Fisheries Economics of the United States 2020

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-236
February 2023

For assistance with this document, please contact NOAA Fisheries Office of Science and Technology at (301) 427-8100 or visit https://www.fisheries.noaa.gov/contact/office-science-and-technology



Front cover: A recreational fisherman catches bluefish with his dog. Photo: Paula Prior
Inside cover: Commercial crab pots in Unalaska, Alaska. Photo: Mark Carls

Fisheries Economics of the United States 2020

Economics and Social Analysis Division
Office of Science and Technology
NOAA Fisheries (NMFS)
1315 East-West Highway, 12th floor
Silver Spring, MD 20910

NOAA TECHNICAL MEMORANDUM NMFS-F/SPO-236
FEBRUARY 2023



U.S. Department of Commerce
Gina M. Raimondo, Secretary of Commerce

National Oceanic and Atmospheric Administration
Dr. Richard W. Spinrad, NOAA Administrator

National Marine Fisheries Service
Janet Coit, 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. https://www.fisheries.noaa.gov/national/population-assessments/fishery-stock-status-updates#2018-quarterly-updates

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. https://www.fisheries.noaa.gov/national/commercial-fishing/fisheries-united-states

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 United States 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. https://www.fisheries.noaa.gov/national/commercial-fishing/fisheries-economics-united-states

Suggested Citation:

National Marine Fisheries Service. 2023. Fisheries Economics of the United States, 2020. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-236, 231 p.

Or online at:

https://www.fisheries.noaa.gov/national/sustainable-fisheries/fisheries-economics-united-states

Contents

Preface v
Key Terminology vi

National Overview 1
United States Summary 2
United States Tables 19

North Pacific Region 23
North Pacific Summary 24
Alaska Tables 31

Pacific Region 35
Pacific Summary 36
Pacific Tables 43
California Tables 47
Oregon Tables 51
Washington Tables 55

Western Pacific Region 59
Western Pacific Summary 60
Hawai'i Tables 65

New England Region 69
New England Summary 70
New England Tables 77
Connecticut Tables 81
Maine Tables 85
Massachusetts Tables 89
New Hampshire Tables 93
Rhode Island Tables 97

Mid-Atlantic Region 101
Mid-Atlantic Summary 102
Mid-Atlantic Tables 109
Delaware Tables 113
Maryland Tables 117
New Jersey Tables 121
New York Tables 125
Virginia Tables 129

South Atlantic Region 133
South Atlantic Summary 134
South Atlantic Tables 139
East Florida Tables 143
Georgia Tables 147
North Carolina Tables 151
South Carolina Tables 155

Gulf of Mexico Region 159
Gulf of Mexico Summary 160
Gulf of Mexico Tables 165
Alabama Tables 169
West Florida Tables 173
Louisiana Tables 177
Mississippi Tables 181
Texas Tables 185

Data Sources 189

Publications 193

Resources 219

Glossary 223



Fisherman cleaning and filleting a fresh caught ono (wahoo).
Photo: NOAA Fisheries

Preface

FISHERIES ECONOMICS OF THE UNITED STATES, 2020

Fisheries Economics of the United States, 2020, is the fifteenth 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 2011 to 2020 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 establishments, payroll, employees, and annual receipt information for fishing-related industries.

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

Sources of Data

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

Acknowledgments

Many people participated in the production of this report. Shelley Arenas and Alex Richardson are the editors of this report series; Rita Curtis, Sabrina Lovell, Ben Fissel, and Alex Richardson were primary authors and analysts on this edition of Fisheries Economics of the United States. Key collaborators include Emily Markowitz, Molly Graham, Lauren Dolinger Few, Michael Liddel, and Michael Lewis. Other colleagues who provided information and expertise included Mike Brown (California Department of Fish and Wildlife), and Jason Edwards and Rob Ames (Pacific States Marine Fisheries Commission). The report's design and layout was done by Avi Litwack and Jacqui Fenner.

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

Economics and Social 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

COMMERCIAL FISHERIES

What Does the Term Mean?

Commercial fisheries, in this report, refers to fishing operations that sell their catch for profit. It does not include saltwater anglers who fish for sport or subsistence fishermen. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species and species groups.

Metrics Definitions[1]

Economic Impacts
The employment, personal income, and output generated by the commercial harvest sector and other major components of the U.S. seafood industry.

Landings
The poundage or number of fish unloaded by commercial fishermen or brought to shore.

Landings Revenue
The price that fishermen are paid for their catch.

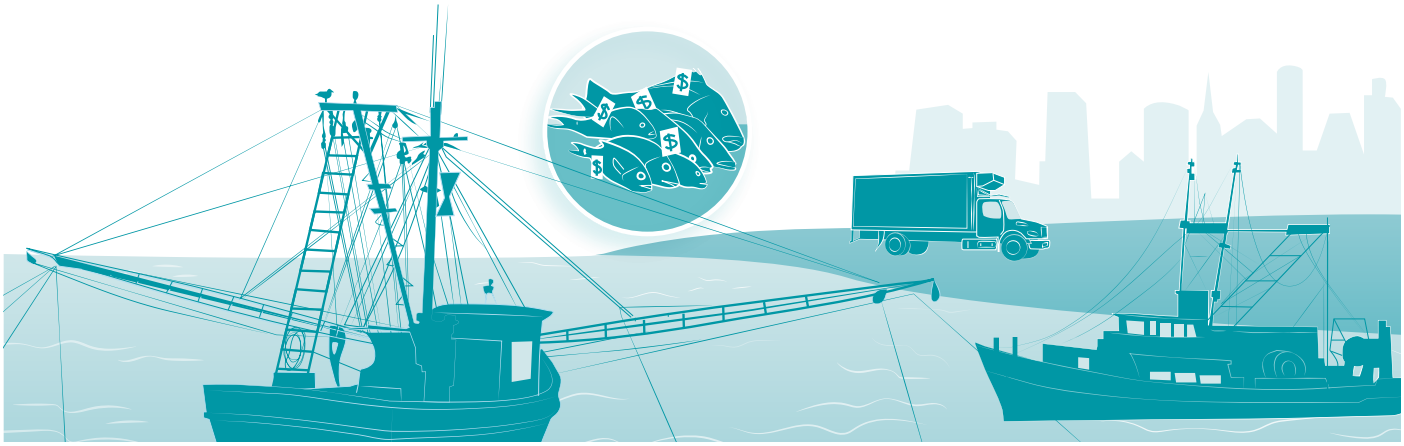
Ex-vessel Prices
The price received by a captain, at the point of landing, for the catch.

Frequently Asked Questions

What are fish caught with in commercial fishing?
Fish can be caught using a variety of gear, including potts and traps, trawls and seines, gillnets, dredges, and hooks and lines.

What happens to seafood caught by commercial fishermen?
Fish caught by commercial fishermen are first processed and packaged. Then they are sold to various establishments for consumption, such as restaurants and supermarkets. They can also be used as animal food and for medical purposes (such as fish oil pills).

Does the United States get seafood from anywhere else?
Not all fish are caught by U.S. commercial fishermen. A large percent of the seafood the U.S. receives is imported.



[1] For full definitions, see the Glossary section in the back of this publication.

RECREATIONAL FISHERIES

What Does the Term Mean?

Recreational fisheries, or recreational fishing, refer to fishing for pleasure rather than selling the fish for profit (i.e., commercial fishing) or for subsistence. The recreational fisheries section of Fisheries Economics of the U.S. reports on angler trips, participation, expenditures and economic impacts, and catch of key species and species groups. Only saltwater, or marine, recreational fishing is included in FEUS.

Metrics Definitions

Economic Impacts and Expenditures
The employment, sales, and personal income generated by expenditures on fishing trips and fishing-related durable goods (i.e. equipment used for recreational fishing).

Fishing Trips/ Effort
The number of fishing trips taken by recreational fishermen (anglers).

Participation
The number of anglers who fish in a given state or region. Anglers can be from in-state or out-of-state and from a coastal county or non-coastal county.

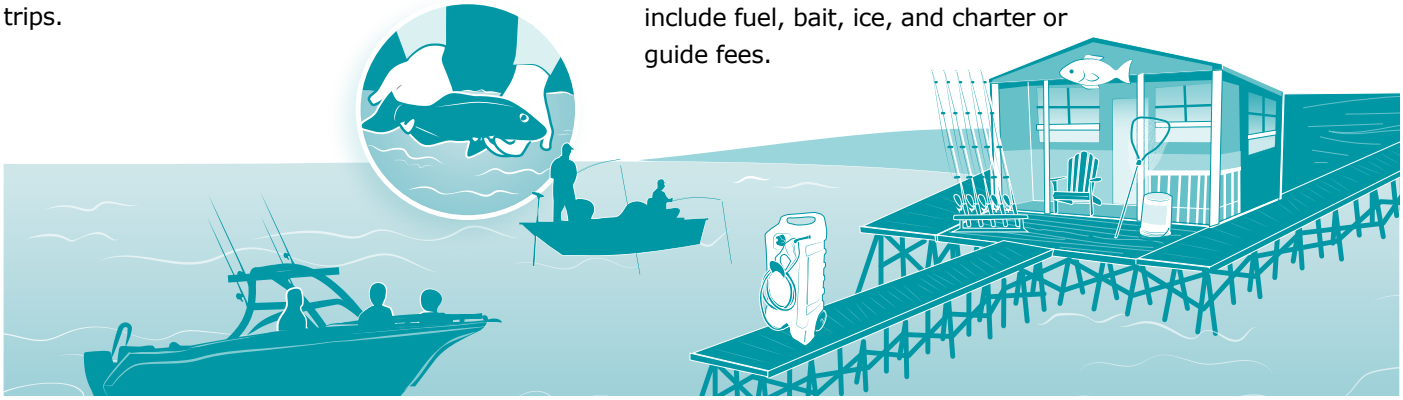
Harvest and Release
The total number or fish either: 1) caught and kept (harvested), or 2) caught and released, by recreational anglers from an area over a period of time. Total catch is the sum of the number of fish harvested and released.

Frequently Asked Questions

How do anglers affect the fishing economy?
When anglers participate in fishing activities, they support sales and employment in recreational fishing and other types of businesses. Anglers buy fishing equipment from bait and tackle shops, rent or buy boats, or pay to have others take them on charter boats to fish. They may also pay for food and drink at local restaurants, purchase gas for their boat, and stay in hotels for overnight fishing trips.

What do anglers spend their money on?
Durable goods, such as fishing tackle, equipment, and boat and vehicle expenses. Trips, which can be taken in one of three modes: as for-hire (charter or party boat), private (or rental boat), and shore (fishing from shore). Some examples of trip expenditures include fuel, bait, ice, and charter or guide fees.

What do anglers do with their catch?
Some anglers catch fish to eat (i.e., harvest), while others practice catch and release. In recreational fishing, anglers do not sell the fish they catch for profit.



MARINE ECONOMY

What Does the Term Mean?

The "Marine Economy," in this report, refers to the economic activity generated by sectors of the economy that depend directly on oceans (or Great Lakes). We report on two industry sectors within the marine economy: 1) seafood sales and processing; and 2) transport, support, and marine operations. Information such as the number of establishments, number of employees, and annual payroll for these fishing and marine-related industries is used to determine their relative levels of economic activity in a state.

Metrics Definitions

Seafood Sales and Processing
These sectors are a direct representation of the Establishments, Employees, Sales, and Payroll for seafood processors, wholesalers, and retailers that buy fish from commercial fishermen and distribute to consumers.

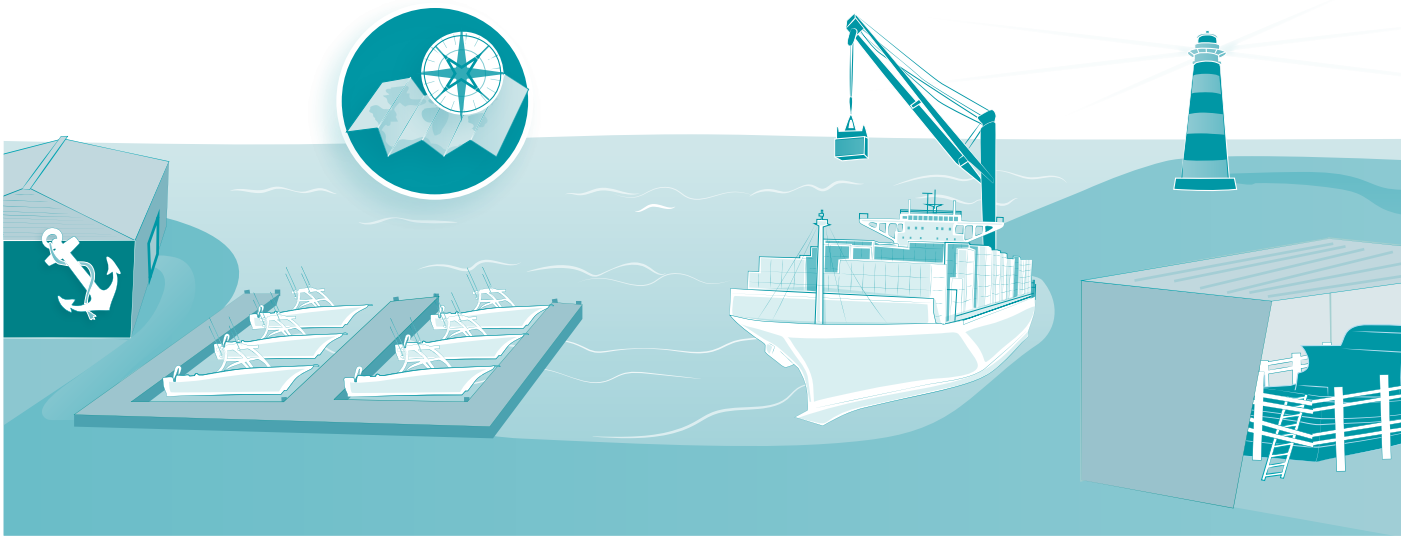
Transport, Support, and Marine Operations
The various sectors that contribute to the overall marine economy that may or may not support the fishing economy.

Frequently Asked Questions

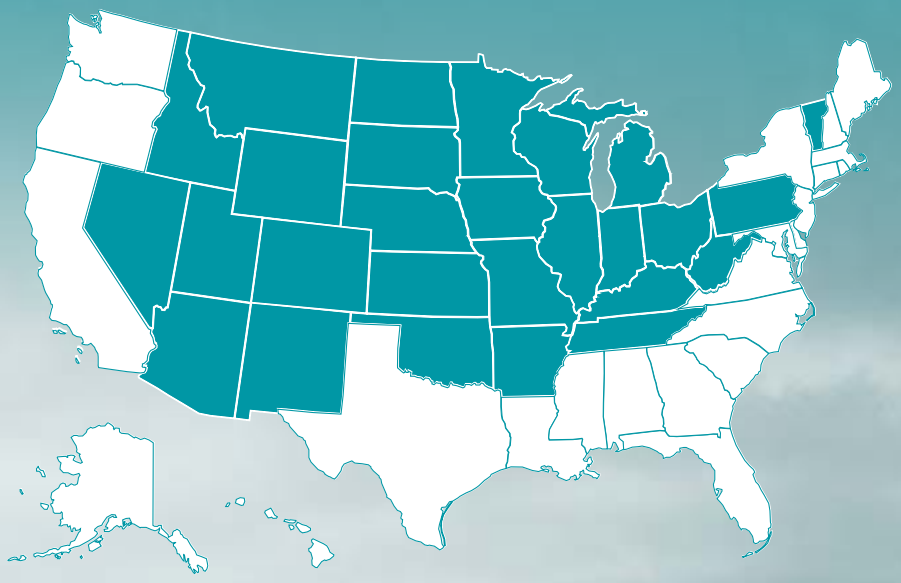
Does the marine economy include commercial and recreational fisheries?
Yes, commercial and recreational fisheries contribute to the overall marine economy.

What marine economy sectors, featured in the report, are related to commercial and recreational fisheries?
The seafood product preparation & packaging, wholesale, and retail seafood sales sectors are major parts of the commercial fishing industry. The Marinas, Navigational Services, Port & Harbor operations, and Ship & Boat Building sectors provide goods and services used in both commercial and recreational fisheries.

Why does the report include sectors that are independent of the fishing economy?
Information on sectors that are independent of the fishing economy, like freight transportation, provides context for how national and regional economies are affected by the use of ocean resources.



National Overview



Commercial squid boats in Pacific Grove, California.
Photo: NOAA Fisheries/Rosemary Kosaka

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 three nautical miles of their coasts.

Regional Fishery Management Councils

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

Nationwide, 46 fishery management plans (FMPs) provide a framework for managing the harvest of 460 fish stocks and stock complexes.[1] These plans aim to manage the harvest of fish in U.S. and shared waters, using sound scientific research, to maximize fishing opportunity while ensuring the sustainability of fisheries and fishing communities. Regional Fishery Management Councils (FMCs) develop FMPs in eight regions nationwide: North Pacific, Pacific, Western Pacific, New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, and Caribbean. After an FMP is developed, the Secretary of Commerce in consultation with NOAA Fisheries must approve it before it is implemented.

Fishery management plans must specify objective and measurable criteria to determine when a stock is overfished or subject to overfishing. Enough information exists to determine the overfishing status for 323 of the 460 stocks and stock complexes; the overfished status of 251 stocks and stock complexes is known. At the end of 2020, there were 26 stocks on the overfishing list (or 8% of stocks with known overfishing status) and 49 stocks on the overfished list (or 20% of stocks with known status).[2] Since 2000, 47 stocks have been rebuilt (unchanged from 2019).

COVID-19 Impacts on the Seafood Sector and For-Hire Operations

The COVID-19 pandemic caused large scale disruption to the U.S. economy and global markets in 2020. In a recent study of the effects of COVID-19 on the seafood industry (commercial harvesters, aquaculture, seafood dealers and processors) and for-hire fishing sector in 2020, NOAA Fisheries documented that the impacts to these sectors were immediate, more severe and more long-lasting than those incurred in most other sectors of the economy.[3] An abbreviated list of key findings from this study are listed below.

- The for-hire sector experienced an 18% decrease in trips during 2020 relative to the baseline period. The for-hire sectors in Alaska and Hawaii, which rely heavily on non-resident tourists for a large share of their customers, were the hardest hit, experiencing a 51% and 72% decrease, respectively, in angler trips relative to the five-year baseline. Trip impacts in other regions ranged from 5% (Southeast) to 33% (Southwest/California).

- Overall, commercial fishing landings revenue declined 15% in 2020 (-19% in real terms, after adjusting for inflation) relative to the five-year baseline (2015–2019). In real terms, landings revenue declined the most in Alaska (-20%), the Pacific Region (-25%), and Hawaii (-30%). The New England Region (-18%), South Atlantic (-10%) and the Gulf of Mexico Region (-17%) also experienced double digit declines relative to the baseline. Landings revenue in the Mid-Atlantic Region declined 5% relative to the baseline. Depressed market conditions existed in all regions, with high-value products and seafood exports bearing the brunt of these losses, particularly during the initial months of the pandemic.

- To better understand the impact of COVID-19 relative to other ongoing economic trends and seasonal fluctuations during 2020, for the first time, NOAA Fisheries conducted a large-scale sectoral assessment of the seafood industry. This assessment used an approach that mirrors the approach economists use to assess the status of the U.S. economy, i.e., whether it is experiencing a recession, an economic recovery, etc.

[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] NOAA Fisheries. 2021. Status of Stocks 2020. Office of Sustainable Fisheries. [Available at https://www.fisheries.noaa.gov/national/sustainable-fisheries/status-stocks-2020]
[3] NMFS. 2021. U.S. Seafood Industry and For-hire Sector Impacts from COVID-19: 2020 in Perspective. NOAA Tech. Memo. NMFS-SPO-221, 88 p. Note that the landings revenue and for-hire angler trip statistics cited here have been updated to reflect the more recent data used in this report.

The analysis identified a significant and sustained contraction in the commercial fishing sector beginning from the first quarter of 2019 (2019 Q1) through the second quarter of 2020 (2020 Q2). Seasonally adjusted quarterly total U.S. ex-vessel revenue fell by 27% over this period, from a peak of $1.3 billion to a low of $953 million.

The seafood dealer/processor sector also experienced a sustained contraction but it was of shorter duration: beginning 2019 Q3 througzh 2020 Q2, this sector sustained a decline in value added of $598 million, a 13.47% decline. Seafood imports helped to cushion the impact of the economic downturn in the domestic harvest sector, albeit in states with limited seafood imports such as Alaska. Impacts to the harvest sector directly translated into losses to the seafood dealers and processors.

- Globally, seafood demand from the foodservice sector declined sharply. In the U.S., foodservice sales fell 40% in the first quarter of COVID-19 (March–May 2020) relative to average sales in the three preceding quarters. Mollusks (e.g., scallops, oysters, mussels) incurred the highest losses (down 60%). For the period March to November 2020, sales were down 21% relative to the three preceding quarters.

- In the U.S. and abroad, seafood retail sales surged in 2020. A recent study by FMI (also known as The Food Industry Association) found that in the United States, seafood retail sales increased significantly in 2020 across all seafood categories: frozen, up 36%; fresh, up 25%; and grocery (canned, pouches, etc.), up 21%.

- Aquaculture operations also faced disrupted markets domestically and globally as well as increased costs from having to maintain product while businesses searched for new markets. Shellfish growers were particularly hard hit given their reliance on export markets and restaurant services.

- Seafood exports declined 23% in 2020 when compared to the baseline. All regions experienced decreases in export values, with the exception of the Pacific Islands. Regionally important species — pollock, cod, lobster, scallops, crab, shrimp, and wild and farmed salmon — experienced overall declines in export values. In contrast, seafood imports in 2020 declined 1%.

Transboundary and International Fisheries

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

NOAA Fisheries participates in various international and regional fisheries management organizations (RFMOs) that promote international cooperation to achieve effective, responsible marine stewardship and ensure sustainable fisheries management. 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) Code of Conduct for Responsible Fisheries established in 1995.

RFMOs are multinational organizations with interests in internationally shared fish stocks and associated fishing activities. Primary objectives of these RFMOs are to research, assess, and adopt measures for the conservation and coordinated management of target species, such as bigeye tuna. Some RFMOs also collect data and evaluate and adopt measures for the conservation and scientific assessment of non-target species, also known as bycatch. Non-target species include seabirds, marine mammals, sea turtles, and fish species caught incidentally while fishing for target species. These entities are listed by ocean basin below.[4]

[4] See https://www.fisheries.noaa.gov/international-affairs/international-and-regional-fisheries-management-organizations (accessed February 15, 2022).

Regional Fishery Management Organizations

Atlantic Ocean Regional Fisheries Management Organizations:

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

Pacific Ocean Regional Fisheries Management Organizations:

- Agreement on the International Dolphin Conservation Program
- Inter-American Tropical Tuna Commission
- North Pacific Anadromous Fish Commission
- Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea
- Pacific Salmon Commission
- Western and Central Pacific Fisheries Commission
- International Pacific Halibut Commission

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

NOAA Fisheries is actively collaborating with other federal agencies as part of the National Ocean Council Committee on IUU Fishing and Seafood Fraud. This network of agencies works together to implement measures outlined in an action plan developed by the Presidential Task Force on Combating IUU Fishing and Seafood Fraud. As part of this effort, in December 2016 NOAA Fisheries issued the final rule establishing the Seafood Import Monitoring Program to further combat IUU fishing practices and to identify misrepresented seafood imports before they enter the U.S. market. The data collected under this program allows certain priority species, identified as especially vulnerable to IUU fishing and seafood fraud, to be traced from the point of entry into U.S. commerce back to the point of harvest or production to verify whether it was lawfully harvested or produced. For 11 of the 13 species/species groups covered in the final rule, the rule went into effect January 1, 2018. Shrimp and abalone compliance became effective on December 31, 2018.[5] By not allowing IUU fish products into the U.S., the Seafood Import Monitoring Program helps level the playing field for commercial fishermen by reducing unfair competition in the marketplace.

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). NOAA Fisheries has jurisdiction over 165 endangered and threatened marine species (see Table 1).

Table 1. Endangered and Threatened Species under NOAA Fisheries Jurisdiction[6]

Species Group	Number of Species / Sub-species Populations
Whales	16
Dolphins and Porpoises	8
Seals and Sea Lions	12
Sea Turtles	25
Fish and Sharks	75
Corals and Marine Invertebrates	28
Plants	1
Total Threatened and Endangered Marine Species	165

A recent Report to Congress covering the period October 1, 2018 to September 30, 2020, indicates that NOAA Fisheries managed 99 domestic (includes some transnational) and 66 foreign marine and anadromous species — including salmon, sturgeon, sawfish, sharks, rays, seagrass, mollusks, sea turtles, corals, and marine mammals. The report addresses the 99 transnational and domestic species for which a recovery plan has or will be developed.[7]

[5] See https://www.iuufishing.noaa.gov/recommendationsandactions/recommendation1415/finalruletraceability.aspx (accessed February 22, 2022).
[6] NOAA Fisheries Office of Protected Resources Endangered Species Conservation website (https://www.fisheries.noaa.gov/topic/endangered-species-conservation#conservation-&-management) (accessed September 22, 2021).
[7] "Recovering Threatened and Endangered Species – Report to Congress" available at: https://www.fisheries.noaa.gov/resource/document/recovering-threatened-and-endangered-species-report-congress-fy-2019-2020.

Status of Domestic Species

The status of these 99 species for this period was:

- 25 (25.3%) were stabilized or increasing.
- 11 (11.1%) were declining.
- 17 (17.2%) were mixed, with their status varying by population location.
- 46 (46.5%) were unknown, because we lacked sufficient trend data to make a determination.

