atmospheric Administration

Fishery Management Councils & Fishery Plans:

- Caribbean Fishery Management Council. www.caribbeanfmc.com
- Gulf of Mexico Fishery Management Council. www.gulfcouncil.org
- Mid-Atlantic Fishery Management Council. www.mafmc.org/mid-atlantic/mafmc.htm
- New England Fishery Management Council. www.nefmc.org/
- North Pacific Fishery Management Council. www.fakr.noaa.gov/npfmc
- Pacific Fishery Management Council. www.pcouncil.org
- South Atlantic Fishery Management Council. www.safmc.net
- Western Pacific Fishery Management Council. www.wpcouncil.org

COMMERCIAL FISHERIES

Data for New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, North Pacific, and Pacific regions:

- Commercial Landings Database. Obtained October 15, 201. Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). www.st.nmfs.noaa.gov/st1/commercial/index.html

Data for Western Pacific region:

- Western Pacific Fisheries Information Network (WPacFIN). Obtained October 15, 2013. www.nmfs.hawaii.edu/wpacfin/hi/dar/Pages/hi_data_menu.php

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 September 12, 2013. www.afsc.noaa.gov

Economic Impacts of the U.S. Commercial Seafood Industry:

- A Users Guide to the National and Coastal State I/O Model. https://www.st.nmfs.noaa.gov/documents/CommercialFishingIOModel.pdf

Additional information:

- "Data Caveats." Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). www.st.nmfs.noaa.gov/st1/commercial/landings/caveat.html
- "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

RECREATIONAL FISHERIES

Data for New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, and Western Pacific regions:

- "Recreational Fishery Statistics Queries." Obtained October 1, 2013. Office of Science & Technology, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). http://www.st.nmfs.noaa.gov/st1/recreational/queries/index.html

Data for Pacific region:

- Southwest Fisheries Science Center (Santa Cruz, CA), National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA Fisheries). Obtained November 15, 2013 swfsc.noaa.gov/default1.aspx?Division=FED&id=554

Data for North Pacific region:

- Alaska Department of Fish & Game. Obtained October 1, 2013. http://www.adfg.state.ak.us

Data for Texas (Gulf of Mexico region):

- Texas Parks & Wildlife Department. Obtained October 1, 2013 www.tpwd.state.tx.us

Recreational Fishing Expenditures and Impacts:

- The Economic Contribution of Marine Angler Expenditures in the United States, 2006. www.st.nmfs.noaa.gov/st5/publication/AnglerExpenditureReport/AnglerExpendituresReport_ALL.pdf

THE MARINE ECONOMY

- "County Business Patterns Data Series." Obtained October 1, 2013. U.S. Census Bureau. www.census.gov/epcd/cbp/index.html
- "Gross Domestic Product by State." Obtained October 1, 2013. Bureau of Economic Analysis. www.bea.gov/bea/regional/gsp
- "Location Quotient Calculator." Obtained October 31, 2013. Bureau of Labor Statistics. data.bls.gov/LOCATION_QUOTIENT/servlet/lqc.ControllerServlet
- "Nonemployer Statistics." Obtained October 31, 2013. U.S. Census Bureau. www.census.gov/epcd/nonemployer

Publications

Eldred Rock Lighthouse, Alaska
(photo credit: Alaska ShoreZone Program NOAA/NMFS/AKFSC; Courtesy of Mandy Lindeberg)

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:

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.

Babij, 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., Barange, M., 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.

NORTH PACIFIC | 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, 67 p.

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.

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.

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. Turris, and Q. Weninger. 2006. Incentive-based approaches to sustainable fisheries. *Canadian Journal of Fisheries and Aquatic Sciences* 63(3): 699-710.

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.

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. Dvarskas. 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.miis.edu/joce/vol2014/iss1/6/.

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 Technical Memorandum NMFS-F/SPO-94, p301. Available at: 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 164 pp.

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.

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. *Anthroplogy 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, 64 p.

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 NOAAs 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 federally 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. Ramierez-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 Bennear, 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, editors, 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, editors, 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, editors. 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, editors, 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, editor, 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, editors. 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. Restreppo. 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, editor, 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, editors, 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, editors, 2011. Conservation of Pacific Sea Turtles.Honolulu: University of Hawaii Press.

Dutton, P., **D. Squires**, and M. Ahmed, editors. 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, editors, 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.

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, 392pag.

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.

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. Grosskkopf, 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, 59 p.

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.

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. 48 p.

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.

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, 134 p.

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, 229 p.

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, 171 p.

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, 170 p.