NOAA Fisheries is also responsible for protecting marine mammals under the Marine Mammal Protection Act.[8] In authorizing this act in 1972, Congress recognized that marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities; marine mammal species or stocks should not be allowed to fall below their optimum sustainable population levels; measures should be taken to replenish marine mammal species or stocks; there is inadequate knowledge of the marine mammal ecology and population dynamics; and marine mammals have proven to be resources of great international significance. NOAA Fisheries engages in activities such as preventing the 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, coastal waters, and the open ocean where marine and anadromous species feed, grow, and reproduce. Consideration of these habitat areas is part of an ecosystem-based management approach for managing fisheries in a more sustainable and holistic manner. Since 1996, federal fishery management plans are required to identify and describe essential fish habitat (EFH) for all federally managed species. Habitat areas that are necessary for a fish species' growth, reproduction, and development are considered EFH. To the extent practicable, NOAA Fisheries and the FMCs must minimize adverse effects to EFH caused by fishing.

Though not required, Habitat Areas of Particular Concern (HAPC) can be identified to help focus EFH conservation efforts. The HAPC designation alone does not confer additional protection to or place restrictions on an area, but helps to focus EFH conservation, management, and research priorities. HAPC designation is a valuable way to acknowledge areas based on their ecological importance, rarity, and/or vulnerability, indicating a greater need for conservation and management. To date, approximately 299 HAPCs have been designated, including a combination of habitat types, discrete areas, and waterways. Some of these areas do overlap.

In order to help prioritize efforts related to EFH, NOAA Fisheries held an EFH Summit in 2016 and then published an updated Marine Fisheries Habitat Assessment Improvement Plan in 2018.[9] Both efforts focused on identifying habitats that are most essential for sustaining federally managed species and on supporting research to understand how these habitats directly contribute to fisheries productivity. A continued priority is refining EFH and HAPC designations for habitat-limited species and habitats that play a key role in offshore stock productivity.

Catch Share Programs

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. Catch share programs are one of these tools and encompass a range of management strategies that share a common feature: A secure share of fish is dedicated to individual fishermen, cooperatives, fishing communities, and other entities for their exclusive use. In 2010, the NOAA catch share policy was released to encourage well-designed catch share programs to help maintain or rebuild fisheries.[10] The policy also aims to sustain fishermen, communities, and vibrant working waterfronts, including the cultural and resource-access traditions that have been part of this country since its founding.

Currently, there are 17 federal catch share programs nationwide. These programs include limited access privilege programs (LAPPs), individual fishing quota programs (IFQs), individual transferable quota programs (ITQs), fishing community development quota programs (CDQs), fishing cooperatives, and fishing sectors.[11]

[8] The U.S. Fish and Wildlife Service protects walrus, manatees, otters, and polar bears.
[9] The Habitat Assessment Improvement Plan Update is available at https://spo.nmfs.noaa.gov/sites/default/files/TMSPO181_0.pdfhttps://www.fisheries.noaa.gov/resource/document/habitat-assessment-improvement-plan-2010.
[10] See https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares.
[11] See Section 303A of the Magnuson-Stevens Act for more information on LAPP requirements.

Implementation dates of these programs span three decades, with six programs established in the 1990s and six established since 2010 (see Table 2). Eleven programs manage a single species or, in some cases, two species but as separate management units; the other six programs manage multiple species. Seven of the programs operate in the North Pacific (Alaska) Region.

Table 2. Existing Catch Share Programs in Federal Fisheries[12, 13]

Region	Program	Year Implemented
North Pacific	Western Alaska Community Development Quota (CDQ) Program	1992
	Alaska Halibut and Sablefish IFQ Program	1995
	American Fisheries Act (AFA) Pollock Cooperatives	1998
	Bering Sea and Aleutian Islands (BSAI) King and Tanner Crab Rationalization	2005
	Aleutian Islands Pollock Fishery	2005
	Bering Sea and Aleutian Islands (BSAI) Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80)	2008
	Central Gulf of Alaska (GOA) Rockfish Program *(pilot implemented in 2007)*	2011
Pacific	Pacific Coast Sablefish Permit Stacking Program	2001
	Pacific Groundfish Trawl Rationalization Program (whiting and non-whiting trawl)	2011
Northeast	Northeast Multispecies Sectors: Georges Bank Cod - Hook Gear (2004) and Georges Bank Cod - Fixed Gear (2007)	2010
	Northeast General Category Sea Scallop IFQ Program	2010
Mid-Atlantic	Mid-Atlantic Surfclam and Ocean Quahog IFQ Program	1990
	Mid-Atlantic Golden Tilefish IFQ Program	2009
Atlantic Highly Migratory Species	Atlantic Bluefin Tuna Individual Bluefin Quota Program	2015
South Atlantic	South Atlantic Wreckfish ITQ Program	1992
Gulf of Mexico	Red Snapper IFQ Program	2007
	Grouper and Tilefish IFQ Program	2010

In 2010, NOAA Fisheries initiated an effort to track catch share program performance.[14] Findings from the initial report show that existing catch share programs have ended the race to fish (in their respective fisheries), resulting in longer fishing seasons, safer working conditions, and improved management performance. The report also shows that existing catch share programs have resulted in reduced fishing capacity to better match stock size — a management objective in the majority of catch share programs evaluated. Economic performance for the vessels remaining in the program improved, as measured by such metrics as revenue per vessel and average price.

Updated information on selected performance indicators is provided in Table 3. Briefly, results show that inflation-adjusted 2019 landings revenue from catch share species increased in 7 of the 16 programs and/or sub-components of the programs relative to their respective baseline periods. In addition, the number of active vessels decreased in all but one program (Central Gulf of Alaska Rockfish program), while inflation-adjusted revenue per active vessel increased in all programs since their implementation, with an average increase of 157%. Further, results show that only two programs exceeded the annual catch limit (ACL) in 2019 (the BSAI Crab Rationalization and the Amendment 80 catch share programs in the North Pacific Region).

[12] From 1996 to 2002, there was a congressional moratorium on the establishment of new IFQ programs. There are no catch share programs in the Caribbean.
[13] In 2007, Congress reauthorized the Magnuson-Stevens Act, Section 303A with provisions for limited access privilege programs.
[14] See https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares.

Table 3. Economic Performance Indicators for U.S. Federal Catch Share Programs (2019 $)[15]

Region	Program	ACL Exceeded		Number of Active Vessels		Total Revenue from Catch Share Species		Revenue per Active Vessel	
		Baseline	2019	Baseline	2019	Baseline	2019	Baseline	2019
North Pacific	Alaska American Fisheries Act Pollock Cooperative	Y	N	147	97	268,918,277	390,825,736	1,829,376	4,029,131
	Alaska Halibut IFQ	Y	N	3432	806	99,441,120	82,414,361	28,975	102,251
	Alaska Sablefish IFQ	Y	N	1139	280	99,861,274	72,146,471	87,676	739,410
	Central Gulf of Alaska Rockfish	Y	N	42	48	7,124,178	21,941,509	169,623	457,115
	Non-Pollock Trawl Catcher/ Processor Groundfish Cooperatives (Amendment 80)	N	Y	22	20	98,398,607	115,639,185	4,472,664	5,781,959
	BSAI Crab Rationalization	Y	Y	264	66	189,480,402	201,470,668	717,729	3,052,586
Pacific	West Coast Sablefish Permit Stacking Program	NA	N	135	83	7,259,424	6,843,602	53,774	82,453
	West Coast Trawl Rationalization Whiting and Non-whiting Directed	NA	N	124	92	43,495,757	59,819,898	350,772	650,216
New England	Atlantic Sea Scallop General Category IFQ	N	N	271	120	30,853,462	28,313,529	113,850	235,946
	Northeast Multispecies Sectors	Y	N	417	157	93,737,137	47,603,150	224,789	303,205
Mid-Atlantic	Mid-Atlantic Golden Tilefish IFQ	NA	N	14	8	5,120,526	5,897,109	365,752	737,139
	Mid-Atlantic Ocean Quahog ITQ	N	N	67	15	31,891,805	21,917,295	475,997	1,461,153
	Mid-Atlantic Surfclam ITQ	N	N	137	43	42,973,537	26,557,610	313,675	617,619
Atlantic Highly Migratory Species	Atlantic Highly Migratory Species Individual Bluefin Tuna Quota	NA	N	116	67	1,058,904	650,343	9,128	9,707
Gulf of Mexico	Gulf of Mexico Grouper-Tilefish IFQ	Y	N	630	428	24,768,272	21,488,123	39,315	50,206
	Gulf of Mexico Red Snapper IFQ	Y	N	482	431	15,175,473	33,086,668	31,484	76,767

[15] The South Atlantic Wreckfish ITQ program and Aleutian Island Pollock Fishery are not included due to confidentiality restrictions. The Western Alaska CDQ program was excluded because CDQs are fundamentally different from the other programs. In addition, note that some programs did not have a catch quota prior to the catch share program. For these programs, "-" indicates that the question of whether the ACL was exceeded is not applicable. BSAI Crab data for 2019/2020.

Other Market-Based Management Tools

Vessel or permit buyback programs are another market-based tool used by fishery managers. Under these programs, the government purchases fishing vessels or permits. Doing so permanently decreases the number of participants in the fishery and eases fishing-related pressure on marine resources. Buyback programs include BSAI Crab, Pacific Coast Groundfish, Longline Catcher Processor Non-Pollock Groundfish, Southeast Alaska Purse Seine Salmon, and American Fisheries Act Pollock.

Limited Access Privilege 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. LAPPs have been implemented in almost all federally managed commercial fisheries and in every region except the Caribbean.

Ecolabels are market-based tools offered by third-party entities. An ecolabeling program entitles a fishery product to bear a distinctive logo or statement that certifies the fishery resource was harvested in compliance with specified conservation and sustainability standards. It allows the buyer to potentially influence the sustainable harvest of fishery resources through the purchase of such ecolabeled seafood products at a price premium. The Marine Stewardship Council (MSC) has one of the most recognizable ecolabeling programs in the world. In 2019, nearly 300 fisheries worldwide met MSC sustainability standards, 22 of which are U.S. fisheries (see Table 4). Fisheries obtaining MSC certification for the first time in 2019 include the Omega Protein Corporation U.S. Atlantic menhaden purse seine fishery, the Prestige Oysters Texas and Louisiana private oyster fishery, the U.S. Gulf of Mexico menhaden purse seine fishery, and the Aleutian Islands and Bering Sea Atka mackerel, Pacific Ocean perch, and northern rockfish and Gulf of Alaska Pacific Ocean perch, northern rockfish, and dusky rockfish.

Table 4. U.S. Fisheries with MSC Certification[16]

Region	Fishery	Certification
North Pacific	Alaska salmon	2000
	Alaska pollock – Bering Sea and Aleutian Islands and the Gulf of Alaska	2005
	Alaska North Pacific halibut and sablefish	2006
	Alaska flatfish – Bering Sea and Aleutian Islands and the Gulf of Alaska	2010
	Alaska Pacific cod – Bering Sea and Aleutian Islands and the Gulf of Alaska	2010
	Annette Islands Reserve salmon	2011
	Aleutian Islands and Bering Sea Atka mackerel, Pacific Ocean perch, and northern rockfish and Gulf of Alaska Pacific Ocean perch, northern rockfish, and dusky rockfish	2019
Pacific	Oregon and Washington pink shrimp	2007
	Pacific hake mid-water trawl	2010
	US West Coast limited entry groundfish trawl	2014
	American Albacore Fishing Association and the Western Fishboat Owners Association North Pacific albacore tuna	2018
Northeast	Atlantic spiny dogfish, winter skate and little skate	2012
	Atlantic sea scallop	2013
	North Atlantic swordfish, yellowfin, and albacore tuna	2013
	Acadian redfish, pollock and haddock otter trawl	2016
	Atlantic surfclam and ocean quahog	2016
	Gulf of Maine lobster fishery	2016
	Gulf of Maine and Georges Bank haddock, pollock, and redfish trawl	2018
	Northeast squid bottom trawl fishery	2018
	Omega Protein Corporation U.S. Atlantic menhaden purse seine	2019
Southeast	Prestige Oysters Texas and Louisiana private oyster fishery	2019
	U.S. Gulf of Mexico menhaden purse seine	2019

[16] Marine Stewardship Council Certifications accessed February 17, 2021. For more information about these fisheries and the Marine Stewardship Council certification process, see https://www.msc.org/.

COMMERCIAL FISHERIES — NATIONAL OVERVIEW

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key U.S. Commercial Species

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

Regional Highlights

At the national level, this report includes landings revenue, landings, and prices for 10 key species or species groups, which were selected so that each region has at least one species in the top 10. Results show that commercial fishermen in Alaska caught the most salmon (490.2 million pounds) and earned $449.5 million for their catch in 2020. Hawai'i fishermen caught the most tuna (20.6 million pounds) and earned the highest revenue for this catch $67.9 million. Maine fishermen contributed the most to American lobster landings (97.9 million pounds) and earned $412.6 million for their catch in 2020. In Massachusetts, sea scallopers harvested 31.7 million pounds of scallop and earned $314 million for their catch. More blue crabs were caught in Louisiana (34.3 million pounds) than in any other state, earning more than $54.8 million. Louisiana accounted for the greatest quantity of menhaden landed in 2020, with fishermen landing 612 million pounds worth $66.4 million in dockside revenue. Sea scallop garnered the highest average ex-vessel price per pound ($9.96) among the key species and species groups in 2020, with state-specific prices ranging from $8.91 in Rhode Island to $11.38 in New Hampshire.

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.[17]

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[18]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

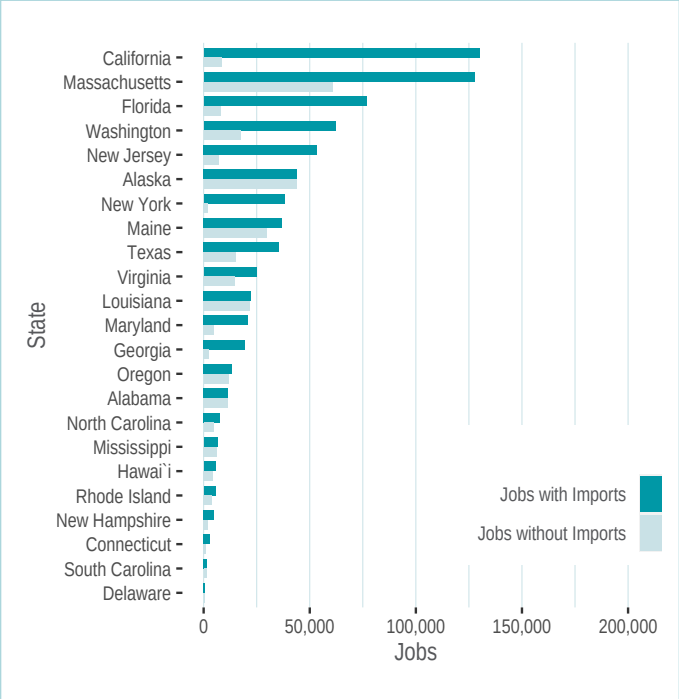
In 2020, the seafood industry supported 1.1 million full- and part-time jobs and generated $154.7 billion in sales, $39.9 billion in income, and $62.5 billion in value-added impacts nationwide (Table 5). Importers generated the

[17] Summary data is available online in the FEUS webtool. [Available at: https://www.fisheries.noaa.gov/data-tools/fisheries-economics-united-states-interactive-tool.]
[18] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]

largest sales impacts ($80.4 billion) and value-added impacts ($24.5 billion). Retail generated the largest employment impacts (560,637 jobs) and income impacts ($14.2 billion).

Table 5. U.S. Seafood Industry Economic Impacts Trends (number of jobs; millions of dollars)

Category	2012	2013	2014	2015	2016	2017	2018	2019	2020
Jobs	1,270,141	1,350,627	1,394,833	1,179,848	1,190,092	1,246,366	1,225,826	1,233,915	1,105,610
Sales	$140,661	$142,249	$153,341	$144,194	$144,293	$170,314	$165,063	$165,482	$154,737
Income	$38,722	$39,747	$41,956	$39,744	$39,905	$44,595	$42,899	$43,376	$39,856
Value Added	$59,017	$60,309	$64,071	$60,566	$60,768	$69,177	$67,058	$67,613	$62,478
Total Revenue	$5,099	$5,547	$5,473	$5,184	$5,337	$5,409	$5,413	$5,598	$4,780



Graph 1. Jobs supported by the U.S. Seafood Industry (Jobs with and without Imports), 2020

Table 6. Sales, Income and Value-Added Impacts Generated by the U.S. Seafood Industry, 2020 (thousands of dollars)

State	Sales	Income	Added Value
U.S. Total	$154,737,099	$39,855,979	$62,477,813
California	$26,242,840	$5,552,074	$9,273,696
Florida	$18,501,239	$3,451,325	$6,179,998
Massachusetts	$14,764,183	$3,607,684	$5,624,189
New Jersey	$11,170,215	$2,312,149	$3,886,532
Washington	$9,718,293	$2,492,442	$3,846,751
New York	$5,995,855	$1,240,690	$2,082,226
Texas	$4,900,200	$1,201,802	$1,897,752
Alaska	$3,661,146	$1,628,171	$2,019,764
Maryland	$3,437,255	$779,413	$1,252,027
Georgia	$3,246,416	$716,545	$1,181,394
Virginia	$3,234,096	$832,729	$1,278,891
Maine	$3,115,055	$900,167	$1,352,075
Louisiana	$1,353,405	$508,582	$687,828
Oregon	$1,139,196	$386,127	$546,785
North Carolina	$817,990	$222,610	$335,853
New Hampshire	$700,257	$168,569	$266,074
Rhode Island	$621,476	$168,298	$256,873
Connecticut	$566,666	$120,480	$199,767
Alabama	$560,378	$222,965	$291,716
Hawai`i	$557,016	$166,427	$245,482
Mississippi	$346,873	$136,974	$177,125
South Carolina	$139,133	$46,090	$65,209
Delaware	$135,712	$25,703	$44,251

Landings Revenue

Landings revenue in the United States totaled $4.8 billion in 2020 (Table 7). This represented a 13% decrease in nominal value from 2011 levels (a 25% decrease in real terms after adjusting for inflation) and, year-over-year, a 15% decrease from 2019 (Graph 2). Finfish landings revenue accounted for 33% of all landings revenue. American lobster had the highest landings revenue in 2020.

Table 7. Commercial Fisheries Landings Revenue by Region, 2020 (thousands of dollars)

Region	Revenue
U.S. Total	$4,780,051
North Pacific	$1,481,049
New England	$1,204,688
Gulf of Mexico	$732,461
Pacific	$582,096
Mid-Atlantic	$512,603
South Atlantic	$183,299
Western Pacific (Hawai'i)	$83,855

From 2011 to 2020, menhaden (37%, 19% in real terms), American lobster (25%, 8% in real terms), and blue crab (5%, -9% in real terms) had the largest increases, while sablefish (-70%, -74% in real terms), Pacific halibut (-67%, -71% in real terms), and Pacific salmon (-28%, -38% in real terms) had the largest decreases. From 2019 to 2020, menhaden (33%) and Alaska pollock (8%) had the largest increases, while sablefish (-38%), Pacific salmon (-32%), and Pacific halibut (-29%) had the largest decreases.

Commercial Revenue: Largest Increases

From 2011:
- Menhaden (37%, 19% in real terms)
- American lobster (25%, 8% in real terms)
- Blue crab (5%, -9% in real terms)

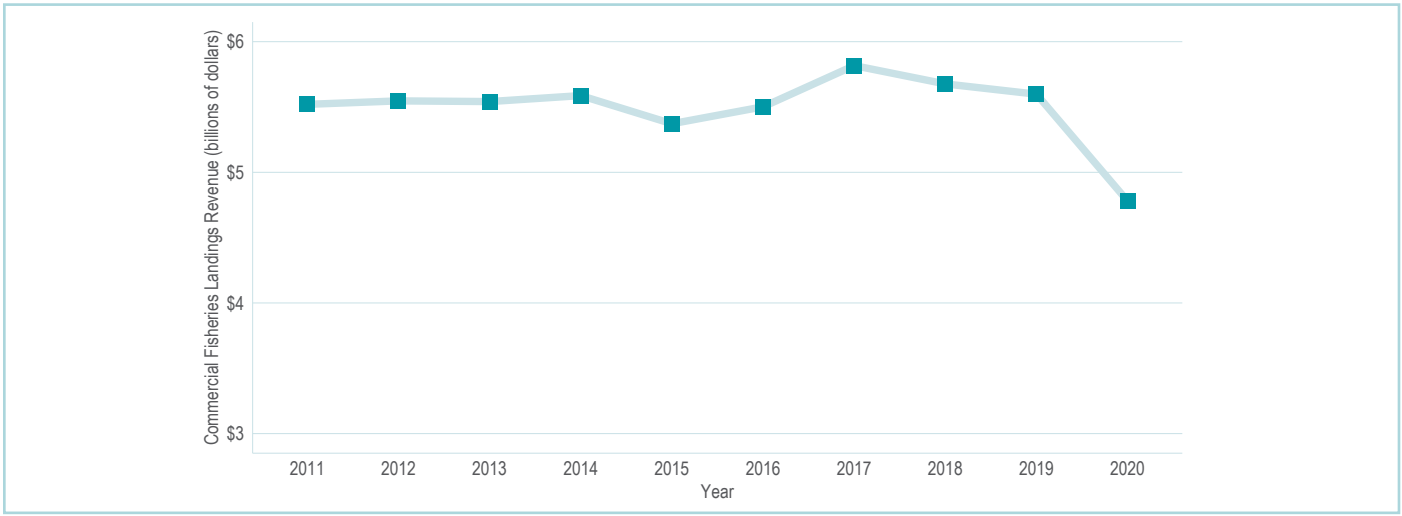
From 2019:
- Menhaden (33%)
- Alaska pollock (8%)

Commercial Revenue: Largest Decreases

From 2011:
- Sablefish (-70%, -74% in real terms)
- Pacific halibut (-67%, -71% in real terms)
- Pacific salmon (-28%, -38% in real terms)

From 2019:
- Sablefish (-38%)
- Pacific salmon (-32%)
- Pacific halibut (-29%)

North Pacific earned the greatest share of landings revenue in 2020 ($1.5 billion), contributing 31% of the national total (Table 7). Alaska ($614.8 million, or 19% of U.S. shellfish revenue) and Maine ($508.2 million, or 16% of U.S. shellfish revenue) earned the most ex-vessel revenue from shellfish landings.



Graph 2. U.S. Commercial Fisheries Landings Revenue, 2011-2020 (nominal values, billions of dollars)

Landings

Landings volume in the United States totaled 8.4 billion in 2020 (Table 8). This represented a 15% decrease from 2011 levels and, year-over-year, a 10% decrease from 2019 (Graph 3). Finfish landings revenue accounted for 48% of all landed weight. Alaska pollock had the highest landings volume in 2020.

From 2011 to 2020, Alaska pollock (15%) had the largest increase, while Pacific halibut (-47%), blue crab (-42%), and Pacific salmon (-36%) had the largest decreases. From 2019 to 2020, shrimp (1%) and sablefish (1%) had the largest increases, while Pacific salmon (-40%), blue crab (-21%), and sea scallop (-19%) had the largest decreases.

Commercial Landings: Largest Increases

From 2011:
- Alaska pollock (15%)

From 2019:
- Shrimp (1%)
- Sablefish (1%)

Commercial Landings: Largest Decreases

From 2011:
- Pacific halibut (-47%)
- Blue crab (-42%)
- Pacific salmon (-36%)

From 2019:
- Pacific salmon (-40%)
- Blue crab (-21%)
- Sea scallop (-19%)

The North Pacific Region (Alaska) had the greatest share of landings in 2020 (5.1 billion pounds), contributing 60% of the national total (Table 8). By state, Alaska (3.3 billion pounds, or 75% of U.S. shellfish landings) and Maine (139.4 million pounds, or 3% of U.S. shellfish landings) had the greatest shellfish landings.

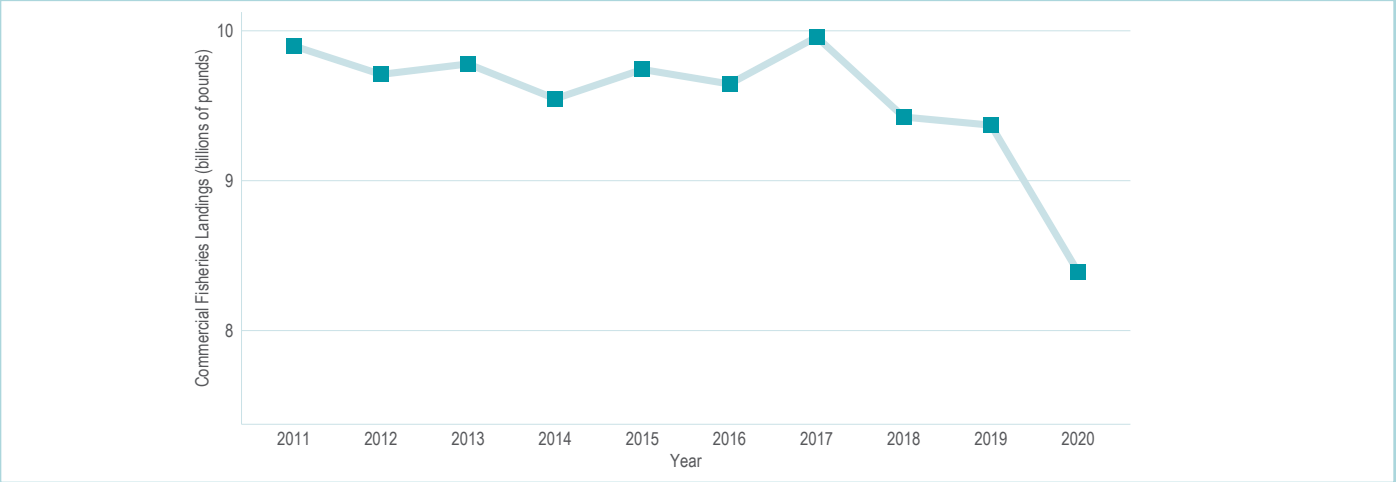
Table 8. Commercial Fisheries Landings by Region, 2020 (thousands of pounds)

Region	Landings Volume
U.S. Total	8,391,703
North Pacific	5,061,976
Gulf of Mexico	1,208,955
Pacific	942,795
Mid-Atlantic	559,362
New England	485,097
South Atlantic	106,255
Western Pacific (Hawai`i)	27,264

Prices

Of all key species or species groups, sea scallop ($9.94 per pound) had the highest national ex-vessel price. Alaska pollock ($0.13 per pound) had the lowest ex-vessel price of all key species nationally.

From 2011 to 2020, menhaden (98%, 71% in real terms), blue crab (82%, 57% in real terms), and American lobster (31%, 13% in real terms) had the largest increases, while sablefish (-69%, -73% in real terms), Pacific halibut (-37%, -46% in real terms), and tunas (-10%, -22% in real terms) had the largest decreases. From 2019 to 2020, menhaden (54%), blue crab (18%), and Pacific salmon (13%) had the largest increases, while sablefish (-39%), Pacific halibut (-22%), and tunas (-15%) had the largest decreases.



Graph 3. U.S. Commercial Fisheries Landings, 2011-2020 (billions of pounds)

RECREATIONAL FISHERIES — NATIONAL OVERVIEW

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. The key species/species groups included in this report were chosen because they are caught in large numbers, highly prized by recreational anglers, associated with federal fishery management plans; or a combination of one or more of these factors. The recreational fisheries section reports on angler participation, trips, economic impacts and expenditures, and catch of key species/species groups.[19,20]

Key U.S. Recreational Species[21]

- Atlantic croaker and spot (Atlantic regions)
- Dolphinfish (Western Pacific and Atlantic)
- Pacific halibut (North Pacific)
- Pacific salmon (Pacific and North Pacific)[22]
- Rockfishes and scorpionfishes (Pacific and North Pacific)[23]
- Seatrout (Atlantic regions)[24]
- Striped bass (Atlantic regions)
- Summer flounder (Atlantic regions)
- Tunas (Atlantic regions)[25]
- Tunas (Pacific and Western Pacific regions)[26]

The economic contributions for both trip and durable expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips) and for durable expenditures (based on 2019 survey data on average durable expenditures and 2018 participants).

Regional Highlights

At the national level, the report includes fishing trips, participation, and the harvest and release numbers of 10 key species or species groups, which were selected so that each region has at least one species in the top 10. Results show that in 2020, recreational anglers in West Florida took the most trips (42.2 million trips) and spent the most on trips ($2.1 billion). East Florida spent the second most on trips ($1.3 billion).[27]

Virginia caught the most Atlantic croaker and spot (32.9 million fish), West Florida caught the most seatrouts (29.9 million fish), Maryland caught the most striped bass (7.8 million fish), and New Jersey caught the most summer flounder (19.1 million fish). Alaska caught the most Pacific halibut (390,470 fish) and Pacific salmon (607,429 fish).

Economic Impacts and Expenditures

The economic contributions or impacts of recreational fishing activities in the United States is based on spending by recreational anglers.[28] Total annual trip expenditures were estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. Total annual durable expenditures were estimated by multiplying mean durable expenditures by the estimated annual number of adult participants in the United States and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level. State level trip expenditures and impacts will continue to be provided.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. It includes both the direct sales made by the angler and sales made between businesses and households resulting from that original

[19] Atlantic and Gulf recreational catch and effort estimates are based upon the MRIP estimates released in 2018.
[20] See Data Sources section for more information about where each region or state's data comes from.
[21] Atlantic Regions refer to those states within New England, Mid-Atlantic, South Atlantic, and the Gulf of Mexico.
[22] Chinook salmon, chum salmon, coho salmon, cutthroat trout, and pink salmon.
[23] Bank rockfish, black and yellow rockfish, black rockfish, blue rockfish, bocaccio, bronzespotted rockfish, brown rockfish, calico rockfish, California scorpionfish, canary rockfish, chilipepper, china rockfish, copper rockfish, cowcod, darkblotched rockfish, deacon rockfish, deacon/blue rockfish unknown, flag rockfish, freckled rockfish, gopher rockfish, grass rockfish, greenblotched rockfish, greenspotted rockfish, greenstriped rockfish, halfbanded rockfish, honeycomb rockfish, kelp rockfish, mexican rockfish, olive rockfish, Pacific ocean perch, pinkrose rockfish, quillback rockfish, redbanded rockfish, redstripe rockfish, rockfish genus, rockfish species, rosethorn rockfish, rosy rockfish, scorpionfish family, shortspine thornyhead, silvergray rockfish, speckled rockfish, squarespot rockfish, starry rockfish, stripetail rockfish, swordspine rockfish, tiger rockfish, treefish, vermilion rockfish, widow rockfish, yelloweye rockfish, yellowmouth rockfish, and yellowtail rockfish.
[24] Sand seatrout, seatrout genus, silver seatrout, spotted seatrout, and weakfish.
[25] Albacore, bigeye tuna, blackfin tuna, bluefin tuna, tuna genus, and yellowfin tuna.
[26] Albacore, bigeye tuna, bluefin tuna, and yellowfin tuna.
[27] The COVID-19 pandemic had a number of effects on recreational fishing data collection due to closures and restrictions at fishing locations from March through May in a number of states. In some cases, this resulted in data being unavailable for those months on effort and/or catch.
[28] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

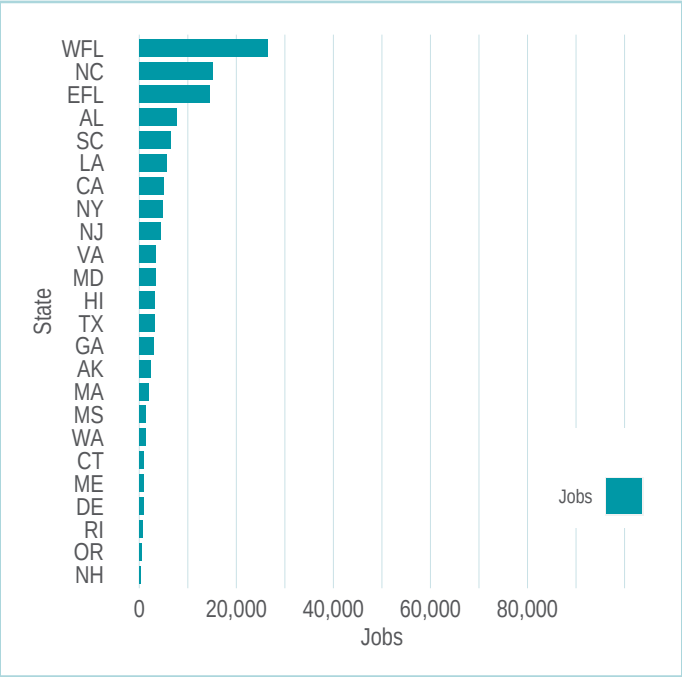
Economic impacts from recreational fishing activities supported 594,734 jobs across the United States in 2020 (Table 9). Recreational fishing also generated about $98 billion in sales impacts, $32.9 billion in income impacts, and $55 billion in value-added impacts.

Impacts from durable equipment expenditures (e.g., rods and reels, fishing-related equipment, boats, and vehicles) accounted for 74% of total job impacts, 76% of sales impacts, 77% of income impacts, and 75% of value added impacts. Of the three fishing trip modes, shore-boat-based fishing trips had the greatest economic impact, accounting for 13% of employment, 12% of sales, 11% of income impacts, and 12% of value-added impacts.

Table 9. Recreational Economic Impacts Trends for the United States (millions of dollars)

Category	2018	2019	2020
#Jobs	469,848	553,499	594,734
Sales	$72,462	$89,340	$98,028
Income	$24,268	$30,005	$32,935
Value Added	$40,733	$50,122	$54,962

The greatest employment impacts (Graph 4) and sales impacts (Table 10) from saltwater recreational fishing were both generated in West Florida, followed by North Carolina and East Florida.



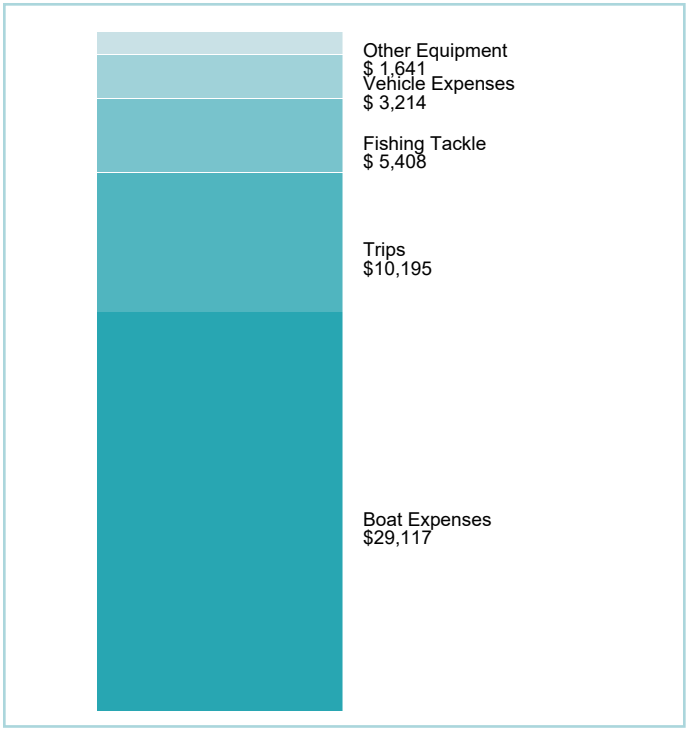
Graph 4. Jobs supported by the U.S. Recreational Fishing Industry, 2020

Table 10. Sales, Income, and Value-Added Impacts Generated by the Recreational Fishing Industry, 2020 (millions of dollars)

State	Jobs	Sales	Income	Value Added
U.S Total	594,734	$98,028	$32,935	$54,962
West Florida	26,493	$2,911	$989	$1,843
North Carolina	15,214	$1,582	$554	$956
East Florida	14,557	$1,532	$520	$1,026
Alabama	7,681	$767	$224	$452
South Carolina	6,560	$605	$200	$382
Louisiana	5,607	$662	$210	$383
California	5,083	$718	$176	$302
New York	4,872	$429	$189	$328
New Jersey	4,455	$724	$296	$469
Virginia	3,449	$390	$143	$254
Maryland	3,393	$335	$124	$215
Hawai`i	3,292	$465	$144	$258
Texas	3,257	$434	$139	$263
Georgia	2,922	$256	$84	$161
Alaska	2,342	$287	$95	$167
Massachusetts	1,951	$244	$120	$170
Mississippi	1,317	$117	$39	$73
Washington	1,255	$181	$60	$108
Connecticut	956	$118	$50	$92
Maine	928	$103	$37	$61
Delaware	903	$110	$36	$72
Rhode Island	706	$76	$38	$55
Oregon	569	$59	$23	$36
New Hampshire	370	$38	$16	$26

In 2020, expenditures for fishing trips and durable goods equipment in the United States totaled $49.6 billion.

Approximately $10.2 billion of these expenditures were related to trip expenses. Total trip expenditures were composed of expenses on trips in the shore (46.9%), private boat (41.9%), and for-hire (11.2%) sectors. Durable goods expenditures totaled $39.4 billion in 2020, with the largest portion coming from Boat Expenses ($29.1 billion) (Graph 5).



Graph 5. Recreational Fishing Trip and Durable Goods Expenditures, 2020 (billions of dollars)

Fishing Trips

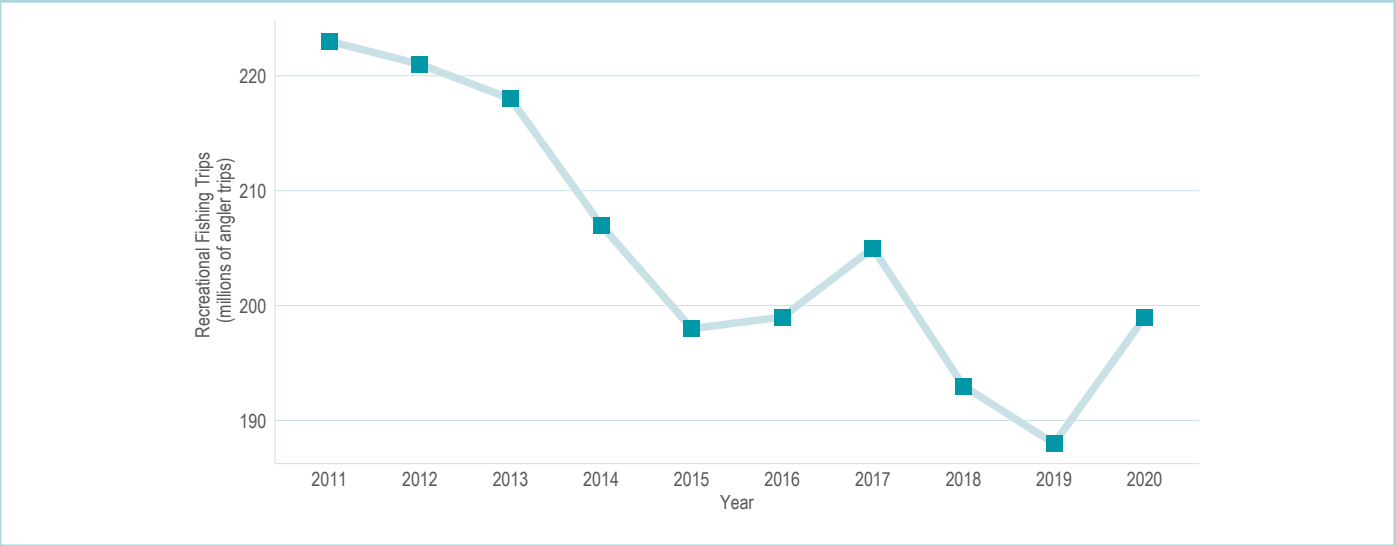
Nationwide, anglers took approximately 199.2 million saltwater fishing trips around the country (Table 11). This number represented an 11% decrease from 2011 and a 6% increase from 2019 (Graph 6). Approximately 62% of fishing trips were taken via shore. West Florida anglers took the most fishing trips (42.2 million trips), followed by those in East Florida and North Carolina (Table 12).

Table 11. Recreational Fishing Trips by Region, 2020 (thousands of angler trips)

Region	Trips
U.S. Total	199,188
South Atlantic	70,459
Gulf of Mexico	56,821
Mid-Atlantic	49,115
New England	16,024
Western Pacific (Hawai'i)	3,902
Pacific	2,302
North Pacific	566

Table 12. Recreational Fishing Trips by State, 2020 (thousands of trips)

State	Trips
West Florida	42,198
East Florida	40,436
North Carolina	16,399
New Jersey	16,017
New York	14,841
South Carolina	8,734
Virginia	8,164
Maryland	7,974
Alabama	6,623
Massachusetts	5,950
Georgia	4,890
Mississippi	4,298
Connecticut	4,196
Hawai'i	3,902
Rhode Island	2,848
Louisiana	2,501
Delaware	2,118
Maine	2,110
California	1,611
Texas	1,201
New Hampshire	920
Washington	496
Oregon	195



Graph 6. Recreational Fishing Trips, 2011-2020 (millions of angler trips)

Harvest and Release Trends

In 2020, Atlantic croaker and spot (Atlantic regions) (86.8 million fish), seatrout (Atlantic regions) (59.5 million fish), and striped bass (Atlantic regions) (33.4 million fish) were most frequently caught by recreational fishermen in the United States. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, tunas (Pacific and Western Pacific regions) (99%), striped bass (Atlantic regions) (51%), and tunas (Atlantic regions) (40%) had the largest increases, while dolphinfish (Western Pacific and Atlantic) (-52%), seatrout (Atlantic regions) (-49%), and Pacific salmon (Pacific and North Pacific) (47%) had the largest decreases. From 2019 to 2020, tunas (Atlantic regions) (167%), Atlantic croaker and spot (Atlantic regions) (35%), and tunas (Pacific and Western Pacific regions) (10%) had the largest increases, while Pacific salmon (Pacific and North Pacific) (-41%), dolphinfish (Western Pacific and Atlantic) (-36%), and rockfishes and scorpionfishes (Pacific and North Pacific) (-28%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Tunas (Pacific and Western Pacific regions) (99%)
- Striped bass (Atlantic regions) (51%)
- Tunas (Atlantic regions) (40%)

From 2019:
- Tunas (Atlantic regions) (167%)
- Atlantic croaker and spot (Atlantic regions) (35%)
- Tunas (Pacific and Western Pacific regions) (10%)

Harvest and Release: Largest Decreases

From 2011:
- Dolphinfish (Western Pacific and Atlantic) (-52%)
- Seatrout (Atlantic regions) (-49%)
- Pacific salmon (Pacific and North Pacific) (-47%)

From 2019:
- Pacific salmon (Pacific and North Pacific) (-41%)
- Dolphinfish (Western Pacific and Atlantic) (-36%)
- Rockfishes and scorpionfishes (Pacific and North Pacific) (-28%)

MARINE ECONOMY — UNITED STATES

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The national marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[29]

The Commercial Fishing Location Quotient (CFLQ) measures the proportional size of this sector in a state's economy relative to the size of the commercial fishing sector in the national economy.[30] The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

In 2019, 8 million employer establishments operated throughout the entire United States (including marine and non-marine related establishments). These establishments employed 133 million workers and had a total annual payroll of $7.4 trillion. The nation's gross domestic product was approximately $21.4 trillion in 2019.

Seafood Sales and Processing[31]

Seafood Product Preparation and Packaging: In 2019, there were 560 employer firms in the seafood sales and processing sector (a 10% decrease from 2011). These establishments employed 31,026 workers (a 1% decrease from 2011) and had a total annual payroll of $1.6 billion (a 13% increase in real terms from 2011). The greatest number of establishments in this sector was in Alaska (98), followed by Washington (79) and California (39).

Retail Seafood Sales: In 2019, there were 1,959 employer firms in the seafood retail sector (a 1% decrease from 2011). These establishments employed 11,697 workers (a 17% increase from 2011) and had a total annual payroll of $336 million (a 32% increase in real terms from 2011). The greatest number of establishments in this sector was in New York (370), followed by Florida (170) and California (155).

Wholesale Seafood Sales: Nationally, there were 2,006 employer firms in the seafood wholesale sector (a 12% decrease from 2011). These establishments employed 23,377 workers (a 13% increase from 2011) and had a total annual payroll of $1.1 billion (a 17% increase in real terms from 2011). The greatest number of establishments in this sector was in California (325), followed by New York (258) and Florida (241).

Transportation Support and Marine Operations

Coastal and Great Lakes Freight Transportation: There were 544 employer firms in the coastal and Great Lakes freight transportation sector (a 1% decrease from 2011). These establishments employed 17,682 workers (a 5% decrease from 2011) and had a total annual payroll of $1.7 billion (a 7% increase in real terms from 2011). Alaska (89), Louisiana (75), and New York (71) had the greatest number of these employer establishments.

Deep Sea Freight Transportation: There were 286 employer firms in the deep sea freight transportation sector (a 24% decrease from 2011). These establishments employed 6,571 workers (a 37% decrease from 2011) and had a total annual payroll of $662 million Florida (55), California (42), and Texas (38) had the greatest number of these employer establishments.

Deep Sea Passenger Transportation: There were 68 employer firms in the deep sea passenger transportation sector (a 24% increase from 2011). These establishments employed 15,329 workers and had a total annual payroll of $1.4 billion Florida (41), Washington (5), and California (5) had the greatest number of these employer establishments.

[29] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).
[30] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.
[31] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently this information is not available from the Census Bureau for 2019.

Marinas: There were 3,760 employer firms classified as marinas (a 3% decrease from 2011). These establishments employed 29,332 workers (a 10% increase from 2011) and had a total annual payroll of $1.2 billion (a 10% increase in real terms from 2011). Florida (471), New York (416), and California (225) had the greatest number of these employer establishments.

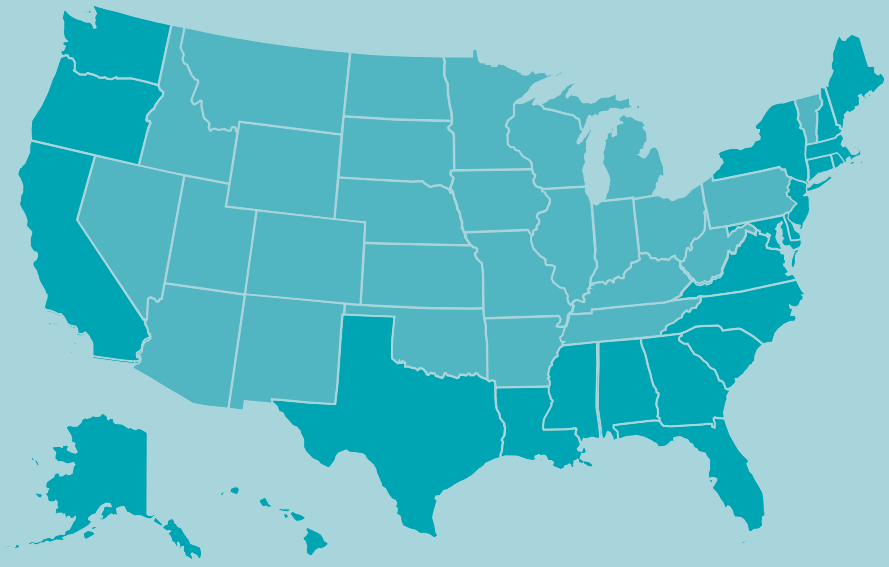
Marine Cargo Handling: There were 471 employer firms providing marine cargo handling services (a 14% decrease from 2011). These establishments employed 67,724 workers (a 14% increase from 2011) and had a total annual payroll of $4.9 billion (a 37% increase in real terms from 2011). Florida (62), Texas (60), and California (57) had the greatest number of these employer establishments.

Navigational Services to Shipping: There were 1,026 employer firms providing navigational services to the shipping sector (a 23% increase from 2011). These establishments employed 14,609 workers (a 9% increase from 2011) and had a total annual payroll of $1.2 billion (a 19% increase in real terms from 2011). Florida (222), Louisiana (161), and Texas (89) had the greatest number of these employer establishments.

Port and Harbor Operations: There were 350 employer firms in the port and harbor operations sector (a 37% increase from 2011). These establishments employed 12,532 workers (a 154% increase from 2011) and had a total annual payroll of $810.7 million (a 131% increase in real terms from 2011). Florida (50), Texas (31), and Louisiana (30) had the greatest number of these employer establishments.

Ship and Boat Building: There were 1,434 employer firms in the ship and boat building sector (a 4% decrease from 2011). These establishments employed 137,065 workers (a 7% increase from 2011) and had a total annual payroll of $8.5 billion (a 9% increase in real terms from 2011). Florida (275), Washington (125), and California (95) had the greatest number of these employer establishments.