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), 7 p.

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, 43 p.

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 Technical Memorandum NMFS-NWFSC-85, 602p. Available at: http://www.nwfsc.noaa.gov/research/divisions/sd/communityprofiles/California/Santa_Rosa_CA.pdf.

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, Oregon.

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, 35 p. Available at: 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.

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 Kingdon: 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.

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: 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 from 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. Samhouri, 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, 180 p. Available at: 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.

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.

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.

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.

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 Hawai'i'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, 19 p + Appendix. Available at: 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.

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, 39 p. Available at: 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.

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.

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 Technical Memorandum NMFS NE 211 107 p. 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. Hennessy, 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.

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 Northeast 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. Thbaud, 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 MarineFisheries 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 Kingdon: 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*.

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.

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, 47 p.

Crosson, S. 2010. Trends in the South Atlantic Golden Crab Fishery. U.S. Dept. of Commerce. NOAA Tech. Memo. NMFS-SEFSC-608, 24 p.

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. 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.

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. 14 p. In Beard, T. D., Jr., A. J. Loftus, and R. Arlinghaus (editors). *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, 47 p.

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, 40 p.

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, 32 p.

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, 17 p.

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.

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 Technical Memorandum NMFS-SEFSC-601, 99 p. 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, 97 p. 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.

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 Technical Memorandum NMFS-SEFSC-576, 95p. Available at: http://www.sefsc.noaa.gov/docs/tm576.pdf.

Oh, C.-O., Ditton, R., **B. Gentner**, and R. Reichers. 22005. 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. Shivlani, 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

Valds-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 Technical Memorandum NMFS-SEFSC-597, 144 p.

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. Shivlani, **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.

Resources

Blackfin tuna fishing, Hatteras, North Carolina
(photo credit: John Gunther)

U.S.

Federal Agencies

- Economics & Social Analysis Division Office of Science & Technology, NOAA Fisheries | www.st.nmfs.noaa.gov/economics/
- Office of Science & Technology, NOAA Fisheries | www.st.nmfs.gov/
- Marine Recreational Information Program | www.st.nmfs.noaa.gov/recreational-fisheries/
- oregonstate.edu/dept/iifet
- Bureau of Oceans and International Environmental and Scientific Affairs U.S. Department of State | www.state.gov/e/oes/ocns/fish/

NORTH PACIFIC

Federal Agencies

- Economic & Social Sciences Research Alaska Fisheries Science Center, NOAA Fisheries | www.afsc.noaa.gov/REFM/Socioeconomics/
- Alaska Fisheries Science Center, NOAA Fisheries | www.afsc.noaa.gov
- Alaska Regional Office, NOAA Fisheries | alaskafisheries.noaa.gov/
- Alaska Region, U.S. Fish & Wildlife Service | alaska.fws.gov
- District 17, U.S. Coast Guard | www.uscg.mil/D17

State Agencies

- Alaska Department of Fish & Game | www.adfg.state.ak.us

Councils & Commissions

- North Pacific Fishery Management Council | www.npfmc.org
- Pacific States Marine Fisheries Commission | www.psmfc.org
- Fisheries Economics Data Program Pacific States Marine Fisheries Commission | www.psmfc.org/efin
- International Pacific Halibut Commission | 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
- Northwest Fisheries Science Center, NOAA Fisheries | www.nwfsc.noaa.gov
- West Coast Regional Office, NOAA Fisheries | www.westcoast.fisheries.noaa.gov
- Socioeconomics Research Southwest Fisheries Science Center, NOAA Fisheries | https://swfsc.noaa.gov/text-block.aspx?id=1038&ParentMenuId=109
- Southwest Fisheries Science Center | swfsc.noaa.gov
- Pacific Region, U.S. Fish & Wildlife Service | www.fws.gov/pacific
- California & Nevada, U.S. Fish & Wildlife Service | www.fws.gov/cno
- District 13, U.S. Coast Guard | www.uscg.mil/D13

State Agencies

- California Department of Fish & Game | www.wildlife.ca.gov
- Oregon Department of Fish & Wildlife | www.dfw.state.or.us
- Washington Department of Fish & Wildlife | wdfw.wa.gov

Councils & Commissions

- Pacific Fishery Management Council | www.pcouncil.org
- Pacific States Marine Fisheries Commission | www.psmfc.org
- Fisheries Economics Data Program - Pacific States Marine Fisheries Commission | www.psmfc.org/efin
- International Pacific Halibut Commission | 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/
- Pacific Islands Fisheries Science Center, NOAA Fisheries | www.pifsc.noaa.gov
- Pacific Islands Regional Office, NOAA Fisheries | www.fpir.noaa.gov
- Pacific Region, U.S. Fish & Wildlife Service | www.fws.gov/pacific
- District 14, U.S. Coast Guard | www.uscg.mil/d14