Tables | National Overview



2020 Economic Impacts of the United States Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	1,105,610	154,737,099	39,855,979	62,477,813	588,226	47,024,106	17,187,707	24,392,098
Commercial Harvesters	138,342	12,606,997	4,166,649	6,493,412	138,342	12,606,997	4,166,649	6,493,412
Seafood Processors and Dealers	89,701	14,777,564	4,663,703	6,483,069	44,818	7,383,459	2,330,172	3,239,199
Importers	242,890	80,420,806	12,888,968	24,515,783	NA	NA	NA	NA
Seafood Wholesalers and Distributors	74,039	12,086,320	3,971,649	5,682,887	20,843	3,402,407	1,118,055	1,599,783
Retail	560,637	34,845,412	14,165,010	19,302,662	384,223	23,631,243	9,572,831	13,059,704

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	5,520	5,547	5,541	5,587	5,372	5,502	5,817	5,677	5,598	4,780
Finfish	2,202	2,119	2,144	1,945	1,810	1,783	2,186	1,979	1,962	1,593
Shellfish and Other	3,318	3,428	3,398	3,643	3,562	3,719	3,631	3,698	3,636	3,187
Key Species	-	-	-	-	-	-	-	-	-	-
Alaska pollock	402	453	406	400	509	417	457	451	388	420
American lobster	423	432	461	567	622	670	568	631	637	530
Blue crab	185	193	186	216	218	211	197	196	209	195
Menhaden	144	128	125	127	180	179	114	161	149	198
Pacific halibut	209	148	115	110	115	122	121	87	98	69
Pacific salmon	665	581	756	617	502	421	788	599	708	479
Sablefish	185	148	102	111	115	117	147	111	89	55
Sea scallop	581	559	467	424	440	488	510	532	570	486
Shrimp	527	505	583	692	487	510	544	510	487	456
Tunas	136	164	146	134	138	157	153	149	142	118

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	9,899	9,709	9,779	9,547	9,742	9,645	9,958	9,425	9,371	8,392
Finfish	5,586	5,380	5,391	4,997	5,257	5,030	5,310	4,703	4,880	4,014
Shellfish and Other	4,313	4,328	4,388	4,549	4,486	4,615	4,649	4,722	4,491	4,378
Key Species	-	-	-	-	-	-	-	-	-	-
Alaska pollock	2,811	2,872	3,003	3,146	3,263	3,355	3,389	3,364	3,353	3,230
American lobster	126	151	151	148	147	159	137	148	127	121
Blue crab	203	183	132	140	153	162	148	140	149	118
Menhaden	1,875	1,771	1,341	1,232	1,631	1,736	1,414	1,582	1,512	1,302
Pacific halibut	42	33	29	22	24	24	26	21	24	22
Pacific salmon	780	637	1,070	720	1,067	561	1,009	577	839	500
Sablefish	43	43	39	35	35	34	38	39	41	41
Sea scallop	59	57	41	34	36	41	52	58	61	49
Shrimp	319	313	291	327	333	292	299	308	275	279
Tunas	50	60	56	58	57	56	55	52	49	48

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alaska pollock	0.14	0.16	0.14	0.13	0.16	0.12	0.13	0.13	0.12	0.13
American lobster	3.35	2.86	3.06	3.83	4.23	4.20	4.14	4.27	5.00	4.38
Blue crab	0.91	1.05	1.41	1.54	1.42	1.31	1.34	1.41	1.40	1.66
Menhaden	0.08	0.07	0.09	0.10	0.11	0.10	0.08	0.10	0.10	0.15
Pacific halibut	4.96	4.47	3.90	4.94	4.85	5.03	4.73	4.05	3.99	3.11
Pacific salmon	0.85	0.91	0.71	0.86	0.47	0.75	0.78	1.04	0.84	0.96
Sablefish	4.29	3.44	2.58	3.13	3.27	3.48	3.90	2.86	2.19	1.34
Sea scallop	9.89	9.83	11.40	12.55	12.32	12.00	9.85	9.20	9.39	9.94
Shrimp	1.65	1.61	2.00	2.12	1.46	1.75	1.82	1.65	1.77	1.63
Tunas	2.73	2.75	2.62	2.29	2.41	2.81	2.81	2.87	2.89	2.45

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of the United States Recreational Fishing (thousands of dollars; number of jobs)

Fishing Mode	Jobs	Sales	Income	Value Added
Total United States Economic Impacts	594,734	98,027,892	32,934,672	54,961,642
Total Durable Expenditures	441,877	74,215,862	25,205,054	41,293,684
For-Hire	20,988	2,713,750	903,908	1,545,481
Private Boat	56,812	9,814,827	3,079,640	5,571,578
Shore	75,058	11,283,453	3,746,070	6,550,899

2020 Angler Trip Expenditures by Fishing Mode (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
10,195,328	1,144,194	4,269,351	4,781,783

2020 Durable Goods Expenditures by Equipment Category (thousands of dollars)

Total Durable Expenditures	Fishing Tackle	Other Equipment	Boat Expenses	Vehicle Expenses
39,379,476	5,407,931	1,640,878	29,116,794	3,213,873

2020 Combined Angler Trip and Durable Goods Expenditures (thousands of dollars)

Total Trip and Durable Expenditures	49,574,804

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	10,866	10,896	11,240	10,958	9,801	10,070	9,139	8,296	NA	NA
Coastal	9,446	9,461	9,821	9,585	8,483	8,744	7,892	7,107	NA	NA
Non-Coastal	1,420	1,436	1,419	1,373	1,319	1,326	1,247	1,190	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)[2,3]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	223,257	221,389	217,566	207,065	197,945	199,204	205,019	193,146	187,934	199,188
For-Hire	3,582	3,753	4,328	4,538	4,471	3,723	3,941	4,007	4,477	3,488
Private Boat	88,413	87,656	84,288	78,395	73,457	73,334	74,429	69,304	66,872	72,987
Shore	131,262	129,981	128,950	124,132	120,017	122,148	126,649	119,836	116,586	122,713

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker and spot (Atlantic regions)	H	43,579	42,052	53,573	56,015	35,387	29,207	37,944	24,824	23,788	34,637
	R	56,743	63,520	81,918	56,454	41,335	41,899	43,216	37,192	40,251	52,134
Dolphinfish (Western Pacific and Atlantic)	H	3,080	2,509	2,460	2,555	4,018	1,962	2,536	3,153	2,340	1,704
	R	1,356	496	3,372	1,338	1,952	341	839	883	987	428
Pacific halibut (North Pacific)	H	394	388	454	408	420	400	352	352	352	261
	R	311	324	324	251	271	244	199	184	185	130
Pacific salmon (Pacific and North Pacific)	H	1,082	800	1,414	1,354	1,452	636	984	706	935	528
	R	700	509	858	606	870	412	666	519	668	425
Rockfishes and scorpionfishes (Pacific and North Pacific)	H	3,072	3,635	4,135	3,727	4,147	3,811	3,874	3,786	4,418	3,035
	R	731	807	1,046	847	972	931	1,052	1,073	1,084	946
Seatrout (Atlantic regions)	H	43,188	45,462	36,471	13,337	14,721	19,483	21,766	15,291	14,718	13,793
	R	72,817	78,095	64,490	38,680	41,357	56,323	58,562	52,533	44,566	45,736
Striped bass (Atlantic regions)	H	5,049	4,077	5,217	4,055	3,135	3,526	3,011	2,456	2,201	1,793
	R	17,032	21,049	26,985	24,521	25,991	34,183	41,734	33,273	29,587	31,613
Summer flounder (Atlantic regions)	H	4,366	5,758	6,625	5,373	4,051	4,306	3,237	2,431	2,451	3,557
	R	51,722	38,969	38,362	39,214	30,141	26,951	24,911	21,141	28,363	29,767
Tunas (Atlantic regions)	H	302	386	383	177	198	266	297	328	194	466
	R	116	55	26	52	22	71	58	82	24	117
Tunas (Pacific and Western Pacific regions)	H	370	681	730	872	824	457	659	621	739	767
	R	98	30	37	213	147	122	263	173	113	166

[1] All anglers reported in this table are U.S. residents. NA = Indicates Not Applicable; no participation values are available after 2018.
[2] Effort for 2014-2019 in Louisiana is estimated using data from a state creel survey and does not capture shore-based effort separately from private boat effort.
[3] Hawai'i trip estimates are not available for the for-hire mode. Oregon, Texas, and Washington trip estimates are not available for the shore mode.
[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

2019 United States Economy[1]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	8.0	133	7.4	11.4	21.4	1

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)[2]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	1,757	1,766	1,812	1,947	2,108	2,208	2,242	2,289	NA
	Receipts	110,745	115,167	128,927	146,626	163,625	176,593	175,735	188,774	NA
Seafood sales, retail	Firms	2,514	2,657	2,497	2,557	2,471	2,392	2,428	2,373	NA
	Receipts	212,679	217,702	205,555	203,459	206,676	207,428	214,481	216,318	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	620	589	604	640	618	586	551	555	560
	Employees	31,261	30,988	31,390	32,180	30,708	30,554	31,801	30,913	31,026
	Payroll	1,200,263	1,196,207	1,228,826	1,311,910	1,354,572	1,380,087	1,458,900	1,514,150	1,554,431
Seafood Sales, Wholesale	Establishments	2,287	1,954	2,098	2,100	2,132	2,176	1,998	1,998	2,006
	Employees	20,622	20,030	20,367	21,155	22,060	22,273	21,914	22,668	23,377
	Payroll	848,454	867,179	884,645	910,527	999,264	1,036,051	1,039,198	1,089,778	1,138,179
Seafood sales, retail	Establishments	1,972	1,957	1,995	2,015	2,059	2,067	1,960	1,967	1,959
	Employees	10,006	10,293	10,631	11,037	11,443	12,114	10,757	11,253	11,697
	Payroll	222,508	237,619	253,490	271,732	292,726	312,224	279,757	314,173	336,049

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	1,497	1,560	1,514	1,524	1,541	1,508	1,463	1,475	1,434
	Employees	127,522	136,365	135,287	138,687	143,287	140,179	137,300	137,486	137,065
	Payroll	6,845,322	7,543,402	7,556,373	7,882,846	8,030,983	7,951,338	7,914,193	8,439,466	8,544,280
Deep Sea Freight Transportation	Establishments	378	375	305	332	350	313	276	283	286
	Employees	10,362	12,375	8,704	8,646	8,014	7,009	6,515	6,724	6,571
	Payroll	921,990	1,073,529	703,003	683,281	671,624	638,900	654,461	677,031	662,012
Deep Sea Passenger Transportation	Establishments	55	58	62	56	61	62	69	65	68
	Employees	ds	ds	ds	ds	15,157	14,596	15,128	16,261	15,329
	Payroll	ds	ds	ds	ds	1,246,384	1,155,308	1,299,990	1,314,821	1,374,820
Coastal and Great Lakes Freight Transportation	Establishments	549	496	497	598	593	603	581	553	544
	Employees	18,590	19,099	18,659	20,884	19,983	19,004	17,799	16,973	17,682
	Payroll	1,400,267	1,467,709	1,512,053	1,835,024	1,746,612	1,677,305	1,600,861	1,645,742	1,720,128
Port and Harbor Operations	Establishments	255	525	383	351	337	332	335	354	350
	Employees	4,933	25,396	7,000	6,769	7,855	8,003	9,005	11,119	12,532
	Payroll	306,882	1,345,857	420,664	399,502	434,209	424,370	503,197	733,536	810,724
Marine Cargo Handling	Establishments	545	343	458	482	492	492	480	464	471
	Employees	59,517	43,824	66,301	69,830	66,414	62,680	58,663	62,729	67,724
	Payroll	3,159,964	2,601,146	4,086,182	4,406,525	4,334,958	4,392,350	4,514,115	4,799,924	4,946,930
Navigational Services to Shipping	Establishments	836	850	847	881	889	877	1,032	1,020	1,026
	Employees	13,441	12,532	12,485	12,148	11,864	12,457	13,635	15,034	14,609
	Payroll	893,889	838,959	929,419	907,763	923,303	920,450	1,056,307	1,198,227	1,219,033
Marinas	Establishments	3,896	3,782	3,844	3,811	3,881	3,826	3,669	3,732	3,760
	Employees	26,557	25,764	26,373	26,709	26,999	27,471	26,825	28,994	29,332
	Payroll	953,497	913,140	951,123	995,248	1,036,253	1,081,496	1,050,970	1,177,759	1,202,384

[1] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[3] ds = Data are suppressed.

North Pacific Region

- Alaska



Offloading commercial halibut.
Photo: North Pacific Fishery Management Council

MANAGEMENT CONTEXT

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

North Pacific Region FMPs

- Bering Sea/ Aleutian Islands (BSAI) groundfish
- Gulf of Alaska (GOA) groundfish
- BSAI king and tanner crabs
- Alaska scallop
- Salmon in the EEZ
- Arctic

Of the stocks or stock complexes covered in these FMPs, only the blue king crab Pribilof Islands stock and St. Matthew Island stock were listed as overfished as of December 2020. No stocks were listed as subject to overfishing.

Catch Share Programs

The North Pacific Region has seven catch share programs, more than any other region. These are the: 1) Western Alaska Community Development Quota (CDQ) Program; 2) Alaska Halibut and Sablefish IFQ Program; 3) American Fisheries Act (AFA) Pollock Cooperatives; 4) Bering Sea and Aleutian Islands (BSAI) King and Tanner Crab Rationalization Program; 5) Aleutian Islands Pollock Fishery; 6) Bering Sea and Aleutian Islands (BSAI) Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80); and 7) Central Gulf of Alaska (GOA) Rockfish Program (pilot implemented in 2007). Excluding the Western Alaska CDQ and Aleutian Islands Pollock Fishery programs, the landings revenues for these programs totaled $884 million in 2019, exceeding the total landings revenue of any other state and accounting for half of Alaska's landings revenue in 2019. The following are descriptions of these catch share programs and some key performance indicators.

Western Alaska Community Development Quota (CDQ) Program: The program was originally implemented in 1992 as part of a restructuring of the 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 program has the following goals: 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.

Alaska Halibut and Sablefish IFQ Program: The program was implemented in 1995. The primary objectives of this IFQ program include the following: 1) Eliminate gear conflicts; 2) Address safety concerns; and 3) Improve product quality. The 2019 key performance indicators of the halibut program show that relative to the baseline period, quota, landings, the number of active vessels , and inflation-adjusted landings revenue decreased, while inflation-adjusted revenue per active vessel increased. The 2019 key performance indicators of the sablefish program show that relative to the baseline period, quota, landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while inflation-adjusted revenue per vessel increased.

American Fisheries Act (AFA) Pollock Cooperatives: The program was established in 1999 and 2000 with the goals of settling allocation disputes between inshore (catcher vessels), offshore (catcher/processors), and mothership sectors, and ending the race for fish. The 2019 key performance indicators of the program show that relative to the baseline period, the number of active vessels decreased, while quota, landings, inflation-adjusted landings revenue, and inflation-adjusted revenue per active vessel increased.

Bering Sea and Aleutian Islands (BSAI) King and Tanner Crab Rationalization Program: The program was implemented for the 2005–2006 crab fishing season to address the race to harvest; high bycatch and discard mortality; and product quality issues. The program also aims to balance the interests of those who depend on crab fisheries. This program includes share allocations to harvesters and processors. Processor quota was incorporated to preserve the viability of processing facilities in dependent communities and, particularly, to

maintain competitive conditions in ex-vessel markets. The CDQ and Adak Community allocations, regional landings and processing requirements, and several community protection measures serve to protect community interests. The 2019/2020 key performance indicators of the program show that relative to the baseline period, quota, landings, and the number of active vessels decreased, while inflation-adjusted landings revenue and revenue per active vessel increased.

Aleutian Islands Pollock Fishery: In 2005, Amendment 82 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area established a framework for the management of the Aleutian Islands subarea directed pollock fishery. The FMP Amendment was proposed by the North Pacific Fishery Management Council to implement a provision of the Consolidated Appropriations Act of 2004 (Public Law 108–199, Sec. 803), which requires that the Aleutian Islands directed pollock fishery be allocated to the Aleut Corporation for the purpose of economic development in Adak, Alaska.

BSAI Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80): The program, commonly referred to as the Amendment 80 Program, was implemented in 2008 to create economic incentives that would improve retention of all fish caught. The cooperatives also seek to reduce bycatch by commercial fishing vessels using trawl gear in the non-pollock groundfish fisheries. The 2019 key performance indicators of the program show that relative to the baseline period, quota and the number of active vessels decreasedwhile landings, inflation-adjusted landings revenue, and inflation-adjusted revenue per active vessel increased.

Central Gulf of Alaska Rockfish Program: The program was initially established as a two-year (2007–2008) pilot program by the U.S. Congress and was later extended to five years. NOAA Fisheries implemented this catch share program in 2012. The objectives of this program are to reduce bycatch and discards, encourage conservation-minded practices, improve product quality and value, and provide stability to the processing labor force. The 2019 key performance indicators of the program show that relative to the baseline period, quota, landings, the number of active vessels, inflation-adjusted landings revenue, and inflation-adjusted revenue per active vessel all increased.

COMMERCIAL FISHERIES — NORTH PACIFIC REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key North Pacific Commercial Species

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

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

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[1]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry supported 43,870 full- and part-time jobs and generated $3.7 billion in sales, $1.6 billion in income, and $2 billion in value-added impacts in the North Pacific Region. Commercial harvesters generated the largest sales impacts ($2.5 billion), value-added impacts ($1.4 billion), income impacts ($1.2 billion), and employment impacts (31,670 jobs).

Landings Revenue

In 2020, landings revenue in Alaska totaled $1.5 billion, a 27% decrease from 2011 (a 37% decrease in real terms after adjusting for inflation) and a 16% decrease from 2019.

Finfish landings revenue accounted for 58% of all landings revenue. In 2020, salmon ($449.5 million), Alaska pollock ($420 million), and crab ($180.8 million) had the highest landings revenue in this region. Together, these top three species accounted for 71% of total landings revenue.

From 2011 to 2020, Atka mackerel (22%, 5% in real terms) and Alaska pollock (4%, -10% in real terms) had the largest increases, while sablefish (-69%, -73% in real terms), Pacific halibut (-68%, -72% in real terms), and flatfish (-50%, -57% in real terms) had the largest decreases. From 2019 to 2020, Pacific cod (15%) and Alaska pollock (8%) had the largest increases, while Pacific herring (-63%), sablefish (-36%), and salmon (-33%) had the largest decreases.

Commercial Revenue: Largest Increases

From 2011:
- Atka mackerel (22%, 5% in real terms)
- Alaska pollock (4%, -10% in real terms)

From 2019:
- Pacific cod (15%)
- Alaska pollock (8%)

Commercial Revenue: Largest Decreases

From 2011:
- Sablefish (-69%, -73% in real terms)
- Pacific halibut (-68%, -72% in real terms)
- Flatfish (-50%, -57% in real terms)

From 2019:
- Pacific herring (-63%)
- Sablefish (-36%)
- Salmon (-33%)

Landings

In 2020, Alaska's commercial fishermen landed over 5.1 billion pounds of finfish and shellfish. This represents a 5% decrease from 2011 and a 10% decrease from 2019.

[1] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]

Alaska pollock contributed the highest landings volume in the region, accounting for 64% of total landing weight.

From 2011 to 2020, rockfish (59%), Alaska pollock (15%), and Atka mackerel (15%) had the largest increases, while Pacific herring (-82%), Pacific halibut (-48%), and Pacific cod (-43%) had the largest decreases. From 2019 to 2020, crab (15%), sablefish (12%), and Atka mackerel (2%) had the largest increases, while Pacific herring (-66%), salmon (-41%), and Pacific cod (-18%) had the largest decreases.

Commercial Landings: Largest Increases

From 2011:
- Rockfish (59%)
- Alaska pollock (15%)
- Atka mackerel (15%)

From 2019:
- Crab (15%)
- Sablefish (12%)
- Atka mackerel (2%)

Commercial Landings: Largest Decreases

From 2011:
- Pacific herring (-82%)
- Pacific halibut (-48%)
- Pacific cod (-43%)

From 2019:
- Pacific herring (-66%)
- Salmon (-41%)
- Pacific cod (-18%)

Prices

In 2020, crab ($3.22 per pound) received the highest ex-vessel price in the region. Landings of Alaska pollock ($0.13 per pound) had the lowest ex-vessel price. From 2011 to 2020, Pacific herring (318%, 261% in real terms), Pacific cod (46%, 26% in real terms), and salmon (11%, -4% in real terms) had the largest increases, while sablefish (-72%, -76% in real terms), rockfish (-51%, -58% in real terms), and Pacific halibut (-38%, -46% in real terms) had the largest decreases. From 2019 to 2020, Pacific cod (41%), salmon (13%), and Alaska pollock (12%) had the largest increases, while sablefish (-43%), rockfish (-28%), and Pacific halibut (-23%) had the largest decreases.

RECREATIONAL FISHERIES — NORTH PACIFIC REGION

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. This recreational fisheries section reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[2]

Key North Pacific Region Recreational Species[3]
- Chinook salmon
- Chum salmon
- Coho salmon
- Lingcod
- Pacific cod
- Pacific halibut
- Pink salmon
- Rockfish species
- Sablefish/black cod
- Sockeye salmon

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the North Pacific Region is based on spending by recreational anglers.[4] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that

[2] Information reported is from the Sport Fish Division of the Alaska Department of Fish and Game (ADF&G) for saltwater fishing activities.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

In 2020, economic impacts from recreational fishing trips in the North Pacific Region generated 2,342 jobs, $286.8 million in sales, $95 million in income, and $166.7 million in value-added impacts. Of the three fishing trip modes, for-hire fishing trips had the greatest economic impact, accounting for 69% of employment impacts.

Trip expenditures totaled $223.2 million, with a large portion of the total coming from trips in the for-hire (53%) and private boat (43%) sectors.

Participation

Due to changes in data availability after 2018, angler participation data is not being reported at the state level for years after 2018.

Days Fished

The state of Alaska records recreational fishing effort in terms of the number of days fished, rather than the number of fishing trips. Anglers who fished in Alaska spent approximately 565,628 days fishing in 2020. This number represented a 23% decrease from the days spent fishing in 2011. From 2019 to 2020, there was a 32% decrease in the number of days fished.

Harvest and Release Trends

Of the North Pacific Region's key species and species groups, Pacific halibut (390,470 fish), rockfish species (321,181 fish), and coho salmon (237,942 fish) were most frequently caught by recreational fishermen. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, sockeye salmon (8%) had the largest increases, while chum salmon (-68%), Pacific cod (-62%), and lingcod (-27%) had the largest decreases. From 2019 to 2020, Pacific cod (7%) had the largest increases, while sablefish/black cod (-58%), chum salmon (-54%), and pink salmon (-38%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Sockeye salmon (8%)

From 2019:
- Pacific cod (7%)

Harvest and Release: Largest Decreases

From 2011:
- Chum salmon (-68%)
- Pacific cod (-62%)
- Lingcod (-27%)

From 2019:
- Sablefish/black cod (-58%)
- Chum salmon (-54%)
- Pink salmon (-38%)

MARINE ECONOMY — NORTH PACIFIC REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[5]

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing 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 U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state

[5] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).
[6] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.

than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

The Bureau of Labor Statistics suppressed the CFLQ value for Alaska for 2019.

In 2019, 21,399 employer establishments operated throughout Alaska (including marine and non-marine related establishments). These establishments employed 264,971 workers and had a total annual payroll of $16.6 billion. The gross state product of Alaska was approximately $54.5 billion in 2019.

Seafood Sales and Processing[7]

Seafood Product Preparation and Packaging: In 2019, Alaska had 98 employer firms in the seafood product preparation and packaging sector (a 20% decrease from 2011).

Retail Seafood Sales: In 2019, there were 12 employer firms in the seafood retail sector in Alaska (a 20% increase from 2011).

Wholesale Seafood Sales: There were 35 employer firms in the seafood wholesale sector in Alaska in 2019 (a 27% decrease from 2011).

Transportation Support and Marine Operations

Data for the transportation support and marine operations sectors in Alaska were largely suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the state's economy. For example, in 2019, the coastal and Great Lakes freight transportation sector in Alaska accounted for $85.7 million in payroll.

[7] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently this information is not available from the Census Bureau for 2019.

Tables | Alaska



2020 Economic Impacts of the Alaska Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	43,870	3,661,146	1,628,171	2,019,764	43,728	3,628,662	1,621,604	2,008,694
Commercial Harvesters	31,670	2,549,300	1,153,182	1,424,749	31,670	2,549,300	1,153,182	1,424,749
Seafood Processors and Dealers	9,524	920,713	401,778	498,140	9,501	918,494	400,808	496,939
Importers	82	27,057	4,336	8,248	NA	NA	NA	NA
Seafood Wholesalers and Distributors	298	37,374	12,797	16,710	283	35,494	12,153	15,870
Retail	2,296	126,702	56,077	71,916	2,274	125,374	55,461	71,136

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	2,021	1,969	1,878	1,712	1,768	1,551	2,003	1,782	1,754	1,481
Finfish	1,310	1,186	1,225	1,059	966	898	1,355	1,159	1,162	866
Shellfish and Other	711	783	653	653	802	653	648	623	592	615
Key Species	-	-	-	-	-	-	-	-	-	-
Alaska pollock	402	453	406	400	509	417	457	451	388	420
Atka mackerel	30	31	15	22	31	32	51	55	44	37
Crab	290	309	230	238	279	219	173	152	184	181
Flatfish	110	123	123	100	69	70	92	90	102	98
Pacific cod	163	171	156	153	174	171	194	239	119	137
Pacific halibut	205	145	111	107	111	117	116	83	93	66
Pacific herring	11	22	16	11	7	5	8	7	21	8
Rockfish	34	33	35	28	29	30	31	34	38	26
Sablefish	140	120	82	86	86	86	113	86	68	44
Salmon	612	533	680	546	455	381	745	553	673	449

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	5,355	5,346	5,792	5,671	6,014	5,586	6,006	5,404	5,631	5,062
Finfish	2,459	2,356	2,696	2,433	2,645	2,155	2,571	1,992	2,224	1,771
Shellfish and Other	2,897	2,990	3,096	3,238	3,369	3,430	3,435	3,412	3,408	3,291
Key Species	-	-	-	-	-	-	-	-	-	-
Alaska pollock	2,811	2,872	3,003	3,146	3,263	3,355	3,389	3,364	3,353	3,230
Atka mackerel	113	104	51	70	118	121	143	157	127	129
Crab	80	112	87	85	97	69	39	39	49	56
Flatfish	650	647	660	664	511	523	505	488	500	509
Pacific cod	663	717	681	717	697	707	657	512	464	380
Pacific halibut	41	32	29	22	23	23	25	20	23	21
Pacific herring	99	75	85	97	68	52	68	46	51	17
Rockfish	106	115	123	133	142	146	138	155	178	169
Sablefish	29	31	30	26	24	22	26	27	29	32
Salmon	738	612	1,013	683	1,041	543	986	557	827	490

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alaska pollock	0.14	0.16	0.14	0.13	0.16	0.12	0.13	0.13	0.12	0.13
Atka mackerel	0.27	0.29	0.30	0.32	0.26	0.26	0.36	0.35	0.35	0.28
Crab	3.61	2.76	2.64	2.79	2.87	3.19	4.46	3.88	3.76	3.22
Flatfish	0.48	0.41	0.35	0.31	0.35	0.36	0.41	0.36	0.39	0.32
Pacific cod	0.25	0.24	0.23	0.21	0.25	0.24	0.30	0.47	0.26	0.36
Pacific halibut	4.97	4.47	3.88	4.93	4.84	5.03	4.74	4.06	4.02	3.10
Pacific herring	0.11	0.29	0.19	0.12	0.10	0.10	0.12	0.15	0.42	0.46
Rockfish	0.32	0.29	0.28	0.21	0.21	0.21	0.22	0.22	0.21	0.15
Sablefish	4.84	3.82	2.72	3.37	3.62	3.93	4.43	3.15	2.36	1.35
Salmon	0.83	0.87	0.67	0.80	0.44	0.70	0.76	0.99	0.81	0.92

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Alaska Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	1,612	169,853	58,890	95,393
Private Boat	662	107,182	32,891	65,221
Shore	69	9,746	3,263	6,058
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	2,342	286,781	95,043	166,672