State Agencies

- Hawaii Department of Land & Natural Resources | www.hawaii.gov/dlnr
- Guam Office of the Governor | www.guamgovernor.net
- Department of Marine & Wildlife Resources, American Samoa Office of the Governor | americansamoa.gov/index.php/2012-04-25-19-44-32/2012-04-25-19-52-04/departments/marine-wildlife
- Division of Fish & Wildlife Commonwealth of the Northern Mariana Islands | www.dfw.gov.mp

Councils & Commissions

- Western Pacific Fishery Management Council | www.wpcouncil.org

NEW ENGLAND

Federal Agencies

- Social Sciences Branch, Northeast Fisheries Science Center, NOAA Fisheries | www.nefsc.noaa.gov/read/socialsci
- Northeast Fisheries Science Center, NOAA Fisheries | www.nefsc.noaa.gov
- Greater Atlantic Regional Fisheries Office, NOAA Fisheries | www.greateratlantic.fisheries.noaa.gov
- Northeast Region, U.S. Fish & Wildlife Service | www.fws.gov/northeast
- District 1, U.S. Coast Guard | www.uscg.mil/D1

State Agencies

- Maine Department of Marine Resources | www.maine.gov/dmr/index.htm
- Rhode Island Department of Environmental Management | www.dem.ri.gov
- Massachusetts Division of Marine Fisheries | www.mass.gov/eea/land-use-habitats/marine-fisheries/
- Connecticut Department of Environmental Protection | www.ct.gov/dep/site/
- New Hampshire Fish & Game Department | www.wildlife.state.nh.us

Councils & Commissions

- New England Fishery Management Council | www.nefmc.org
- Atlantic States Marine Fisheries Commission | www.asmfc.org

MID-ATLANTIC

Federal Agencies

- Social Sciences Branch Northeast Fisheries Science Center, NOAA Fisheries | www.nefsc.noaa.gov/read/socials-ci
- Northeast Fisheries Science Center, NOAA Fisheries | www.nefsc.noaa.gov
- Greater Atlantic Regional Fisheries Office, NOAA Fisheries | www.greateratlantic.fisheries.noaa.gov
- Northeast Region, U.S. Fish & Wildlife Service | www.fws.gov/northeast
- District 5, U.S. Coast Guard | www.uscg.mil/D5

State Agencies

- Bureau of Marine Resources, New York Department of Environmental Conservation | www.dec.ny.gov/about/796.html
- New Jersey Division of Fish & Wildlife | www.state.nj.us/dep/fgw
- Pennsylvania Fish & Boat Commission | fishandboat.com/mpag1.htm
- Delaware Division of Fish & Wildlife | www.fw.delaware.gov
- Fisheries Service, Maryland Department of Natural Resources | www.dnr.state.md.us/fisheries
- Virginia Marine Resources Commission | www.mrc.state.va.us

Councils & Commissions

- Mid-Atlantic Fishery Management Council | www.mafmc.org
- Atlantic States Marine Fisheries Commission | www.asmfc.org

SOUTH ATLANTIC

Federal Agencies

- Social Science Research Group, Southeast Fisheries Science Center, NOAA Fisheries | www.sefsc.noaa.gov/socialscience.jsp
- Southeast Fisheries Science Center, NOAA Fisheries | www.sefsc.noaa.gov
- Southeast Regional Office, NOAA Fisheries | sero.nmfs.noaa.gov
- Southeast Region, U.S. Fish & Wildlife Service | www.fws.gov/southeast
- Southwest Region, U.S. Fish & Wildlife Service | www.fws.gov/southwest
- District 7, U.S. Coast Guard | 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
- Coastal Resources Division Georgia Department of Natural Resources | crd.dnr.state.ga.us
- Florida Fish & Wildlife Conservation Commission | myfwc.com

Councils & Commissions

- South Atlantic Fishery Management Council | www.safmc.net
- Atlantic States Marine Fisheries Commission | www.asmfc.org

GULF OF MEXICO

Federal Agencies

- Social Science Research Group, Southeast Fisheries Science Center, NOAA Fisheries | www.sefsc.noaa.gov/socialscience.jsp
- Southeast Fisheries Science Center, NOAA Fisheries | www.sefsc.noaa.gov
- Southeast Regional Office, NOAA Fisheries | sero.nmfs.noaa.gov
- Southeast Region, U.S. Fish & Wildlife Service | www.fws.gov/southeast
- Southwest Region, U.S. Fish & Wildlife Service | www.fws.gov/southwest
- District 8, U.S. Coast Guard | www.uscg.mil/D8

State Agencies

- Florida Fish & Wildlife Conservation Commission | myfwc.com
- Marine Resources Division, Alabama Department of Conservation & Natural Resources | www.outdooralabama.com
- Mississippi Department of Marine Resources | www.dmr.state.ms.us
- Louisiana Department of Wildlife & Fisheries | www.wlf.state.la.us
- Texas Parks & Wildlife Department | www.tpwd.state.tx.us

Councils & Commissions

- Gulf of Mexico Fishery Management Council | www.gulfcouncil.org
- Gulf States Marine Fisheries Commission | www.gsmfc.org

PROFESSIONAL ORGANIZATIONS

- North American Association of Fisheries Economists | oregonstate.edu/Dept/IIFET/NAAFE/Home.html
- International Institute of Fisheries Economics & Trade | oregonstate.edu/dept/iifet

OTHER ORGANIZATIONS & INFORMATION

- Organisation for Economic Co-operation & Development | www.oecd.org/home
- 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

Glossary

Kodiak, Alaska
photo credit: NOAA Fisheries)

Angler[1]
A person catching fish or shellfish with no intent to sell, including people releasing the catch. Also known as a recreational fisherman.

Annual Payroll[2]
Total payroll 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[3]
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 received 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[4]
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 removed from a specific fishery where fish stocks or stock complexes are considered overfished or subject to overfishing.

Bycatch[1]
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[1]
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 which 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[5]
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 and Individual Fishing Quotas. Note that a catch share allocated to a sector is different than 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) because the recipient of the catch share is responsible for terminating fishing activity when their specific share is reached.

Coastal County[6]
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; or 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)[7]
For this report, the CFLQ is calculated as the ratio of a state's distribution of employment in commercial fishing industries compared to 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)[1]
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% of the TAC in the pollock, halibut, sablefish, crab, and groundfish fisheries is allocated to the CDQ program.

Dedicated Access Privileges (DAPs)[8]
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 often 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[1]
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[9]
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[10]

In fisheries, ecolabelling schemes entitle a fishery product to bear a distinctive logo or statement which certifies that the fish has been harvested in compliance with specified conservation and sustainability standards. The logo or statement is intended to make provision for informed decisions by purchasers whose choice may promote and stimulate the sustainable use of fishery resources.

Economic Impact Model[11,12]

Economic impact models capture how sales in a sector generate economic impacts directly in the sector in which the sale was made and then ripple throughout the state and national economy as each dollar spent generates additional sales by other firms and consumers. The NMFS 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 the 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 NMFS Recreational Economic Impact Model, which also uses an IMPLAN platform, estimates the economic impacts generated by expenditures made by saltwater anglers.

Economic Impacts[11,12]

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 including: 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 by state (also known as value-added impacts) from expenditures related to recreational fishing.

Effort[1]

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[13]

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[14]

Businesses with payroll and paid employees with a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with 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[15]

As defined by the Endangered Species Act, 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)[15]
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[9]
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[10]
Refers to activities that occur when a commercial fishing boat lands or unloads a catch. For example, the price received by a captain (at the point of landing) for the catch is an ex-vessel price.

Exclusive Economic Zone (EEZ)[1]
The EEZ is the area that extends from the seaward boundaries of the coastal states to 200 nautical miles. 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[1]
A fish stock refers to the living resources in the community or population from which catches are taken in a fishery. Use of 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 but here it is also intended to include commercial invertebrates and plants.

Fishery Management Council (FMC) or Regional Fishery Management Council[4]
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)[4]
1. A document prepared under supervision of the appropriate fishery management council (FMC) for management of stocks of fish judged to be in need of 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[4]
A market-based fisheries management tool where access to fisheries resources is limited to a specific group of fishermen. See also ”Catch Share Progam.”

Fishing Day
For this report, a fishing day refers to a partial or full day spent recreational fishing and can be different than a fishing trip. For example, one fishing trip can consist of more than one fishing day. This term is used in the Alaska recreational fishing tables.

Fishing Effort[10]
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) engaged 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 than a fishing day. For example, one fishing trip can consist of more than one 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)[13]
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.

Harvest[1]
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 fishermann (angler), but includes fish thrown back dead in Hawai'i and the Atlantic and Gulf states. See also "Catch" and "Release."