2020 Angler Trip Expenditures by Fishing Mode (thousands of dollars)[2]

Total Trip	For-Hire	Private Boat	Shore
223,196	117,958	96,711	8,526

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	286	278	307	292	309	296	295	296	NA	NA
Coastal/Non-Coastal	124	118	129	122	128	115	117	110	NA	NA
Out-of-State	161	160	178	170	181	181	178	186	NA	NA

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angler Days Fished	737	735	897	876	890	782	812	774	830	566

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[4,5,6]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Chinook salmon	H	85	63	81	111	111	101	85	62	64	74
	R	95	62	120	94	116	87	106	74	92	65
Chum salmon	H	21	11	25	12	13	10	10	6	11	6
	R	38	20	39	19	25	22	22	16	29	13
Coho salmon	H	386	263	493	390	479	263	468	297	338	200
	R	88	50	122	60	99	41	71	45	57	38
Lingcod	H	33	33	34	32	28	26	22	29	28	23
	R	36	36	33	29	27	23	27	43	41	27
Pacific cod	H	48	42	38	61	58	44	20	15	26	23
	R	76	50	48	73	75	43	24	12	18	24
Pacific halibut	H	394	388	454	408	420	400	352	352	352	261
	R	311	324	324	251	271	244	199	184	185	130
Pink salmon	H	72	78	113	69	110	103	102	70	121	70
	R	135	141	203	118	204	126	170	104	151	97
Rockfish species	H	211	230	256	335	332	347	279	309	330	196
	R	122	121	121	148	143	157	129	150	191	126
Sablefish/ black cod	H	10	18	18	12	23	15	22	26	26	10
	R	8	9	6	6	13	4	6	8	8	4
Sockeye salmon	H	31	28	40	35	33	34	36	38	57	38
	R	10	8	13	12	9	7	10	7	11	7

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] All data reported in this table are from saltwater fishing activities.
[3] Alaska effort is measured in 'Days Fished,' not in 'Angler Trips.'
[4] Information reported in this table is from the Sport Fish Division of the Alaska Department of Fish and Game (ADF&G) for saltwater fishing activities.
[5] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[6] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Alaska State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	21,399 (0.3%)	264,971 (0.2%)	16.6 (0.2%)	29.2 (0.3%)	54.5	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	26	25	35	31	30	22	20	20	NA
	Receipts	2,882	2,708	3,268	2,472	4,091	1,743	1,792	2,183	NA
Seafood sales, retail	Firms	15	15	11	17	11	13	20	15	NA
	Receipts	903	1,626	1,458	1,539	761	1,483	1,384	1,830	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	122	116	115	108	109	104	94	100	98
	Employees	8,578	8,289	8,638	9,115	8,472	8,654	8,553	7,782	7,560
	Payroll	296,851	297,284	308,961	337,171	356,855	355,129	347,495	352,136	394,463
Seafood Sales, Wholesale	Establishments	48	47	43	43	37	33	36	39	35
	Employees	159	143	102	120	94	79	277	248	462
	Payroll	9,985	10,943	7,205	7,024	7,306	6,037	22,658	24,231	26,425
Seafood sales, retail	Establishments	10	15	14	14	15	16	14	15	12
	Employees	ds	ds	ds	ds	64	77	53	55	50
	Payroll	2,487	2,019	2,337	2,687	2,498	2,549	1,798	1,945	2,052

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	23	23	20	27	23	23	17	16	15
	Employees	ds	ds	ds	335	344	394	327	270	288
	Payroll	ds	ds	ds	15,845	17,748	18,762	14,505	14,765	18,106
Deep Sea Freight Transportation	Establishments	1	2	3	6	5	5	4	4	4
	Employees	ds	ds	ds	ds	ds	ds	ds	28	23
	Payroll	ds	ds	ds	ds	ds	ds	ds	8,721	8,892
Deep Sea Passenger Transportation	Establishments	1	1	2	1	1	1	3	NA	3
	Employees	ds	ds	ds	ds	ds	ds	ds	NA	24
	Payroll	ds	ds	ds	ds	ds	ds	ds	NA	931
Coastal and Great Lakes Freight Transportation	Establishments	63	47	53	72	74	79	90	89	89
	Employees	ds	ds	ds	ds	1,067	966	981	1,201	978
	Payroll	ds	ds	82,692	89,020	89,281	86,849	86,178	103,960	85,706
Port and Harbor Operations	Establishments	8	18	13	12	11	11	9	10	10
	Employees	ds	582	ds	ds	ds	14	ds	30	26
	Payroll	1,790	25,545	ds	ds	ds	904	ds	1,898	2,130
Marine Cargo Handling	Establishments	14	8	9	9	9	8	7	7	7
	Employees	ds	334	ds	ds	437	410	436	402	396
	Payroll	ds	26,481	ds	ds	32,326	32,171	31,439	31,676	33,660
Navigational Services to Shipping	Establishments	22	21	22	25	24	23	28	30	32
	Employees	321	97	103	138	140	126	168	174	149
	Payroll	27,156	9,938	10,805	13,015	13,596	14,221	17,063	19,971	19,061
Marinas	Establishments	14	13	12	11	11	10	9	9	10
	Employees	ds	ds	ds	ds	30	33	43	40	48
	Payroll	2,053	1,613	1,449	ds	1,423	1,568	1,818	1,584	2,024

[1] ds = Data are suppressed.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

Pacific Region

- California
- Oregon
- Washington



Recreational fishermen.
Photo: NOAA Fisheries

MANAGEMENT CONTEXT

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

Pacific Region FMPs

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

Six of the stocks or stock complexes covered in these FMPs were listed as overfished in 2020: Chinook salmon (Sacramento River fall stock and Klamath River fall stock); coho salmon (Queets stock and Juan de Fuca stock); Pacific bluefin tuna (Pacific stock); and Pacific sardine (northern subpopulation). The Snohomish coho salmon stock was removed from the overfished stocks in 2020. Three stocks/complexes were subject to overfishing in 2019: Pacific bluefin tuna (Pacific stock); swordfish (Eastern Pacific stock); and yellowfin tuna (Eastern Pacific stock).[1]

Conservative management techniques are employed in the Pacific Region's fisheries. For example, groundfish and salmon fisheries are subject to "weak stock management" where access to the surplus of healthier stocks that can be harvested is often restricted to protect weaker stocks with which they commingle in the ocean. These weaker stocks have included 10 groundfish stocks that have been managed under rebuilding plans, salmon (listed under the Endangered Species Act), and other non-listed stocks that constrain the fishery. Currently, nine of the 10 groundfish stocks have been successfully rebuilt since the stocks were declared overfished or depleted in 1999;[2] only the yelloweye rockfish stock is currently managed under a rebuilding plan.[3]

Salmon management is further complicated by the need to ensure equal allocation of harvest among diverse user groups and coordination with other entities that have jurisdiction over various aspects of salmon management. Decades of habitat modification, hatchery practices, harvest and growing competition for water have affected the viability of salmon stocks and made them more vulnerable to adverse environmental conditions. These conditions include the prolonged drought and adverse ocean conditions experienced in recent years. Low returns of salmon to the Klamath River in 2006 and to the Sacramento River in 2008 and 2009 resulted in unprecedented closures of ocean and in-river fisheries, leading to federal disaster relief for affected entities. More recently, there were 10 fishery disaster determinations related to Pacific Region salmon stocks from 2015 through 2020.[4]

Coastal pelagic species (CPS) are highly variable, environmentally sensitive stocks that provide food for marine mammals, birds, and fish. These species include Pacific sardine, northern anchovy, Pacific and jack mackerel, and market squid. Of these species, Pacific sardine is the most commonly targeted CPS finfish and is managed according to an innovative harvest control rule: Allowable harvest varies with sea surface temperature. Because the geographic range of sardine tends to expand with abundance, harvest allocation between the California and Pacific Northwest fisheries is an ongoing and dynamic issue. The annual guideline for sardine harvest 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 United States and Canada determines total allowable catch levels (TACs) for Pacific halibut that will be caught in the United States and Canadian exclusive economic zones (EEZs). After catch levels are determined, the PFMC develops a catch-sharing plan for tribal and non-tribal (i.e., commercial and recreational) fisheries in the federal waters of California, Oregon, and Washington. Pacific halibut is targeted only with

[1] The bluefin tuna, yellowfin tuna, swordfish and striped marlin stocks cited here as overfished and/or experiencing overfishing are fished by U.S. and international fleets under a formal international agreement.
[2] Pacific Fishery Management Council. 2021. Council news: Rigorous management practices have led to successful rebuilding of several West Coast groundfish stocks. [Available at https://www.pcouncil.org/council-news-rigorous-management-practices-have-led-to-successful-rebuilding-of-several-west-coast-groundfish-stocks/ (accessed September 29, 2021.]
[3] Pacific Fishery Management Council. 2021. Fact Sheet: Overfishing and Rebuilding. [Available at https://www.pcouncil.org/fact-sheet-overfishing-and-rebuilding/, accessed September 29, 2021.]
[4] For additional information on fishery disaster determinations, see https://www.fisheries.noaa.gov/national/funding-and-financial-services/fishery-disaster-determinations.

hook gear, but there are allocations to the trawl sector for bycatch, including individual bycatch quotas, in the Pacific groundfish trawl IFQ.

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

Catch Share Programs

The Pacific Region has two catch share programs: 1) the Pacific Coast Sablefish Permit Stacking Program; and 2) the Pacific Groundfish Trawl Rationalization Program (whiting and non-whiting trawl). The landings revenues for these programs totaled $66.7 million in 2019. The following are descriptions of these catch share programs and their performance.

Pacific Coast Sablefish Permit Stacking Program: This program was implemented in 2001 and allows vessels to stack multiple vessel permits on a single vessel. The goal of this approach is to improve economic efficiency through rationalization of the fixed gear fleet, increase benefits for fishing communities, promote equity, lessen reallocation effects of previous harvest regulations, promote safety, and improve product quality and value. The 2019 key performance indicators of the program show that relative to the baseline period, landings,the number of active vessels, and inflation-adjusted landings revenue decreased while inflation-adjusted revenue per active vessel increased. There was no catch quota prior to the implementation of the catch share program so program performance could not be evaluated for this metric.

A recent study of this fleet demonstrated that after the catch share program was implemented, the probability of fishermen taking a fishing trip in high wind conditions decreased 82%. This provides evidence that institutional changes can significantly reduce risk taking behavior and result in safer fisheries.

Pacific Groundfish Trawl Rationalization Program (whiting and non-whiting trawl): This program was implemented by the PFMC in January 2011. This program involves individual fishing quotas (IFQs) for non-whiting groundfish and whiting trawlers delivering to shoreside plants and cooperatives for whiting mothership and catcher processor sectors. The objectives of this program are to provide a mechanism for total catch accounting; provide a viable, profitable, and efficient groundfish fishery; promote practices that reduce 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, and support sectors of the industry; provide quality product for the consumer; and increase safety in the fishery.

The 2020 key performance indicators of the program show that relative to the baseline period the number of active vessels decreased, while landings, inflation-adjusted landings revenue, and inflation-adjusted revenue per active vessel increased. There was no catch quota prior to the implementation of the catch share program so program performance could not be evaluated for this metric.

Expanded observer coverage and dockside monitoring, which were implemented with the catch share program, coupled with long-term adherence to catch targets and improved stock assessment models, have to varying degrees also contributed to improved fishery performance. For example, in the first three years of catch shares, the total catch of rebuilding stocks (of which two — canary rockfish and petrale sole — are now declared rebuilt) was 50% lower than in the previous three years.

COMMERCIAL FISHERIES — PACIFIC REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries

section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key Pacific Commercial Species

- Albacore tuna
- Crab
- Flatfish
- Other shellfish
- Pacific hake (whiting)
- Rockfish
- Sablefish
- Salmon
- Shrimp
- Squid

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[5]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry in California generated the largest employment impacts in the Pacific Region with 129,938 full- and part-time jobs. California also generated the largest sales impacts ($26.2 billion), value-added impacts ($9.3 billion), and income impacts ($5.6 billion).

Landings Revenue

In 2020, landings revenue in the Pacific Region totaled $582.1 million, a 22% decrease from 2011 (a 33% decrease in real terms after adjusting for inflation) and a 19% decrease from 2019. Landings revenue was highest in Washington ($262.6 million), followed by Oregon ($154.9 million).

Shellfish and other landings revenue accounted for 75% of all landings revenue. In 2020, crab ($181.2 million), other shellfish ($113.4 million), and shrimp ($41.8 million) had the highest landings revenue in this region. Together, these top three species accounted for 58% of total landings revenue.

From 2011 to 2020, rockfish (94%, 68% in real terms) and shrimp (4%, -10% in real terms) had the largest increases, while sablefish (-74%, -78% in real terms), squid (-52%, -58% in real terms), and albacore tuna (-44%, -52% in real terms) had the largest decreases. From 2019 to 2020, squid (97%) and shrimp (2%) had the largest increases, while sablefish (-44%), Pacific hake (whiting) (-43%), and rockfish (-26%) had the largest decreases.

[5] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]

Commercial Revenue: Largest Increases

From 2011:
- Rockfish (94%, 68% in real terms)
- Shrimp (4%, -10% in real terms)

From 2019:
- Squid (97%)
- Shrimp (2%)

Commercial Revenue: Largest Decreases

From 2011:
- Sablefish (-74%, -78% in real terms)
- Squid (-52%, -58% in real terms)
- Albacore tuna (-44%, -52% in real terms)

From 2019:
- Sablefish (-44%)
- Pacific hake (whiting) (-43%)
- Rockfish (-26%)

Commercial Landings: Largest Increases

From 2011:
- Rockfish (498%)
- Pacific hake (whiting) (8%)

From 2019:
- Squid (71%)
- Shrimp (44%)

Commercial Landings: Largest Decreases

From 2011:
- Squid (-79%)
- Salmon (-76%)
- Sablefish (-39%)

From 2019:
- Other shellfish (-38%)
- Sablefish (-26%)
- Pacific hake (whiting) (-22%)

Landings

In 2020, Pacific Region commercial fishermen landed over 942.8 million pounds of finfish and shellfish. This represents a 21% decrease from 2011 and a 7% decrease from 2019. Pacific hake (whiting) contributed the highest landings volume in the region, accounting for 58% of total landing weight.

From 2011 to 2020, rockfish (498%) and Pacific hake (whiting) (8%) had the largest increases, while squid (-79%), salmon (-76%), and sablefish (-39%) had the largest decreases. From 2019 to 2020, squid (71%) and shrimp (44%) had the largest increases, while other shellfish (-38%), sablefish (-26%), and Pacific hake (whiting) (-22%) had the largest decreases.

Prices

In 2020, other shellfish ($12.37 per pound) received the highest ex-vessel price in the region. Landings of Pacific hake (whiting) ($0.07 per pound) had the lowest ex-vessel price. From 2011 to 2020, squid (133%, 101% in real terms), salmon (132%, 100% in real terms), and other shellfish (50%, 30% in real terms) had the largest increases, while rockfish (-68%, -72% in real terms), sablefish (-58%, -64% in real terms), and Pacific hake (whiting) (-40%, -48% in real terms) had the largest decreases. From 2019 to 2020, other shellfish (21%), squid (15%), and crab (4%) had the largest increases, while shrimp (-29%), Pacific hake (whiting) (-27%), and sablefish (-25%) had the largest decreases.

RECREATIONAL FISHERIES — PACIFIC REGION

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. This recreational fisheries section reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[6]

[6] Pacific recreational catch and effort estimates are based on multiple data sources. See Data Sources section.

Key Pacific Region Recreational Species[7]

- Black rockfish
- Bocaccio
- Cabezon
- Canary rockfish
- Lingcod
- Mackerels[8]
- Pacific halibut
- Salmon[9]
- Surfperches[10]
- Tunas

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the Pacific Region is based on spending by recreational anglers.[11] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

The greatest employment impacts from expenditures on saltwater recreational fishing in the Pacific Region were generated in California (5,083 jobs), followed by Washington (1,255 jobs) and Oregon (569 jobs).The largest sales impacts were observed in California ($718.1 million), followed by Washington ($180.9 million) and Oregon ($59 million). The biggest income impacts were generated in California ($176.3 million), followed by Washington ($59.6 million) and Oregon ($22.5 million). The greatest value-added impacts were in California ($301.6 million), followed by Washington ($108.1 million) and Oregon ($36.2 million).

A large portion of the approximately 473.1 million in trip expenses came from trips in the Private Boat (46.8%) and For-Hire (40.6%) sectors.

Participation

Due to changes in data availability after 2018, angler participation data is not being reported at the state level for years after 2018.

Fishing Trips

In 2020, recreational fishermen took 2.3 million fishing trips in the Pacific Region. This number represented a 56% decrease from 2011 and a 45% decrease from 2019. The largest proportions of trips were taken in the private boat mode (46%) and shore (32%). States with the highest number of recorded trips in the Pacific Region were California (1.6 million trips) and Washington (496,305 trips).

Harvest and Release Trends

Of the Pacific Region's key species and species groups, black rockfish (620,496 fish), mackerels (559,278 fish), and salmon (415,853 fish), were most frequently caught by recreational fishermen. The following text box shows

[7] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[8] Bullet mackerel, chub mackerel, frigate mackerel, mackerel family, and Pacific (chub) mackerel
[9] Chinook salmon, chum salmon, coho salmon, pink salmon, and sockeye salmon
[10] Barred surfperch, black perch, calico surfperch, dwarf perch, kelp perch, pile perch, pink seaperch, rainbow seaperch, redtail surfperch, rubberlip seaperch, sharpnose seaperch, shiner perch, silver surfperch, spotfin surfperch, striped seaperch, surfperch family, walleye surfperch, and white seaperch.
[11] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, Pacific halibut (93%), tunas (87%), and canary rockfish (55%) had the largest increases, while surfperches (-88%), bocaccio (-67%), and cabezon (-43%) had the largest decreases. From 2019 to 2020, surfperches (24%) had the largest increases, while bocaccio (-72%), tunas (-61%), and mackerels (-56%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Pacific halibut (93%)
- Tunas (87%)
- Canary rockfish (55%)

From 2019:
- Surfperches (24%)

Harvest and Release: Largest Decreases

From 2011:
- Surfperches (-88%)
- Bocaccio (-67%)
- Cabezon (-43%)

From 2019:
- Bocaccio (-72%)
- Tunas (-61%)
- Mackerels (-56%)

MARINE ECONOMY — PACIFIC REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[12]

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing sector in a state's economy relative to the size of the commercial fishing sector in the national economy.[13] The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

The Bureau of Labor Statistics suppressed the CFLQ value for Oregon and Washington for 2019. California had a CFLQ value of 0.51.

In 2019, 1.3 million employer establishments operated throughout the entire Pacific Region (including marine and non-marine related establishments). These establishments employed 20.1 million workers and had a total annual payroll of $1.4 trillion. The combined gross state product of California, Oregon, and Washington was approximately $3.9 trillion in 2019.

Seafood Sales and Processing[14]

Seafood Product Preparation and Packaging: In 2019, there were 143 employer firms in the seafood product preparation and packaging sector in the Pacific Region (an 11% decrease from 2011). The greatest number of establishments in this sector was in Washington (79), followed by California (39) and Oregon (25).

Retail Seafood Sales: In 2019, there were 205 employer firms in the seafood retail sector in the Pacific Region (a 7% decrease from 2011). The greatest number of establishments in this sector was in California (155), followed by Washington (29) and Oregon (21).

Wholesale Seafood Sales: There were 456 employer firms in the seafood wholesale sector in the Pacific Region in 2019 (a 15% decrease from 2011). The greatest number of establishments in this sector was in California (325), followed by Washington (111) and Oregon (20).

[12] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).
[13] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.'
[14] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently this information is not available from the Census Bureau for 2019.

Transportation Support and Marine Operations

Data for the transportation support and marine operations sectors of the Pacific Region's economy were largely suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the regional economy. For example, in 2019, the ship and boat building sector in the Pacific Region accounted for $979.8 million in payroll.

Tables | Pacific Region



2020 Economic Impacts of the Pacific Seafood Industry (thousands of dollars; number of jobs)[1]

State	Landings Revenue	With Imports				Without Imports			
		Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
California	143,022	129,938	26,242,840	5,552,074	9,273,696	8,747	782,559	292,502	402,944
Oregon	154,883	13,508	1,139,196	386,127	546,785	11,651	730,262	302,460	405,997
Washington	262,621	62,157	9,718,293	2,492,442	3,846,751	17,368	1,363,755	564,325	764,813

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	747,612	726,833	855,713	802,066	640,998	768,491	775,542	776,719	715,263	582,096
Finfish	245,002	230,929	262,283	248,307	182,814	207,060	232,695	203,137	204,168	147,264
Shellfish and Other	502,610	495,904	593,430	553,759	458,183	561,431	542,847	573,582	511,095	434,832
Key Species	-	-	-	-	-	-	-	-	-	-
Albacore tuna	43,347	45,851	41,930	32,792	29,374	37,657	34,812	24,929	27,838	24,129
Crab	182,318	177,866	250,431	199,104	105,290	230,185	209,323	237,844	207,403	181,176
Flatfish	16,921	17,438	20,782	19,422	20,626	22,600	24,464	21,862	21,810	16,432
Other shellfish	119,727	117,687	127,414	125,272	139,850	143,085	146,578	150,224	151,951	113,416
Pacific hake (whiting)	56,739	48,635	64,877	64,111	25,206	46,843	60,438	48,307	64,648	36,789
Rockfish	5,230	5,714	5,552	5,950	7,058	5,647	10,247	12,682	13,738	10,150
Sablefish	44,851	28,334	19,423	24,489	28,680	31,632	34,011	25,164	20,685	11,526
Salmon	53,573	47,865	76,760	70,590	47,226	40,135	42,307	45,722	34,513	29,894
Shrimp	40,285	40,073	42,193	60,825	87,280	48,083	29,691	49,122	40,899	41,820
Squid	66,520	63,922	73,732	72,915	24,466	40,264	68,704	38,841	16,373	32,184

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1,200,351	1,097,077	1,278,389	1,227,684	771,849	965,589	1,196,998	1,108,822	1,011,523	942,795
Finfish	731,187	711,818	838,605	805,863	517,105	708,984	926,495	759,872	845,888	668,557
Shellfish and Other	469,164	385,258	439,784	421,821	254,745	256,605	270,503	348,950	165,634	274,238
Key Species	-	-	-	-	-	-	-	-	-	-
Albacore tuna	24,358	30,722	28,511	27,315	24,899	23,009	16,452	15,323	16,722	15,806
Crab	66,682	53,280	87,594	52,177	22,795	66,568	60,717	67,923	57,290	47,894
Flatfish	27,347	26,871	30,493	25,651	26,291	28,567	30,666	25,293	22,761	18,206
Other shellfish	14,556	14,590	14,213	14,617	15,657	13,891	14,206	14,454	14,871	9,166
Pacific hake (whiting)	508,267	352,393	514,495	581,576	339,488	577,353	778,901	586,773	697,509	546,519
Rockfish	5,679	6,588	6,277	7,075	8,861	7,242	23,400	35,382	35,330	33,981
Sablefish	14,161	11,687	9,126	9,757	11,395	11,923	12,214	11,588	11,701	8,688
Salmon	42,222	24,709	57,208	37,034	25,980	18,902	22,597	19,868	11,663	10,151
Shrimp	66,739	66,406	71,451	93,380	105,088	55,257	35,776	52,269	41,453	59,743
Squid	267,936	215,521	230,230	229,553	81,234	84,594	137,636	80,210	32,508	55,573

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Albacore tuna	1.78	1.49	1.47	1.20	1.18	1.64	2.12	1.63	1.66	1.53
Crab	2.73	3.34	2.86	3.82	4.62	3.46	3.45	3.50	3.62	3.78
Flatfish	0.62	0.65	0.68	0.76	0.78	0.79	0.80	0.86	0.96	0.90
Other shellfish	8.23	8.07	8.96	8.57	8.93	10.30	10.32	10.39	10.22	12.37
Pacific hake (whiting)	0.11	0.14	0.13	0.11	0.07	0.08	0.08	0.08	0.09	0.07
Rockfish	0.92	0.87	0.88	0.84	0.80	0.78	0.44	0.36	0.39	0.30
Sablefish	3.17	2.42	2.13	2.51	2.52	2.65	2.78	2.17	1.77	1.33
Salmon	1.27	1.94	1.34	1.91	1.82	2.12	1.87	2.30	2.96	2.95
Shrimp	0.60	0.60	0.59	0.65	0.83	0.87	0.83	0.94	0.99	0.70
Squid	0.25	0.30	0.32	0.32	0.30	0.48	0.50	0.48	0.50	0.58

[1] The Pacific Region includes landings by Pacific at-sea processors. However, revenue from these landings are not included in the state tables.

2020 Economic Impacts of Pacific Recreational Fishing (thousands of dollars; number of jobs)[1,2]

State	Trips	Jobs	Sales	Income
California	1,611	5,083	718,123	176,349
Oregon	195	569	59,049	22,525
Washington	496	1,255	180,873	59,645

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
176,625	39,517	137,107	NA

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	1,575	1,402	1,766	1,736	1,662	1,181	1,316	1,157	NA	NA
Coastal	1,193	1,056	1,382	1,307	1,236	849	966	827	NA	NA
Non-Coastal	382	346	384	429	426	332	350	330	NA	NA

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	5,247	6,574	6,616	6,362	4,676	4,161	4,745	4,132	4,221	691
For-Hire	674	681	746	1,077	848	751	776	770	785	87
Private Boat	1,528	1,666	1,757	1,680	1,444	1,033	1,596	1,098	1,250	604
Shore	3,045	4,227	4,113	3,606	2,385	2,377	2,373	2,264	2,187	730

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[4,5]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Black rockfish	H	609	734	1,056	954	985	904	710	593	621	511
	R	77	75	125	117	147	115	162	122	117	110
Bocaccio	H	166	211	187	144	136	84	138	159	198	53
	R	< 1	2	13	6	2	3	< 1	3	3	3
Cabezon	H	33	34	29	31	35	34	28	21	22	15
	R	25	35	35	23	20	21	23	24	22	18
Canary rockfish	H	47	45	39	47	61	53	142	121	136	110
	R	38	41	62	61	93	73	42	24	22	22
Lingcod	H	159	200	264	273	358	339	296	251	207	170
	R	230	229	213	186	200	206	143	125	120	99
Mackerels	H	1,111	836	583	927	1,685	1,011	1,419	1,188	831	344
	R	532	409	333	572	529	589	769	636	433	215
Pacific halibut	H	10	14	15	16	14	15	12	12	23	23
	R	3	3	3	4	4	4	2	3	3	2
Salmon	H	517	385	702	773	740	158	319	272	400	208
	R	335	227	372	312	416	124	290	267	333	208
Surfperches	H	824	1,028	812	985	1,227	819	871	91	74	80
	R	714	984	819	998	913	521	700	81	76	105
Tunas	H	46	118	79	123	115	85	57	64	221	85
	R	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] For relevant tables on this page, California estimates on catch and effort is not available for April through June 2020 due to COVID-19 impacts. Expenditure, impact, effort, and catch estimates are based on 9 months of data for 2020.
[3] Oregon and Washington trip estimates are not available for the shore mode.
[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

Tables | California



2020 Economic Impacts of the California Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	129,938	26,242,840	5,552,074	9,273,696	8,747	782,559	292,502	402,944
Commercial Harvesters	2,521	286,556	97,590	143,252	2,521	286,556	97,590	143,252
Seafood Processors and Dealers	4,231	520,844	193,133	256,269	1,056	130,013	48,210	63,970
Importers	60,778	20,123,660	3,225,200	6,134,573	NA	NA	NA	NA
Seafood Wholesalers and Distributors	11,903	2,019,851	655,139	915,275	359	60,988	19,781	27,636
Retail	50,504	3,291,928	1,381,011	1,824,327	4,810	305,002	126,920	168,086

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	201,257	232,204	257,039	235,339	143,051	205,046	211,953	197,429	163,988	143,022
Finfish	46,257	46,025	53,885	49,786	44,511	39,662	46,786	45,554	52,386	45,417
Shellfish and Other	155,000	186,179	203,155	185,553	98,540	165,384	165,168	151,875	111,601	97,605
Key Species	-	-	-	-	-	-	-	-	-	-
Crab	53,638	88,095	92,705	70,448	20,324	85,286	49,209	65,436	54,458	32,490
Pacific sardine	4,623	4,321	1,502	2,003	343	96	61	77	211	496
Rockfish	2,624	2,541	2,688	2,718	3,173	2,426	3,267	3,659	4,151	3,674
Sablefish	15,122	8,990	7,064	9,425	8,909	8,791	9,303	6,715	6,342	4,511
Salmon	5,095	12,887	22,947	12,126	8,115	5,213	4,792	7,678	16,480	13,895
Sea urchins	8,206	9,008	10,771	9,698	7,325	7,283	6,436	5,722	5,164	4,699
Shrimp	8,537	8,338	9,377	11,752	14,048	10,808	9,790	12,409	9,669	7,518
Spiny lobster	12,911	13,698	13,629	17,982	15,740	13,594	13,177	14,125	11,334	13,848
Squid	66,519	63,920	73,730	72,903	24,453	39,122	68,703	35,768	13,487	26,115
Swordfish	3,319	2,090	2,701	3,067	3,641	3,763	3,948	3,282	2,530	2,751

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	408,584	354,542	365,710	361,285	187,937	168,704	213,340	181,482	112,498	107,049
Finfish	92,452	89,087	75,651	85,414	79,407	43,686	47,975	71,784	57,963	44,965
Shellfish and Other	316,131	265,454	290,059	275,871	108,531	125,018	165,365	109,698	54,534	62,084
Key Species	-	-	-	-	-	-	-	-	-	-
Crab	22,157	27,548	33,441	20,837	5,361	28,013	14,176	20,293	17,064	9,648
Pacific sardine	61,098	50,803	15,594	17,133	3,751	954	953	720	4,095	6,314
Rockfish	1,478	1,472	1,547	1,421	1,408	946	2,166	3,055	3,658	3,676
Sablefish	5,657	3,928	3,311	4,132	4,068	3,853	3,930	3,271	3,183	2,819
Salmon	1,139	2,892	4,353	2,577	1,359	707	571	1,065	2,964	2,210
Sea urchins	11,573	12,124	13,967	12,507	8,496	5,889	4,204	3,245	2,390	1,897
Shrimp	8,223	7,208	9,527	9,920	9,524	4,818	5,210	7,082	4,298	1,583
Spiny lobster	752	877	756	943	768	666	700	872	825	726
Squid	267,895	215,470	230,189	229,485	81,144	81,773	137,594	73,145	27,228	45,085
Swordfish	1,344	888	1,175	1,265	1,376	1,387	1,511	1,357	929	1,024

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Crab	2.42	3.20	2.77	3.38	3.79	3.04	3.47	3.22	3.19	3.37
Pacific sardine	0.08	0.09	0.10	0.12	0.09	0.10	0.06	0.11	0.05	0.08
Rockfish	1.77	1.73	1.74	1.91	2.25	2.56	1.51	1.20	1.13	1.00
Sablefish	2.67	2.29	2.13	2.28	2.19	2.28	2.37	2.05	1.99	1.60
Salmon	4.47	4.46	5.27	4.71	5.97	7.37	8.39	7.21	5.56	6.29
Sea urchins	0.71	0.74	0.77	0.78	0.86	1.24	1.53	1.76	2.16	2.48
Shrimp	1.04	1.16	0.98	1.18	1.48	2.24	1.88	1.75	2.25	4.75
Spiny lobster	17.17	15.62	18.02	19.06	20.49	20.40	18.84	16.20	13.74	19.06
Squid	0.25	0.30	0.32	0.32	0.30	0.48	0.50	0.49	0.50	0.58
Swordfish	2.47	2.35	2.30	2.43	2.65	2.71	2.61	2.42	2.72	2.69

[1] The Pacific Region includes landings by Pacific at-sea processors. However, revenue from these landings are not included in the state tables.

2020 Economic Impacts of California Recreational Fishing (thousands of dollars; number of jobs) (Based on nine months of effort data; effort data unavailable for April, May and June 2020)[1,2]

Fishing Mode	Jobs	Sales	Income	Value Added
Total State Economic Impacts	5,083	718,123	176,349	301,622
Total Durable Expenditures	NA	NA	NA	NA
For-Hire	3,666	497,882	101,048	161,654
Private Boat	755	126,301	41,707	79,277
Shore	662	93,939	33,595	60,690

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
296,521	152,519	84,104	59,898

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	1,276	1,127	1,333	1,322	1,277	869	842	809	NA	NA
Coastal	863	722	1,024	964	893	591	576	551	NA	NA
Non-Coastal	230	190	222	264	263	182	189	174	NA	NA
Out-of-State	183	215	87	94	121	96	77	84	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	4,282	5,585	5,512	5,320	3,787	3,531	3,542	3,405	3,367	1,611
For-Hire	554	557	613	929	727	632	636	644	653	432
Private Boat	683	800	786	785	676	522	533	497	527	450
Shore	3,045	4,227	4,113	3,606	2,385	2,377	2,373	2,264	2,187	730

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[3,4,5,6,7]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Barracuda, bass and bonito	H	423	353	143	138	182	172	154	164	125	154
	R	744	789	1,166	1,224	1,166	1,626	1,452	1,189	1,271	950
Bluefin tuna	H	< 1	4	3	< 1	< 1	< 1	11	13	31	25
	R	< 1	< 1	< 1	0	< 1	< 1	< 1	< 1	< 1	<1
California and other scorpionfish	H	198	256	241	177	171	162	177	217	262	159
	R	166	217	260	163	192	209	272	340	300	193
California halibut and other flatfishes	H	539	488	638	602	336	290	290	306	304	205
	R	175	248	404	240	196	152	292	209	272	103
Lingcod	H	85	108	153	174	253	238	181	136	104	78
	R	129	156	145	130	138	149	100	78	64	40
Mackerels	H	1,111	835	582	927	1,684	1,011	1,419	1,187	830	344
	R	532	409	332	572	529	589	769	636	433	215
Rockfishes	H	2,181	2,615	3,004	2,528	2,810	2,515	2,673	2,615	3,149	2,087
	R	340	366	547	408	481	437	480	445	446	467
Salmon	H	50	124	116	75	38	38	62	101	89	40
	R	0	0	0	0	0	0	0	0	0	0
Surfperches	H	823	1,027	809	982	1,226	819	870	89	73	79
	R	714	984	819	998	912	520	700	80	75	104
Yellowfin tuna	H	1	6	4	108	156	28	15	20	24	9
	R	< 1	< 1	< 1	< 1	4	< 1	< 1	< 1	< 1	<1

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] For relevant tables on this page, California estimates on catch and effort (for-hire, private boat, man-made shore) is not available for April through June 2020 due to COVID-19 impacts. Beach/bank effort (shore mode) is only available for November and December 2020. Expenditure, impact, effort, and catch estimates are based on 9 months of data for 2020.
[3] Pacific recreational catch and effort estimates are based on multiple data sources. See Data Sources section.
[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[5] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.
[6] Rockfishes may not be equivalent to species with similar names listed in the commercial tables.
[7] Salmon harvest estimates exclude release mortality.

2019 California State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	966,224 (12.1%)	15,516,824 (11.7%)	1,077 (14.5%)	1,624 (14.2%)	3,053	0.51

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	187	151	157	164	169	174	202	181	NA
	Receipts	9,788	9,283	9,866	11,112	12,978	14,725	13,419	13,928	NA
Seafood sales, retail	Firms	209	236	218	227	221	228	230	233	NA
	Receipts	18,006	18,238	18,581	17,055	17,896	19,375	18,015	19,892	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	48	41	44	53	48	41	39	40	39
	Employees	1,842	1,668	1,871	1,799	1,661	1,549	1,596	1,729	1,691
	Payroll	60,411	52,977	57,603	60,762	59,829	64,374	61,611	71,039	63,041
Seafood Sales, Wholesale	Establishments	404	275	320	341	349	371	320	314	325
	Employees	3,505	3,441	3,671	3,912	4,170	4,250	4,573	4,575	4,978
	Payroll	149,302	173,959	181,698	175,927	201,903	212,079	224,800	226,906	242,973
Seafood sales, retail	Establishments	157	149	155	167	170	171	153	152	155
	Employees	1,088	1,043	1,119	1,124	1,208	1,272	998	941	1,003
	Payroll	25,168	24,221	26,702	28,044	28,437	31,722	24,860	25,657	27,976

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	108	120	113	108	103	104	97	94	95
	Employees	9,165	12,681	12,651	9,814	11,379	11,236	10,806	8,254	8,911
	Payroll	434,449	544,819	537,438	534,787	583,717	548,198	551,754	564,180	617,194
Deep Sea Freight Transportation	Establishments	51	45	34	43	56	45	38	40	42
	Employees	2,464	2,431	2,073	2,467	2,554	2,399	1,862	1,546	1,483
	Payroll	256,962	236,423	218,054	187,383	235,546	230,946	186,036	152,607	144,331
Deep Sea Passenger Transportation	Establishments	2	2	4	5	6	7	8	7	5
	Employees	ds	ds	ds	ds	ds	ds	ds	2,997	2,228
	Payroll	ds	ds	ds	ds	ds	ds	ds	181,389	171,856
Coastal and Great Lakes Freight Transportation	Establishments	21	22	24	30	34	32	35	27	24
	Employees	395	ds	ds	ds	851	759	620	689	748
	Payroll	24,708	ds	ds	ds	70,978	62,151	55,847	70,802	97,632
Port and Harbor Operations	Establishments	19	59	31	33	30	30	19	23	25
	Employees	508	ds	651	535	570	742	574	682	687
	Payroll	41,688	ds	52,401	33,599	40,887	46,859	37,533	46,548	48,497
Marine Cargo Handling	Establishments	71	38	64	64	67	70	61	59	57
	Employees	18,812	18,759	ds	ds	18,859	20,694	20,829	20,763	20,784
	Payroll	1,333,805	1,351,874	ds	ds	1,761,284	1,898,249	2,047,600	2,156,287	2,036,087
Navigational Services to Shipping	Establishments	45	35	36	37	38	37	43	43	44
	Employees	760	800	805	634	587	1,221	714	679	656
	Payroll	62,065	61,166	67,665	59,927	60,228	68,514	73,082	78,051	74,468
Marinas	Establishments	269	251	250	249	258	243	227	221	225
	Employees	2,401	2,237	2,199	2,332	2,439	2,432	2,387	2,457	2,439
	Payroll	82,958	71,777	72,737	79,840	84,427	86,510	91,703	92,541	95,350

[1] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[3] ds = Data are suppressed.

Tables | Oregon



2020 Economic Impacts of the Oregon Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	13,508	1,139,196	386,127	546,785	11,651	730,262	302,460	405,997
Commercial Harvesters	4,130	265,466	110,669	155,578	4,130	265,466	110,669	155,578
Seafood Processors and Dealers	1,573	160,353	61,585	80,465	1,228	125,162	48,070	62,806
Importers	991	328,006	52,569	99,990	NA	NA	NA	NA
Seafood Wholesalers and Distributors	536	76,960	26,107	35,017	343	49,274	16,715	22,420
Retail	6,278	308,411	135,196	175,735	5,950	290,359	127,006	165,194

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	146,485	126,561	177,423	156,307	116,072	148,564	147,112	174,694	165,020	154,883
Finfish	74,984	70,707	78,662	76,372	58,988	62,688	69,743	64,655	66,274	47,073
Shellfish and Other	71,501	55,854	98,761	79,935	57,084	85,876	77,369	110,039	98,746	107,810
Key Species	-	-	-	-	-	-	-	-	-	-
Albacore tuna	18,766	15,168	16,085	11,023	9,221	12,478	10,777	9,716	10,856	7,053
Crab	44,690	29,172	71,208	48,147	12,107	55,731	58,723	74,522	67,930	72,809
Flatfish	7,920	8,276	10,837	9,788	11,039	12,209	11,702	10,475	9,721	7,720
Pacific hake (whiting)	16,518	14,611	20,405	18,274	7,146	8,694	16,385	16,435	21,719	15,218
Pacific sardine	3,192	8,979	6,299	3,522	813	0	0	3	4	0
Rockfish	1,694	1,819	2,052	2,518	3,035	2,679	6,338	7,757	7,814	5,492
Sablefish	17,351	11,530	7,595	8,076	12,767	15,062	15,547	11,916	9,422	4,711
Salmon	6,726	6,943	12,417	20,075	11,842	8,265	5,531	5,675	4,153	5,020
Shrimp	24,607	24,749	24,153	29,367	40,413	25,093	12,745	26,909	19,940	22,685
Sole	6,314	6,808	9,329	8,252	9,396	10,539	10,192	9,236	8,382	6,477

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	285,670	306,779	349,166	300,160	203,610	226,346	302,346	312,820	334,942	344,421
Finfish	216,975	246,185	271,639	233,546	144,038	158,314	257,334	244,320	280,483	268,539
Shellfish and Other	68,695	60,594	77,527	66,614	59,572	68,032	45,012	68,501	54,458	75,882
Key Species	-	-	-	-	-	-	-	-	-	-
Albacore tuna	9,682	9,938	10,209	8,769	7,585	7,235	4,732	5,809	6,571	4,419
Crab	17,260	8,691	26,034	11,918	2,294	15,714	19,015	23,135	19,035	19,893
Flatfish	16,691	16,029	19,708	16,731	17,622	19,851	19,319	16,238	14,594	11,479
Pacific hake (whiting)	151,464	107,652	167,499	168,226	94,907	113,035	201,499	185,554	222,201	219,617
Pacific sardine	24,302	94,062	57,956	17,171	4,699	9	3	21	28	1
Rockfish	2,395	2,531	3,096	4,199	5,643	4,969	18,596	25,550	24,412	23,283
Sablefish	5,081	4,745	3,844	3,297	5,001	5,526	5,556	5,678	5,837	4,159
Salmon	2,410	1,922	3,503	6,379	3,142	1,821	1,185	957	995	1,508
Shrimp	48,314	49,150	47,629	52,010	53,516	35,528	23,061	35,872	26,852	43,142
Sole	12,548	12,290	15,641	13,752	14,578	17,272	16,869	14,731	13,459	10,647

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Albacore tuna	1.94	1.53	1.58	1.26	1.22	1.72	2.28	1.67	1.65	1.60
Crab	2.59	3.36	2.74	4.04	5.28	3.55	3.09	3.22	3.57	3.66
Flatfish	0.47	0.52	0.55	0.59	0.63	0.62	0.61	0.65	0.67	0.67
Pacific hake (whiting)	0.11	0.14	0.12	0.11	0.08	0.08	0.08	0.09	0.10	0.07
Pacific sardine	0.13	0.10	0.11	0.21	0.17	0.04	0.09	0.15	0.14	0.00
Rockfish	0.71	0.72	0.66	0.60	0.54	0.54	0.34	0.30	0.32	0.24
Sablefish	3.42	2.43	1.98	2.45	2.55	2.73	2.80	2.10	1.61	1.13
Salmon	2.79	3.61	3.54	3.15	3.77	4.54	4.67	5.93	4.18	3.33
Shrimp	0.51	0.50	0.51	0.56	0.76	0.71	0.55	0.75	0.74	0.53
Sole	0.50	0.55	0.60	0.60	0.64	0.61	0.60	0.63	0.62	0.61

[1] The Pacific Region includes landings by Pacific at-sea processors. However, revenue from these landings are not included in the state tables.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Oregon Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
Total State Economic Impacts	569	59,049	22,525	36,242
Total Durable Expenditures	NA	NA	NA	NA
For-Hire	300	29,810	10,481	17,656
Private Boat	269	29,240	12,044	18,586
Shore	NA	NA	NA	NA

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
45,148	19,362	25,787	NA

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	222	230	240	245	241	230	232	240	NA	NA
Coastal	82	86	90	92	90	86	87	90	NA	NA
Non-Coastal	125	129	134	137	135	129	130	134	NA	NA
Out-of-State	15	15	16	16	16	15	15	16	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	159	187	214	235	214	179	187	210	238	195
For-Hire	45	51	58	61	65	57	59	64	62	47
Private Boat	113	135	157	173	150	122	127	146	176	147
Shore	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Albacore tuna	H	29	63	22	48	35	37	16	26	103	5
	R	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0
Black rockfish	H	179	192	281	314	414	382	383	254	287	303
	R	18	16	23	24	43	33	63	39	41	53
Cabezon	H	6	5	4	3	3	4	8	4	5	4
	R	5	5	7	4	4	5	7	13	14	12
Chinook salmon	H	10	38	60	37	19	8	9	5	7	7
	R	9	8	9	5	2	1	2	6	5	2
Coho salmon	H	19	16	15	100	28	8	21	26	66	21
	R	22	17	23	69	27	6	20	42	79	27
Greenlings (excluding lingcod)	H	11	10	12	5	5	4	4	4	3	4
	R	4	4	5	2	3	1	1	2	2	2
Lingcod	H	33	47	67	51	62	47	61	68	49	53
	R	33	30	34	20	30	31	28	29	27	35
Other flatfishes	H	< 1	< 1	2	1	3	3	17	4	4	6
	R	< 1	< 1	1	< 1	2	2	2	1	1	2
Other rockfish	H	59	74	65	49	78	47	96	118	112	123
	R	28	30	35	31	56	38	50	39	46	63
Pacific halibut	H	NA	NA	NA	NA	NA	NA	NA	NA	9	12
	R	NA	NA	NA	NA	NA	NA	NA	NA	0	0

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Pacific recreational catch and effort estimates are based on multiple data sources. See Data Sources section.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Oregon State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	119,074 (1.5%)	1,643,425 (1.2%)	87.5 (1.2%)	140 (1.2%)	247	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	16	14	11	11	12	14	12	14	NA
	Receipts	467	346	319	484	1,088	1,776	699	1,583	NA
Seafood sales, retail	Firms	16	11	ds	16	15	14	11	11	NA
	Receipts	1,896	1,600	ds	1,036	841	1,379	1,317	1,196	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	22	18	19	20	20	20	18	19	25
	Employees	805	934	907	980	916	989	1,149	1,216	1,110
	Payroll	32,438	31,970	37,265	39,290	41,181	42,832	45,695	50,114	48,817
Seafood Sales, Wholesale	Establishments	27	21	19	22	24	27	20	20	20
	Employees	ds	180	189	192	196	187	194	191	160
	Payroll	ds	7,602	8,065	8,601	9,121	9,892	10,118	9,884	8,855
Seafood sales, retail	Establishments	20	18	20	23	25	23	22	19	21
	Employees	163	126	147	170	181	174	147	157	181
	Payroll	3,613	2,851	4,238	4,440	4,951	5,239	4,420	4,961	5,622

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	34	33	32	30	29	26	27	28	26
	Employees	1,179	1,504	1,406	ds	1,506	1,278	1,153	936	982
	Payroll	55,068	77,718	79,913	ds	94,956	83,079	88,198	72,713	81,416
Deep Sea Freight Transportation	Establishments	3	3	3	2	3	2	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	8	8	7	8	8	12	11	10	10
	Employees	ds	ds	ds	ds	437	506	501	378	392
	Payroll	ds	ds	ds	ds	40,746	47,896	47,693	43,148	44,015
Port and Harbor Operations	Establishments	3	10	5	5	5	5	3	5	5
	Employees	ds	90	ds	ds	49	45	29	31	32
	Payroll	ds	6,512	ds	ds	3,437	2,686	2,061	2,963	3,016
Marine Cargo Handling	Establishments	13	5	8	7	7	6	10	10	9
	Employees	ds	ds	ds	ds	ds	ds	ds	1,284	1,310
	Payroll	ds	ds	ds	ds	ds	ds	ds	98,357	98,294
Navigational Services to Shipping	Establishments	18	20	15	15	15	17	17	18	19
	Employees	152	176	81	67	74	69	109	206	131
	Payroll	9,592	12,219	6,534	3,958	3,998	4,789	5,566	17,660	17,875
Marinas	Establishments	33	32	34	34	36	35	31	33	32
	Employees	102	119	104	113	119	137	137	134	137
	Payroll	2,382	3,034	3,148	3,584	3,643	3,550	4,235	4,281	4,491

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Washington



2020 Economic Impacts of the Washington Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	62,157	9,718,293	2,492,442	3,846,751	17,368	1,363,755	564,325	764,813
Commercial Harvesters	5,332	522,741	224,381	315,684	5,332	522,741	224,381	315,684
Seafood Processors and Dealers	17,837	2,034,740	764,218	1,011,326	1,999	228,036	85,647	113,341
Importers	17,210	5,698,103	913,230	1,737,031	NA	NA	NA	NA
Seafood Wholesalers and Distributors	2,697	415,884	139,338	190,103	651	100,430	33,648	45,907
Retail	19,081	1,046,825	451,274	592,607	9,386	512,548	220,649	289,881

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	366,839	339,927	384,251	370,015	366,379	381,391	380,476	372,724	351,232	262,621
Finfish	90,730	86,056	92,737	81,744	63,819	71,220	80,166	61,055	50,484	33,203
Shellfish and Other	276,108	253,871	291,514	288,271	302,560	310,171	300,310	311,668	300,748	229,417
Key Species	-	-	-	-	-	-	-	-	-	-
Albacore tuna	22,253	28,464	24,745	21,177	19,961	24,716	23,494	14,749	15,799	16,093
Clams	327	263	579	560	114	NA	NA	474	353	416
Crab	83,991	60,599	86,517	80,509	72,858	89,168	101,391	97,886	85,015	75,878
Pacific hake (whiting)	7,190	5,882	7,473	5,431	2,563	4,659	8,052	NA	7,904	NA
Pacific halibut	2,333	2,665	2,295	2,531	2,624	3,210	3,303	3,095	3,696	2,022
Rockfish	912	1,355	812	713	850	542	642	1,265	1,773	983
Sablefish	12,378	7,813	4,764	6,988	7,003	7,779	9,161	6,533	4,922	2,304
Salmon	41,753	28,035	41,396	38,388	27,270	26,657	31,984	32,368	13,880	10,980
Shrimp	7,140	6,986	8,664	19,706	32,820	12,182	7,156	9,805	11,291	11,617
Sole	1,290	1,471	1,753	976	1,037	1,227	1,496	1,572	1,321	227

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	225,322	229,679	276,443	202,559	168,706	188,307	234,958	213,309	193,322	164,433
Finfish	140,985	170,468	204,246	123,223	82,064	124,752	174,833	42,559	136,680	28,162
Shellfish and Other	84,337	59,210	72,198	79,336	86,641	63,555	60,126	170,750	56,642	136,272
Key Species	-	-	-	-	-	-	-	-	-	-
Albacore tuna	13,259	19,353	17,588	18,088	17,196	15,515	11,453	9,176	9,453	10,817
Clams	82	59	109	124	30	NA	NA	84	61	81
Crab	27,264	17,041	28,120	19,423	15,140	22,841	27,527	24,495	21,191	18,353
Pacific hake (whiting)	76,017	38,656	59,918	49,655	32,977	82,078	131,038	NA	104,541	NA
Pacific halibut	527	615	546	538	557	656	768	896	1,114	695
Rockfish	1,806	2,584	1,633	1,455	1,810	1,327	2,638	6,777	7,261	7,023
Sablefish	3,423	3,014	1,970	2,328	2,326	2,544	2,728	2,638	2,681	1,711
Salmon	38,673	19,895	49,352	28,078	21,479	16,374	20,841	17,847	7,705	6,433
Shrimp	10,202	10,048	14,295	31,450	42,048	14,911	7,505	9,314	10,303	15,018
Sole	2,164	2,384	2,643	1,399	1,458	1,863	2,295	2,066	1,633	284