Individual Fishing Quota (IFQ)[1]
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 often 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)[1]
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 Transferable 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 & processing, and 2) transport, support, & 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 ten 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[1]

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[4]

As defined in the Magnuson-Stevens Act, Limited Access Privilege Programs limit participation in a fishery to those satisfying certain eligibility criteria or requirements contained in a fishery management plan 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 of the fishery that may be received or held for exclusive use by a person. It includes an individual fishing quota (IFQ) or an individual tradable quota (ITQ) but does not include community development quotas (CDQs). LAPPs are sometimes known as Dedicated Access Privileges or DAPs. However, unlike LAPPs, DAPs generally encompass community development quotas as well as individual fishing quotas (see "Dedicated Access Privileges"). LAPPs are a type of catch share program. See also "Catch Share Program."

License Limitation Program or Limited Entry Program[1]

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 often uses this management tool as a means of limiting entry into a fishery.

Limited Entry Program

Also known as a license limitation program; see "License Limitation Program."

Location Quotient[7]

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 discussion below assumes the defaults are used. LQs also allow areas to be easily compared to 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 is the case 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. Second, 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)[1]

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[4]

Market-based management is an umbrella term that encompasses approaches that provide economic incentives to protect fisheries from overharvest. These approaches are in contrast to 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 (see "Limited Access Privilege Program") that includes an individual fishing quota. A limited access privilege program provides individual fishermen an exclusive, market-based share of a harvest quota or total allowable catch 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 characterized 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 and employees, and annual payroll for these fishing- and marine-related industries was used to characterize their relative levels of economic activity in a state. These industries were categories into one of two industry sectors: 1) seafood sales & processing, and 2) transport, support, & 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[3]

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 which may or may not be the owner's principal source of income.

Non-resident

For this report, a non-resident in the U.S. table refers to a recreational fisherman (angler) who resides outside of 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[16]
Overcapacity refers to a situation where the harvesting capability within a given fishery exceeds the level of harvest allowed for that fishery.

Overcapitalization[10]
When the amount of harvesting capacity in a fishery exceeds the amount needed to harvest the desired amount of fish at least cost.

Overfished[1]
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 beyond 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 limit biological reference point that is used as the signpost defining an "overfished condition."

Overfishing[1]
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[17]
Refers to any species which is protected by either the Endangered Species Act (ESA) or the Marine Mammal Protection Act (MMPA), and which is under the jurisdiction of NOAA Fisheries (NMFS). This includes all threatened, endangered, and candidate species, as well as all cetaceans and pinnipeds, excluding walruses.

Regional Fishery Management Council or Fishery Management Council (FMC)[4]
The Magnuson-Stevens Act established eight Regional Fishery Management Councils 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 Hawaii 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 of 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[17]
A fisheries management tool where a group of fishermen are allocated a quota or share of a total allowable catch, in accordance with an approved plan. It is considered a type of catch share program. See also "Catch Share Program."

Species[1]
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[1]
Group of species considered together often 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[13]
As defined by the Endangered Species Act, a threatened species is any species which 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[1]
A firm's sales minus the cost of the goods and services it purchases from other industries to produce its outputs.

GLOSSARY NOTES

[1] 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 [accessed September 19, 2014].

[2] "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]

[3] "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].

[4] 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 [accessed September 19, 2014].

[5] 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 [accessed September 22, 2014].

[6] "Coastal Counties." U.S. Census Bureau, U.S. Department of Commerce. Available at: http://www.census.gov/geo/landview/lv6help/coastal_cty.html [accessed September 19, 2014].

[7] 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 [accessed September 19, 2014].

[8] 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 [accessed1 September 19, 2014].

[9] P. 4 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 Tech. Memo. NMFS-F/SPO-94. Available at: http://www.st.nmfs.noaa.gov/st5/publication/marine_angler.html [accessed September 19, 2014].

[10] "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].

[11] 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 [accessed September 19, 2014].

[12] 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].

[13] "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].

[14] "Economic Census Definitions." U.S. Census Bureau. Available at: http://www.census.gov/econ/census/help/sector/definitions.html [accessed September 22, 2014].

[15] 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].

[16] "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].

[16] "P. 4 in: "An Assessment of Excess Harvesting Capacity in Federally Managed Commercial Fisheries." U.S. Dep. Commerce, NOAA Tech. Memo. NMFSF/SPO-93, 366 p. Available at: http://www.nmfs.noaa.gov/msa2007/docs/042808_312_b_6_report.pdf [accessed September 22, 2014].