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Albacore tuna	1.68	1.47	1.41	1.17	1.16	1.59	2.05	1.61	1.67	1.49
Clams	4.01	4.47	5.31	4.53	3.84	NA	NA	5.64	5.83	5.14
Crab	3.08	3.56	3.08	4.15	4.81	3.90	3.68	4.00	4.01	4.13
Pacific hake (whiting)	0.09	0.15	0.12	0.11	0.08	0.06	0.06	NA	0.08	NA
Pacific halibut	4.43	4.34	4.20	4.70	4.71	4.90	4.30	3.46	3.32	2.91
Rockfish	0.51	0.52	0.50	0.49	0.47	0.41	0.24	0.19	0.24	0.14
Sablefish	3.62	2.59	2.42	3.00	3.01	3.06	3.36	2.48	1.84	1.35
Salmon	1.08	1.41	0.84	1.37	1.27	1.63	1.53	1.81	1.80	1.71
Shrimp	0.70	0.70	0.61	0.63	0.78	0.82	0.95	1.05	1.10	0.77
Sole	0.60	0.62	0.66	0.70	0.71	0.66	0.65	0.76	0.81	0.80

[1] The Pacific Region includes landings by Pacific at-sea processors. However, revenue from these landings are not included in the state tables.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Washington Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
Total State Economic Impacts	1,255	180,873	59,645	108,144
Total Durable Expenditures	NA	NA	NA	NA
For-Hire	294	32,445	11,186	19,319
Private Boat	961	148,429	48,459	88,825
Shore	NA	NA	NA	NA

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
131,476	20,156	111,321	NA

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	296	296	318	301	303	210	358	225	NA	NA
Coastal	248	248	268	251	253	172	303	186	NA	NA
Non-Coastal	27	27	28	28	28	21	31	22	NA	NA
Out-of-State	21	21	22	22	22	17	24	17	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	806	803	889	807	675	451	1,016	517	617	496
For-Hire	74	73	75	86	56	62	81	62	70	40
Private Boat	732	730	814	722	619	389	935	455	547	456
Shore	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Albacore tuna	H	15	50	54	75	79	47	30	25	88	27
	R	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Black rockfish	H	192	243	259	287	311	316	216	235	217	111
	R	21	22	21	30	23	21	29	21	18	8
Cabezon	H	5	3	3	3	2	2	3	3	6	3
	R	3	2	2	3	2	2	2	2	3	2
Chinook salmon	H	95	105	120	121	115	59	91	59	58	28
	R	148	111	153	103	132	81	178	124	76	90
Coho salmon	H	102	55	165	216	190	19	64	81	124	82
	R	106	91	148	133	175	33	80	95	146	89
Greenlings (excluding lingcod)	H	15	20	15	33	9	13	6	5	4	5
	R	11	10	8	14	6	5	3	5	4	4
Lingcod	H	41	45	45	48	43	55	54	48	54	38
	R	68	44	35	37	32	26	15	18	29	24
Other flatfishes	H	96	73	94	54	138	105	44	59	77	94
	R	66	55	62	51	31	45	25	34	30	44
Other rockfish	H	51	26	29	37	31	42	49	38	61	57
	R	34	36	39	42	35	36	30	39	42	37
Pacific halibut	H	10	14	15	16	14	15	12	12	14	11
	R	3	3	3	4	4	4	2	3	3	2

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Pacific recreational catch and effort estimates are based on multiple data sources. See Data Sources section.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Washington State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	195,105 (2.5%)	2,898,378 (2.2%)	192 (2.6%)	310 (2.7%)	598	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	37	42	42	51	59	65	48	56	NA
	Receipts	3,859	4,377	4,094	5,270	3,555	4,697	3,297	5,096	NA
Seafood sales, retail	Firms	34	42	41	36	35	33	36	29	NA
	Receipts	2,370	1,871	3,017	2,559	2,071	1,991	2,213	2,049	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	22	18	19	20	20	20	18	19	25
	Employees	805	934	907	980	916	989	1,149	1,216	1,110
	Payroll	32,438	31,970	37,265	39,290	41,181	42,832	45,695	50,114	48,817
Seafood Sales, Wholesale	Establishments	27	21	19	22	24	27	20	20	20
	Employees	ds	180	189	192	196	187	194	191	160
	Payroll	ds	7,602	8,065	8,601	9,121	9,892	10,118	9,884	8,855
Seafood sales, retail	Establishments	20	18	20	23	25	23	22	19	21
	Employees	163	126	147	170	181	174	147	157	181
	Payroll	3,613	2,851	4,238	4,440	4,951	5,239	4,420	4,961	5,622

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	135	141	138	131	143	129	135	136	125
	Employees	5,232	5,294	5,387	5,060	4,653	4,930	5,213	4,987	4,879
	Payroll	276,402	290,400	273,825	262,730	265,732	269,879	296,499	283,128	281,168
Deep Sea Freight Transportation	Establishments	14	12	8	8	8	5	6	9	7
	Employees	ds	ds	200	204	194	170	ds	208	204
	Payroll	ds	14,014	14,892	14,991	13,981	13,822	ds	28,617	31,582
Deep Sea Passenger Transportation	Establishments	2	2	5	4	6	4	4	4	5
	Employees	ds	ds	ds	1,412	1,277	1,151	919	1,012	913
	Payroll	ds	ds	ds	54,346	73,134	72,462	59,817	62,226	65,535
Coastal and Great Lakes Freight Transportation	Establishments	28	28	35	38	35	41	39	41	36
	Employees	1,684	1,557	2,186	2,020	1,879	1,956	1,533	1,734	1,636
	Payroll	132,068	126,401	170,003	163,075	162,635	163,240	148,497	167,788	155,982
Port and Harbor Operations	Establishments	9	48	28	27	23	23	13	12	12
	Employees	75	1,509	181	304	250	226	128	159	147
	Payroll	4,937	85,042	11,894	16,449	14,278	14,169	9,911	15,051	13,909
Marine Cargo Handling	Establishments	32	13	30	29	30	30	35	36	36
	Employees	3,910	ds	ds	ds	3,966	4,143	4,241	4,128	4,355
	Payroll	323,286	ds	ds	ds	424,469	436,086	469,911	481,422	488,241
Navigational Services to Shipping	Establishments	78	72	73	71	68	76	81	77	76
	Employees	1,207	ds	ds	1,297	1,176	1,175	1,292	1,293	1,182
	Payroll	94,781	ds	ds	101,251	88,363	88,045	116,801	127,389	116,546
Marinas	Establishments	114	100	110	106	102	97	101	103	99
	Employees	517	479	529	530	588	525	559	601	584
	Payroll	18,364	18,038	18,914	20,348	21,944	21,809	22,021	23,655	24,600

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Western Pacific Region

- Hawai‘i



Fishermen working together to reel in a catch.
Photo: NOAA Fisheries

MANAGEMENT CONTEXT

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

Western Pacific Fishery Ecosystem Plans

- American Samoa
- Hawai'i
- Mariana Archipelago (Guam and the CNMI)
- Pacific Remote Island Areas
- Western Pacific Pelagics

Six of the stocks or stock complexes covered in these FEPs were listed as overfished in 2020: Pacific bluefin tuna (Pacific stock); striped marlin (Western/Central Pacific stock); seamount groundfish complex (Hancock seamount stock); American Samoa Bottomfish Multi-species Complex (added in 2020); Guam Bottomfish Mul ti-species Complex (added in 2020); and the oceanic whitetip shark – Central and Western Pacific (status previously unknown).

Seven stocks or stock complexes were subject to overfishing in 2020: Pacific bluefin tuna (Pacific stock); swordfish (Eastern Pacific stock); yellowfin tuna (Eastern Pacific stock); striped marlin (Western/Central Pacific stock); American Samoa Bottomfish Multi-species Complex (added in 2020); oceanic whitetip shark – Central and Western Pacific (status previously unknown); and the silky shark – Central and Western Pacific (status previously unknown).[1]

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

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

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

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

COMMERCIAL FISHERIES — WESTERN PACIFIC (HAWAI'I) REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing

[1] The bluefin tuna, yellowfin tuna, swordfish and striped marlin stocks cited here as overfished and/or experiencing overfishing are fished by U.S. and international fleets under a formal international agreement.

trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key Western Pacific (Hawai'i) Commercial Species

- Dolphinfish (*mahimahi*)
- Lobsters (*ula*)
- Marlin (*a'u*)
- Moonfish (*opah*)
- Pomfrets (*monchong*)
- Scad (*opelu*)
- Snappers
- Swordfish (*mekajiki*)
- Tunas (*aku*)
- Wahoo (*ono*)

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[2]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry in Hawai'i supported 5,611 full- and part-time jobs and generated $557 million in sales, $166.4 million in income, and $245.5 million in value-added impacts. Importers generated the largest sales impacts ($224.3 million) while commercial harvesters generated the largest value-added impacts ($76.7 million), income impacts ($53.4 million), and employment impacts (2,448 jobs).

Landings Revenue

In 2020, landings revenue in Hawai'i totaled $83.9 million, an 8% decrease from 2011 (a 21% decrease in real terms after adjusting for inflation) and a 24% decrease from 2019.

Finfish landings revenue accounted for 98% of all landings revenue. In 2020, tunas (aku) ($67.9 million), swordfish (*mekajiki*) ($3 million), and dolphinfish (*mahimahi*) ($1.9 million) had the highest landings revenue in this region. Together, these top three species accounted for 87% of total landings revenue.

From 2011 to 2020, scad (*opelu*) (7%, -8% in real terms), tunas (*aku*) (2%, -12% in real terms), and wahoo (ono) (1%, -13% in real terms) had the largest increases, while lobsters (ula) (-86%, -87% in real terms), dolphinfish (*mahimahi*) (-55%, -61% in real terms), and swordfish (*mekajiki*) (-55%, -61% in real terms) had the largest decreases. From 2019 to 2020, scad (*opelu*) (2%) had the largest increases, while lobsters (*ula*) (-53%), pomfrets (*monchong*) (-50%), and wahoo (*ono*) (-50%) had the largest decreases.

[2] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]

Commercial Revenue: Largest Increases

From 2011:
- Scad (*opelu*) (7%, -8% in real terms)
- Tunas (*aku*) (2%, -12% in real terms)
- Wahoo (*ono*) (1%, -13% in real terms)

From 2019:
- Scad (*opelu*) (2%)

Commercial Revenue: Largest Decreases

From 2011:
- Lobsters (*ula*) (-86%, -87% in real terms)
- Dolphinfish (*mahimahi*) (-55%, -61% in real terms)
- Swordfish (*mekajiki*) (-55%, -61% in real terms)

From 2019:
- Lobsters (*ula*) (-53%)
- Pomfrets (*monchong*) (-50%)
- Wahoo (*ono*) (-50%)

Commercial Landings: Largest Increases

From 2011:
- Wahoo (*ono*) (45%)
- Pomfrets (*monchong*) (23%)
- Tunas (*aku*) (11%)

From 2019:
- Scad (*opelu*) (2%)

Commercial Landings: Largest Decreases

From 2011:
- Lobsters (*ula*) (-84%)
- Swordfish (*mekajiki*) (-69%)
- Dolphinfish (*mahimahi*) (-62%)

From 2019:
- Lobsters (*ula*) (-54%)
- Marlin (*a'u*) (-48%)
- Wahoo (*ono*) (-46%)

Landings

In 2020, commercial fishermen in Hawai'i landed over 27.3 million pounds of finfish and shellfish. This represents a 7% decrease from 2011 and a 21% decrease from 2019. Tunas (*aku*) contributed the highest landings volume in the region, accounting for 76% of total landing weight.

From 2011 to 2020, wahoo (*ono*) (45%), pomfrets (*monchong*) (23%), and tunas (*aku*) (11%) had the largest increases, while lobsters (*ula*) (-84%), swordfish (*mekajiki*) (-69%), and dolphinfish (*mahimahi*) (-62%) had the largest decreases. From 2019 to 2020, scad (*opelu*) (2%) had the largest increases, while lobsters (*ula*) (-54%), marlin (*a'u*) (-48%), and wahoo (*ono*) (-46%) had the largest decreases.

Prices

In 2020, lobsters (*ula*) ($9.48 per pound) received the highest ex-vessel price in the region. Landings of marlin (*a'u*) ($1.14 per pound) had the lowest ex-vessel price. From 2011 to 2020, swordfish (*mekajiki*) (43%, 23% in real terms), dolphinfish (*mahimahi*) (19%, 2% in real terms), and snappers (11%, -5% in real terms) had the largest increases, while wahoo (*ono*) (-30%, -40% in real terms), pomfrets (*monchong*) (-23%, -34% in real terms), and marlin (*a'u*) (-16%, -27% in real terms) had the largest decreases. From 2019 to 2020, marlin (*a'u*) (61%), swordfish (*mekajiki*) (44%), and lobsters (*ula*) (3%) had the largest increases, while pomfrets (*monchong*) (-26%), tunas (*aku*) (-10%), and snappers (-7%) had the largest decreases.

RECREATIONAL FISHERIES — WESTERN PACIFIC (HAWAI'I) REGION

In the Western Pacific (Hawai'i) Region, recreational fishing includes all non-commercial fishing, which is fishing that does not meet the definition of commercial fishing in the Magnuson-Stevens Fishery Conservation and Management Act, and includes, but is not limited to, sustenance, subsistence, traditional indigenous, and recreational fishing.[3] This recreational fisheries section

[3] For a definition of non-commercial fishing see the Electronic Code of Federal Regulations. [Available at: https://www.ecfr.gov/current/title-50/chapter-VI/part-665/subpart-A/section-665.12.].

reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[4]

Key Western Pacific (Hawai'i) Region Recreational Species[5]

- Bigeye (*akule*) and mackerel (*opelu*) scad
- Blue marlin (*a'u*)
- Deep 7 bottomfish[6]
- Dolphinfish (*mahimahi*)
- Goatfishes
- Jacks (trevallys and other jacks)[7]
- Other snappers[8]
- Skipjack tuna (*aku*)
- Wahoo (*ono*)
- Yellowfin tuna (*'ahi*)

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the Western Pacific (Hawai'i) Region is based on spending by recreational anglers.[9] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

In 2020, economic impacts from recreational fishing activities in Hawai'i generated 3,292 jobs, $464.9 million in sales, $143.5 million in income, and $257.8 million in value-added impacts.

Data for the for-hire mode is not available in Hawai'i. Of the two fishing trip modes, shore fishing trips had the greatest economic impact, accounting for 67% of employment impacts. Trip expenditures for shore and private boat modes totaled $383.7 million, with a large portion of these trip expenditures coming from trips in the shore (62%) mode. Data for durable expenditures is not available due to unavailable participation estimates.

Participation

Angler participation data is not available for Hawai'i.

Fishing Trips

In 2020, recreational fishermen took 3.9 million saltwater fishing trips in the state of Hawai'i. This number represented a 182% increase from 2011 and a 12% increase from 2019. Of all fishing trips, 81% were taken from the shore sector.

Harvest and Release Trends

Of the Western Pacific (Hawai'i) Region's key species and species groups, bigeye (*akule*) and mackerel (*opelu*) scad (3.7 million fish), jacks (trevallys and other jacks) (639,598 fish), and goatfishes (530,290 fish) were most frequently caught by recreational fishermen. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

[4] Data for this state is from MRIP estimates produced using pre-calibration methods.
[5] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[6] Binghams snapper, Hawaiian grouper, longtail snapper, pink snapper, squirrelfish snapper, and von siebolds snapper.
[7] African pompano, bigeye trevally, black jack, black trevally, bluefin trevally, giant trevally, greater amberjack, island jack, jack family, and jack genus.
[8] Blacktail snapper, bluestripe snapper, green jobfish, ironjaw snapper, smalltooth jobfish, snapper family, and snapper genus.
[9] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

From 2011 to 2020, blue marlin (*a'u*) (579%), wahoo (*ono*) (443%), and deep 7 bottomfish (345%) had the largest increases. There were no percent decreases. From 2019 to 2020, other snappers (28%) and blue marlin (*a'u*) (14%) had the largest increases, while deep 7 bottomfish (-55%), yellowfin tuna (*'ahi*) (-25%), and skipjack tuna (*aku*) (-11%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Blue marlin (*a'u*) (579%)
- Wahoo (*ono*) (443%)
- Deep 7 bottomfish (345%)

From 2019:
- Other snappers (28%)
- Blue marlin (*a'u*) (14%)

Harvest and Release: Largest Decreases

From 2011:
- There were no percent decreases.

From 2019:
- Deep 7 bottomfish (-55%)
- Yellowfin tuna (*'ahi*) (-25%)
- Skipjack tuna (*aku*) (-11%)

MARINE ECONOMY — WESTERN PACIFIC (HAWAI'I) REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[10]

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing sector in a state's economy relative to the size of the commercial fishing sector in the national economy.[11] The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

Hawai'i had a CFLQ value of 3.81.

In 2019, 32,889 employer establishments operated throughout Hawai'i (including marine and non-marine related establishments). These establishments employed 553,206 workers and had a total annual payroll of $25.8 billion. The gross state product of Hawai'i was approximately $91.8 billion in 2019.

Seafood Sales and Processing[12]

Seafood Product Preparation and Packaging: In 2019, Hawai'i had 3 employer firms in the seafood product preparation and packaging sector (a 200% increase from 2011).

Retail Seafood Sales: In 2019, Hawai'i had 22 employer firms in the seafood retail sector (a 12% decrease from 2011).

Wholesale Seafood Sales: There were 30 employer firms in the seafood wholesale sector in Hawai'i in 2019 (a 25% decrease from 2011).

Transportation Support and Marine Operations

Data for the transportation support and marine operations sectors in Hawai'i economy were largely suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the state's economy. For example, in 2019, the marine cargo handling sector in Hawai'i accounted for $100.8 million in payroll.

[10] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).
[11] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.
[12] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently, this information is not available from the Census Bureau for 2019.

Tables | Hawai‘i



2020 Economic Impacts of the Hawai'i Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	5,611	557,016	166,427	245,482	4,389	282,549	110,693	151,349
Commercial Harvesters	2,448	145,929	53,402	76,677	2,448	145,929	53,402	76,677
Seafood Processors and Dealers	484	50,658	20,053	25,862	283	29,626	11,727	15,125
Importers	678	224,334	35,954	68,387	NA	NA	NA	NA
Seafood Wholesalers and Distributors	288	32,669	11,458	15,242	137	15,482	5,430	7,223
Retail	1,712	103,426	45,561	59,314	1,521	91,512	40,134	52,324

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	91,611	112,343	108,031	101,313	103,424	118,182	116,423	119,158	109,751	83,855
Finfish	90,074	110,326	105,775	98,975	101,933	115,814	114,354	116,988	108,145	82,393
Shellfish and Other	1,537	2,018	2,256	2,338	1,491	2,368	2,069	2,171	1,606	1,461
Key Species	-	-	-	-	-	-	-	-	-	-
Dolphinfish (*mahimahi*)	4,314	5,309	4,130	4,412	3,427	4,512	3,451	3,493	3,454	1,926
Lobsters (*ula*)	104	98	95	105	NA	28	21	14	32	15
Marlin (*a'u*)	1,238	1,455	1,467	1,607	1,639	2,097	2,120	1,617	1,333	1,109
Moonfish (*opah*)	2,853	3,163	3,203	2,910	3,151	NA	3,203	3,301	3,121	NA
Pomfrets (*monchong*)	1,449	2,097	2,576	2,466	2,874	3,502	3,287	2,855	2,734	1,367
Scad (*opelu*)	964	1,181	1,147	1,128	108	1,173	996	998	1,009	1,029
Snappers	1,425	1,750	2,024	2,250	1,136	2,302	2,645	1,824	1,762	1,193
Swordfish (*mekajiki*)	6,669	6,693	4,493	5,405	4,629	4,813	5,823	3,699	3,805	2,977
Tunas (*aku*)	66,628	83,298	81,819	73,657	81,576	88,467	87,285	94,223	85,537	67,932
Wahoo (*ono*)	1,806	2,330	2,375	2,800	2,328	3,279	3,066	3,040	3,638	1,829

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	29,295	31,053	32,453	33,480	34,625	35,055	37,166	35,497	34,684	27,264
Finfish	28,278	30,271	31,338	32,269	33,425	33,966	36,076	34,169	33,214	26,301
Shellfish and Other	1,017	783	1,116	1,211	1,200	1,090	1,090	1,328	1,471	963
Key Species	-	-	-	-	-	-	-	-	-	-
Dolphinfish (*mahimahi*)	1,423	1,746	1,515	1,689	1,132	1,193	954	1,008	943	535
Lobsters (*ula*)	10	8	9	10	NA	3	3	2	3	2
Marlin (*a'u*)	916	800	948	1,220	1,440	1,302	1,544	1,329	1,888	975
Moonfish (*opah*)	1,564	1,549	2,072	2,004	2,067	NA	1,812	2,327	1,614	NA
Pomfrets (*monchong*)	427	731	1,142	1,243	1,339	1,166	980	930	781	525
Scad (*opelu*)	323	383	361	356	36	368	306	299	313	320
Snappers	272	311	363	376	181	387	427	271	283	206
Swordfish (*mekajiki*)	2,592	2,381	1,674	2,480	2,044	1,640	2,561	1,744	1,491	810
Tunas (*aku*)	18,519	20,147	20,900	20,296	22,932	23,507	25,028	23,913	23,271	20,609
Wahoo (*ono*)	564	652	744	1,056	993	1,144	973	1,148	1,523	817

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dolphinfish (*mahimahi*)	3.03	3.04	2.73	2.61	3.03	3.78	3.62	3.46	3.66	3.60
Lobsters (*ula*)	10.39	11.84	10.71	10.21	NA	8.56	6.48	8.97	9.22	9.48
Marlin (*a'u*)	1.35	1.82	1.55	1.32	1.14	1.61	1.37	1.22	0.71	1.14
Moonfish (*opah*)	1.82	2.04	1.55	1.45	1.52	NA	1.77	1.42	1.93	NA
Pomfrets (*monchong*)	3.39	2.87	2.25	1.98	2.15	3.00	3.35	3.07	3.50	2.61
Scad (*opelu*)	2.98	3.08	3.18	3.17	2.99	3.19	3.25	3.34	3.23	3.21
Snappers	5.24	5.63	5.57	5.99	6.27	5.95	6.20	6.73	6.24	5.79
Swordfish (*mekajiki*)	2.57	2.81	2.68	2.18	2.26	2.93	2.27	2.12	2.55	3.68
Tunas (*aku*)	3.60	4.13	3.91	3.63	3.56	3.76	3.49	3.94	3.68	3.30
Wahoo (*ono*)	3.20	3.57	3.19	2.65	2.34	2.87	3.15	2.65	2.39	2.24

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Hawai'i Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	NA	NA	NA	NA
Private Boat	1,098	178,013	49,963	92,098
Shore	2,194	286,907	93,574	165,743
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	3,292	464,921	143,536	257,841

2020 Angler Trip Expenditures by Fishing Mode (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
383,724	NA	147,689	236,035

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	1,382	1,519	1,513	1,374	1,431	1,024	1,280	3,421	3,479	3,902
For-Hire	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Private Boat	224	325	297	324	273	235	261	670	632	744
Shore	1,158	1,195	1,216	1,051	1,158	790	1,019	2,750	2,847	3,158

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bigeye (*akule*) and mackerel (*opelu*) scad	H	662	608	889	899	1,245	690	1,172	4,043	5,232	3,719
	R	0	0	2	0	< 1	4	7	2	8	6
Blue marlin (*a'u*)	H	2	3	4	3	5	2	4	13	10	10
	R	0	0	0	< 1	0	0	< 1	5	< 1	1
Deep 7 bottomfish	H	< 1	1	2	2	< 1	< 1		2	3	1
	R	0	0	0	0	0	0		0	0	0
Dolphinfish (*mahimahi*)	H	63	163	94	92	78	44	47	216	125	117
	R	0	0	0	< 1	0	< 1	< 1	2	2	< 1
Goatfishes	H	173	158	873	537	1,052	246	420	2,037	1,167	491
	R	13	13	3	22	15	16	18	69	34	39
Jacks (trevallys and other jacks)	H	99	110	144	156	170	112	115	202	310	257
	R	59	129	126	263	319	122	154	413	395	383
Other snappers	H	113	195	152	220	119	119	126	336	252	322
	R	14	15	10	3	9	14	10	19	29	38
Skipjack tuna (*aku*)	H	125	197	380	199	268	88	113	213	270	240
	R	< 1	0	0	0	< 1	2	2	6	3	4
Wahoo (*ono*)	H	15	32	37	43	55	45	32	127	88	83
	R	0	0	0	< 1	< 1	< 1	0	0	0	0
Yellowfin tuna (*'ahi*)	H	141	182	150	220	292	85	82	215	287	216
	R	0	0	0	< 1	1	< 1	0	6	5	2

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Hawai'i State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	32,889 (0.4%)	553,206 (0.4%)	25.8 (0.3%)	50.8 (0.4%)	91.8	3.81

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	14	14	16	14	12	12	10	18	NA
	Receipts	866	965	821	1,048	1,271	1,071	717	1,529	NA
Seafood sales, retail	Firms	39	42	40	38	39	31	27	21	NA
	Receipts	3,558	4,086	3,764	3,727	4,053	4,025	2,106	2,364	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	1	2	2	2	2	2	3	3	3
	Employees	ds	ds	ds	ds	ds	ds	ds	30	34
	Payroll	ds	ds	ds	ds	ds	ds	ds	922	1,049
Seafood Sales, Wholesale	Establishments	40	33	32	30	30	30	32	31	30
	Employees	538	483	542	567	639	697	621	688	688
	Payroll	19,416	19,413	20,039	21,369	24,477	26,323	22,856	25,515	25,419
Seafood sales, retail	Establishments	25	24	25	26	25	22	21	21	22
	Employees	187	303	318	305	293	313	308	534	287
	Payroll	3,521	6,493	7,366	7,142	7,410	7,849	8,500	12,273	7,883

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	15	18	18	14	14	15	15	15	16
	Employees	ds	ds	ds	ds	660	727	927	646	722
	Payroll	ds	ds	ds	ds	46,560	45,051	66,270	45,133	50,196
Deep Sea Freight Transportation	Establishments	1	2	1	1	1	1	3	4	3
	Employees	ds	ds	ds	ds	ds	ds	ds	55	97
	Payroll	ds	ds	ds	ds	ds	ds	ds	6,491	6,570
Deep Sea Passenger Transportation	Establishments	1	1	1	1	1	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	2	5	5	6	7	7	6	6	7
	Employees	ds	431	ds	ds	452	425	275	270	392
	Payroll	ds	34,538	ds	ds	36,675	50,267	42,282	44,039	50,528
Port and Harbor Operations	Establishments	2	2	1	1	1	NA	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	NA	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	NA	NA	NA	NA
Marine Cargo Handling	Establishments	14	11	10	10	11	12	11	12	11
	Employees	1,278	664	709	700	782	846	869	857	877
	Payroll	109,134	54,309	61,651	66,034	83,408	115,582	86,285	92,308	100,754
Navigational Services to Shipping	Establishments	8	8	9	9	11	11	8	9	9
	Employees	105	97	100	80	70	69	51	148	80
	Payroll	5,310	5,567	6,518	5,416	4,463	5,697	4,304	5,389	6,193
Marinas	Establishments	13	9	11	9	9	9	9	9	10
	Employees	208	162	166	153	120	113	123	116	117
	Payroll	5,237	3,779	4,003	3,304	3,412	3,421	3,756	3,664	4,079

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

New England Region

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



Commercial vessels in Stonington, Connecticut.
Photo: NOAA Fisheries/Angela Silva

MANAGEMENT CONTEXT

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

New England Regional FMPs

- Northeast multi-species
- Sea scallops
- Monkfish (with the MAFMC)
- Atlantic herring
- Small mesh
- Northeast multi-species
- Spiny dogfish (with the MAFMC)
- Red crab
- Northeast skate complex
- Atlantic salmon

Sixteen of the stocks or stock complexes covered in these FMPs were listed as overfished in 2020: Atlantic cod (Georges Bank stock and Gulf of Maine stock), windowpane (Gulf of Maine/Georges Bank stock), witch flounder, yellowtail flounder (Georges Bank stock and Southern New England/Mid-Atlantic stock), thorny skate (Gulf of Maine stock), Atlantic halibut, Atlantic salmon, Atlantic wolffish, ocean pout, winter flounder (Southern New England stock and Georges Bank stock), red hake (Southern Georges Bank/Mid-Atlantic stock), white hake (Gulf of Maine/Georges Bank stock), and Atlantic herring (added in 2020).

Four stocks/complexes were subject to overfishing in 2019: Atlantic cod (Georges Bank stock and Gulf of Maine stock), yellowtail flounder (Georges Bank stock), and red hake (Southern Georges Bank/Mid-Atlantic stock). Two yellowtail flounder stocks (Cape Cod/Gulf of Maine stock and Southern New England/Mid-Atlantic stock) were removed from the overfishing list in 2019.

Catch Share Programs

Two catch share programs operate in the New England Region: 1) Northeast Multispecies Sectors: Georges Bank Cod – Hook Gear (2004) and Georges Bank Cod – Fixed Gear (2007); and 2) Northeast General Category Sea Scallop Individual Fishing Quota (IFQ) Program. The landings revenues for these programs totaled $75.9 million in 2019. The following are descriptions of these catch share programs and their performance.

Northeast Multispecies Sectors: This program was developed between 2004 and 2006 and included two pilot sectors that operated with an allocation of Georges Bank cod. The program was expanded in 2010 to 17 sectors and approximately 55% 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 2020 key performance indicators of the program show that relative to the baseline period (the three-year period prior to implementation), quota, landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while inflation-adjusted revenue per active vessel increased.

Atlantic General Category Sea Scallop IFQ Program: This program began in 2010 with two primary objectives: 1) Control capacity and mortality in the General Category Scallop fishery, and 2) allow better and timelier integration of sea scallop assessment results in management. The 2019 key performance indicators of the program show that relative to the baseline period, landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while quota and inflation-adjusted revenue per active vessel increased.

COMMERCIAL FISHERIES — NEW ENGLAND REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key New England Commercial Species

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

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[1]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry in Massachusetts generated the largest employment impacts in the New England Region with 127,680 full- and part-time jobs. Massachusetts also generated the largest sales impacts ($14.8 billion), value-added impacts ($5.6 billion), and income impacts ($3.6 billion).

Landings Revenue

In 2020, landings revenue in New England totaled $1.2 billion, a 7% increase from 2011 (an 8% decrease in real terms after adjusting for inflation) and a 20% decrease from 2019. Landings revenue was highest in Massachusetts ($556.6 million), followed by Maine ($519.8 million).

Shellfish and other landings revenue accounted for 91% of all landings revenue. In 2020, American lobster ($527.8 million), sea scallop ($346.7 million), and squid ($34.6 million) had the highest landings revenue in this region. Together, these top three species accounted for 75% of total landings revenue.

From 2011 to 2020, Atlantic mackerel (1187%, 1012% in real terms), squid (51%, 30% in real terms), and American lobster (26%, 9% in real terms) had the largest increases, while Atlantic herring[2] (-72%, -76% in real terms), goosefish (-61%, -66% in real terms), and cod and haddock (-47%, -54% in real terms) had the largest decreases. From 2019 to 2020, Atlantic mackerel (123%) and cod and haddock (8%) had the largest increases, while goosefish (-34%), quahog clam (-32%), and squid (-25%) had the largest decreases.

[1] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]
[2] New Hampshire landings of Atlantic herring was suppressed in 2020 for data confidentiality. Typically, New Hampshire contributes 2-3% of landings and landings revenue so the state's landings were not deemed likely to offset the decline.

Commercial Revenue: Largest Increases

From 2011:
- Atlantic mackerel (1187%, 1012% in real terms)
- Squid (51%, 30% in real terms)
- American lobster (26%, 9% in real terms)

From 2019:
- Atlantic mackerel (123%)
- Cod and haddock (8%)

Commercial Revenue: Largest Decreases

From 2011:
- Atlantic herring (-72%, -76% in real terms)
- Goosefish (-61%, -66% in real terms)
- Cod and haddock (-47%, -54% in real terms)

From 2019:
- Goosefish (-34%)
- Quahog clam (-32%)
- Squid (-25%)

Commercial Landings: Largest Increases

From 2011:
- Atlantic mackerel (1253%)
- Squid (96%)
- Bluefin tuna (60%)

From 2019:
- Atlantic mackerel (125%)
- Cod and haddock (12%)
- Squid (0.1%)

Commercial Landings: Largest Decreases

From 2011:
- Atlantic herring (-88%)
- Flounders (-53%)
- Quahog clam (-34%)

From 2019:
- Quahog clam (-28%)
- Sea scallop (-23%)
- Goosefish (-20%)

Landings

In 2020, New England Region commercial fishermen landed over 485.1 million pounds of finfish and shellfish. This represents a 22% decrease from 2011 and a 6% decrease from 2019. American lobster contributed the highest landings volume in the region, accounting for 25% of total landing weight.

From 2011 to 2020, Atlantic mackerel (1253%), squid (96%), and bluefin tuna (60%) had the largest increases, while Atlantic herring (-88%), flounders (-53%), and quahog clam (-34%) had the largest decreases. From 2019 to 2020, Atlantic mackerel (125%), cod and haddock (12%), and squid (0.1%) had the largest increases, while quahog clam (-28%), sea scallop (-23%), and goosefish (-20%) had the largest decreases.

Prices

In 2020, quahog clam ($10.03 per pound) received the highest ex-vessel price in the region. Landings of Atlantic mackerel ($0.31 per pound) had the lowest ex-vessel price. From 2011 to 2020, Atlantic herring (130%, 99% in real terms), quahog clam (82%, 58% in real terms), and American lobster (31%, 13% in real terms) had the largest increases, while goosefish (-63%, -68% in real terms), bluefin tuna (-54%, -61% in real terms), and cod and haddock (-33%, -42% in real terms) had the largest decreases. From 2019 to 2020, sea scallop (4%) had the largest increases, while squid (-25%), goosefish (-18%), and flounders (-18%) had the largest decreases.

RECREATIONAL FISHERIES — NEW ENGLAND REGION

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. This recreational fisheries section reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[3]

[3] Atlantic and Gulf recreational catch and effort estimates are based upon the MRIP estimates released in 2018.

Key New England Region Recreational Species[4]

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

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the New England Region is based on spending by recreational anglers.[5] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

The greatest employment impacts from expenditures on saltwater recreational fishing in the New England Region were generated in Massachusetts (1,951 jobs), followed by Connecticut (956 jobs) and Maine (928 jobs).The largest sales impacts were observed in Massachusetts ($244.5 million), followed by Connecticut ($118.4 million) and Maine ($103.1 million). The biggest income impacts were generated in Massachusetts ($119.5 million), followed by Connecticut ($50.4 million) and Rhode Island ($37.6 million). The greatest value-added impacts were in Massachusetts ($170.1 million), followed by Connecticut ($91.6 million) and Maine ($61.2 million).

A large portion of the approximately 544.4 million in trip expenses came from trips in the private boat (48%) and shore (46.6%) sectors.

Participation

Due to changes in data availability after 2018, angler participation data is not being reported at the state level for years after 2018.

Fishing Trips

In 2020, recreational fishermen took 16 million fishing trips in the New England Region. This number represented a 31% decrease from 2011 and a 7% decrease from 2019. The largest proportions of trips were taken in the shore mode (61%) and private boat (37%). States with the highest number of recorded trips in the New England Region were Massachusetts (5.9 million trips) and Connecticut (4.2 million trips).

Harvest and Release Trends

Of the New England Region's key species and species groups, scup (12.5 million fish), striped bass (12.4 million fish), and Atlantic mackerel (10.5 million fish) were most frequently caught by recreational fishermen. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, tautog (323%), little tunny (137%), and bluefin tuna (30%) had the largest increases, while winter flounder (-83%), Atlantic cod (-78%), and bluefish (-50%)

[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[5] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

had the largest decreases. From 2019 to 2020, bluefin tuna (128%), tautog (35%), and Atlantic cod (7%) had the largest increases, while summer flounder (-12%) and winter flounder (-5%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Tautog (323%)
- Little tunny (137%)
- Bluefin tuna (30%)

From 2019:
- Bluefin tuna (128%)
- Tautog (35%)
- Atlantic cod (7%)

Harvest and Release: Largest Decreases

From 2011:
- Winter flounder (-83%)
- Atlantic cod (-78%)
- Bluefish (-50%)

From 2019:
- Summer flounder (-12%)
- Winter flounder (-5%)

MARINE ECONOMY — NEW ENGLAND REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[6]

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing 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 U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

The Bureau of Labor Statistics suppressed the CFLQ value for Massachusetts, New Hampshire, and Rhode Island for 2019. Maine had the highest CFLQ at 28.37. Connecticut had a CFLQ value of 0.4.

In 2019, 379,115 employer establishments operated throughout the entire New England Region (including marine and non-marine related establishments). These establishments employed 6.5 million workers and had a total annual payroll of $419.1 billion. The combined gross state product of Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island was approximately $1.1 trillion in 2019.

Seafood Sales and Processing[8]

Seafood Product Preparation and Packaging: In 2019, there were 63 employer firms in the seafood product preparation and packaging sector (a 27% decrease from 2011) in the New England Region. The greatest number of establishments in this sector was in Massachusetts (35), followed by Maine (21) and New Hampshire (4).

Retail Seafood Sales: In 2019, there were 216 employer firms in the seafood retail sector in the New England Region (a 7% decrease from 2011). The greatest number of establishments in this sector was in Massachusetts (100), followed by Maine (52) and Connecticut (37).

Wholesale Seafood Sales: There were 321 employer firms in the seafood wholesale sector in the New England Region in 2019 (a 10% decrease from 2011). The greatest number of establishments in this sector was in Maine (149), followed by Massachusetts (125) and Rhode Island (22).

Transportation Support and Marine Operations

Data for the transportation support and marine operations

[6] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).
[7] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.'
[8] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently, this information is not available from the Census Bureau for 2019.

sectors of the New England Region's economy were largely suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the regional economy. For example, in 2019, the ship and boat building sector in the New England Region accounted for $1.4 billion in payroll.

Tables | New England Region



2020 Economic Impacts of the New England Seafood Industry (thousands of dollars; number of jobs)

State	Landings Revenue	With Imports				Without Imports			
		Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Connecticut	20,248	3,061	566,666	120,480	199,767	979	69,626	23,682	33,104
Maine	519,785	36,948	3,115,055	900,167	1,352,075	29,816	1,839,695	631,399	905,847
Massachusetts	556,617	127,680	14,764,183	3,607,684	5,624,189	61,010	2,764,876	1,030,784	1,394,000
New Hampshire	29,635	4,929	700,257	168,569	266,074	2,033	137,133	50,326	69,008
Rhode Island	78,403	5,586	621,476	168,298	256,873	3,923	270,412	97,598	136,932

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1,125,527	1,271,021	1,161,953	1,242,803	1,278,017	1,431,066	1,334,134	1,453,944	1,503,532	1,204,688
Finfish	190,565	219,605	179,414	159,743	151,661	148,540	136,865	125,180	117,394	106,626
Shellfish and Other	934,961	1,051,416	982,539	1,083,060	1,126,357	1,282,525	1,197,269	1,328,764	1,386,138	1,098,062
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	418,118	426,233	456,652	563,255	618,839	667,261	564,599	627,677	634,830	527,831
Atlantic herring	24,753	28,549	31,381	27,947	24,280	28,613	26,560	22,798	9,098	6,817
Atlantic mackerel	295	3,480	1,738	3,111	3,355	3,149	3,390	2,974	1,704	3,800
Bluefin tuna	9,258	8,388	3,649	6,108	7,716	11,932	7,554	9,344	8,081	6,737
Cod and haddock	48,747	29,697	16,288	20,307	18,897	19,189	16,355	18,107	23,972	25,929
Flounders	31,178	35,616	32,560	31,116	29,506	28,335	26,835	21,800	21,159	16,973
Goosefish	19,791	19,675	13,575	14,101	14,628	15,042	15,300	12,147	11,902	7,804
Quahog clam	8,317	9,276	9,077	9,922	11,223	11,935	11,568	12,580	14,872	10,051
Sea scallop	353,106	389,980	366,305	297,793	287,478	305,566	372,158	410,927	433,821	346,714
Squid	22,889	18,187	15,547	21,412	24,264	41,861	31,539	39,011	46,337	34,556

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	619,939	691,103	634,506	659,379	608,160	624,066	578,811	596,618	516,729	485,097
Finfish	311,735	332,277	317,736	317,014	280,978	247,510	221,138	205,206	142,557	141,552
Shellfish and Other	308,204	358,826	316,771	342,365	327,182	376,556	357,674	391,412	374,172	343,545
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	125,215	149,134	149,275	147,169	146,379	158,832	136,469	147,139	126,970	120,487
Atlantic herring	174,291	190,558	203,673	197,908	171,779	135,156	104,578	93,100	24,702	20,825
Atlantic mackerel	913	9,680	9,049	12,934	10,140	12,080	12,488	11,958	5,478	12,346
Bluefin tuna	1,085	914	523	970	1,502	1,664	1,437	1,665	1,801	1,731
Cod and haddock	30,090	14,671	9,042	15,133	15,257	14,237	13,932	16,569	21,453	23,994
Flounders	17,950	18,408	16,367	14,270	12,510	9,143	10,048	7,902	8,739	8,497
Goosefish	14,699	16,406	14,320	14,557	15,272	15,984	21,072	19,314	19,373	15,539
Quahog clam	1,513	1,570	1,558	1,503	1,353	1,354	1,262	1,303	1,401	1,003
Sea scallop	35,339	39,251	32,093	23,470	23,343	24,918	36,503	44,435	45,808	35,046
Squid	27,909	16,155	14,576	28,783	23,698	39,377	35,851	41,235	54,703	54,750

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	3.34	2.86	3.06	3.83	4.23	4.20	4.14	4.27	5.00	4.38
Atlantic herring	0.14	0.15	0.15	0.14	0.14	0.21	0.25	0.24	0.37	0.33
Atlantic mackerel	0.32	0.36	0.19	0.24	0.33	0.26	0.27	0.25	0.31	0.31
Bluefin tuna	8.54	9.18	6.98	6.29	5.14	7.17	5.26	5.61	4.49	3.89
Cod and haddock	1.62	2.02	1.80	1.34	1.24	1.35	1.17	1.09	1.12	1.08
Flounders	1.74	1.93	1.99	2.18	2.36	3.10	2.67	2.76	2.42	2.00
Goosefish	1.35	1.20	0.95	0.97	0.96	0.94	0.73	0.63	0.61	0.50
Quahog clam	5.50	5.91	5.82	6.60	8.29	8.81	9.17	9.65	10.61	10.03
Sea scallop	9.99	9.94	11.41	12.69	12.32	12.26	10.20	9.25	9.47	9.89
Squid	0.82	1.13	1.07	0.74	1.02	1.06	0.88	0.95	0.85	0.63

2020 Economic Impacts of New England Recreational Fishing (thousands of dollars; number of jobs)

State	Trips	Jobs	Sales	Income	Value Added
Connecticut	4,196	956	118,436	50,384	91,556
Maine	2,110	928	103,084	37,137	61,191
Massachusetts	5,950	1,951	244,491	119,539	170,141
New Hampshire	920	370	38,492	15,625	25,694
Rhode Island	2,848	706	76,487	37,615	54,858

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
544,352	29,387	261,267	253,698

Recreational Anglers by Residential Area (thousands of anglers)[1,2]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	1,288	1,316	1,143	1,179	1,018	1,198	969	887	NA	NA
Coastal	1,156	1,171	1,043	1,080	924	1,104	916	832	NA	NA
Non-Coastal	131	144	100	99	95	94	53	55	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	23,271	22,538	19,749	18,730	16,945	17,482	16,750	15,104	17,211	16,024
For-Hire	380	374	515	488	348	237	362	277	349	204
Private Boat	8,888	8,347	7,962	7,552	7,017	6,625	6,580	5,944	6,211	5,979
Shore	14,004	13,818	11,272	10,690	9,581	10,620	9,808	8,883	10,652	9,840

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	H	967	690	842	408	59	167	87	16	55	15
	R	1,684	991	1,799	1,168	1,074	1,787	2,226	1,173	491	567
Atlantic mackerel	H	15,554	10,443	9,986	8,440	15,579	16,577	17,301	9,452	8,556	9,528
	R	1,867	1,456	716	1,253	3,194	2,027	3,138	1,779	2,015	957
Bluefin tuna	H	6	12	< 1	14	2	12	14	3	7	5
	R	11	5	< 1	< 1	7	7	55	< 1	3	17
Bluefish	H	1,799	4,744	5,720	2,383	1,293	1,676	1,601	614	1,316	681
	R	5,033	4,819	5,304	4,215	2,781	2,464	2,406	1,189	1,903	2,722
Little tunny	H	0	18	3	15	54	70	28	16	41	19
	R	85	202	26	1,034	159	811	285	341	153	182
Scup	H	5,261	5,421	8,170	6,655	4,394	4,693	5,167	8,714	7,724	6,532
	R	7,161	8,249	7,298	6,481	5,325	9,253	9,928	8,048	6,675	6,000
Striped bass	H	1,270	1,347	1,373	930	718	454	607	543	419	197
	R	6,872	6,635	10,837	8,942	8,971	11,905	23,539	17,602	11,876	12,215
Summer flounder	H	663	592	844	878	686	556	342	389	359	317
	R	3,143	2,138	2,765	3,101	1,947	2,153	1,705	1,806	2,610	2,281
Tautog	H	294	849	1,087	1,199	873	730	995	483	1,042	790
	R	1,369	2,481	3,081	5,498	3,045	3,124	3,906	3,420	4,156	6,250
Winter flounder	H	431	162	115	178	194	83	317	145	76	94
	R	305	73	53	134	214	296	133	61	53	29

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Connecticut and Rhode Island anglers estimates are not available for the non-coastal mode.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

Tables | Connecticut



2020 Economic Impacts of the Connecticut Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	3,061	566,666	120,480	199,767	979	69,626	23,682	33,104
Commercial Harvesters	505	35,906	9,849	15,174	505	35,906	9,849	15,174
Seafood Processors and Dealers	132	16,357	6,247	8,075	63	7,772	2,968	3,837
Importers	1,273	421,419	67,540	128,467	NA	NA	NA	NA
Seafood Wholesalers and Distributors	191	36,410	11,918	16,012	20	3,778	1,237	1,661
Retail	960	56,574	24,927	32,039	391	22,170	9,629	12,431

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	20,031	21,128	14,629	14,089	15,782	15,006	13,808	16,540	16,600	20,248
Finfish	4,726	5,352	5,022	4,257	5,179	3,791	3,551	4,206	3,893	3,285
Shellfish and Other	15,305	15,777	9,607	9,832	10,603	11,215	10,257	12,334	12,708	16,963
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	943	1,057	577	608	1,073	1,298	725	629	674	826
Goosefish	976	1,040	1,022	510	680	468	360	334	215	56
Loligo squid	694	1,861	1,257	1,354	1,631	2,199	996	2,246	3,558	1,239
Other flounders	25	62	182	88	161	250	168	312	99	86
Red hake	1,617	1,380	1,301	1,586	1,164	916	647	943	530	393
Scups or porgies	408	837	705	573	819	779	559	631	807	770
Sea scallop	13,007	12,005	7,220	7,219	7,039	5,881	7,205	7,727	6,505	13,825
Silver hake	89	88	115	104	112	109	88	61	35	20
Summer flounder	1,005	940	902	921	1,078	808	674	857	1,120	1,114
Whelks and conchs	482	625	295	347	487	997	585	1,019	1,386	664

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	7,403	8,940	7,957	7,509	9,390	12,148	10,170	11,473	9,191	6,969
Finfish	5,094	5,607	5,751	5,086	6,482	3,951	4,380	5,156	3,592	3,026
Shellfish and Other	2,310	3,333	2,205	2,423	2,908	8,196	5,790	6,317	5,599	3,942
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	199	248	127	127	205	254	130	111	112	159
Goosefish	630	765	967	493	605	432	398	532	321	97
Loligo squid	498	1,518	1,098	1,318	1,317	1,823	650	1,346	2,165	938
Other flounders	16	36	138	57	81	105	71	155	50	59
Red hake	2,041	1,848	1,647	2,037	1,320	948	746	1,010	705	466
Scups or porgies	644	907	1,195	811	983	942	748	793	1,141	990
Sea scallop	1,318	1,231	640	609	577	530	777	877	706	1,351
Silver hake	158	185	173	167	146	164	133	138	99	59
Summer flounder	401	315	284	253	287	191	135	177	291	370
Whelks and conchs	82	94	81	103	81	211	194	448	465	239

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	4.74	4.26	4.53	4.78	5.23	5.10	5.57	5.69	6.05	5.19
Goosefish	1.55	1.36	1.06	1.04	1.12	1.08	0.90	0.63	0.67	0.58
Loligo squid	1.39	1.23	1.15	1.03	1.24	1.21	1.53	1.67	1.64	1.32
Other flounders	1.56	1.72	1.32	1.55	1.98	2.39	2.38	2.01	1.98	1.46
Red hake	0.79	0.75	0.79	0.78	0.88	0.97	0.87	0.93	0.75	0.84
Scups or porgies	0.63	0.92	0.59	0.71	0.83	0.83	0.75	0.80	0.71	0.78
Sea scallop	9.87	9.75	11.29	11.85	12.20	11.09	9.27	8.81	9.21	10.24
Silver hake	0.56	0.47	0.66	0.62	0.77	0.66	0.66	0.44	0.35	0.35
Summer flounder	2.50	2.98	3.18	3.63	3.76	4.23	5.01	4.83	3.86	3.01
Whelks and conchs	5.91	6.67	3.65	3.37	6.04	4.72	3.01	2.27	2.98	2.78

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Connecticut Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	35	4,072	1,601	2,635
Private Boat	390	52,069	21,862	39,533
Shore	530	62,295	26,921	49,388
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	956	118,436	50,384	91,556

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
125,625	2,799	62,166	60,660

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	518	464	240	273	309	385	398	389	NA	NA
Coastal	420	397	198	209	252	297	296	292	NA	NA
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	98	67	43	64	57	88	102	96	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	3,479	3,734	3,506	3,641	3,844	4,230	3,937	3,543	3,766	4,196
For-Hire	45	27	64	62	77	38	36	38	41	23
Private Boat	1,688	1,776	1,730	1,693	1,576	1,629	1,337	1,422	1,453	1,474
Shore	1,746	1,931	1,712	1,885	2,192	2,563	2,565	2,083	2,272	2,699

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	H	NA	2	NA	NA	NA	19	2	2	26	< 1
	R	NA	0	NA	NA	NA	12	< 1	< 1	12	2
Bluefish	H	697	1,399	3,476	1,179	501	554	586	312	670	298
	R	1,958	1,495	1,594	1,062	890	818	1,763	505	820	1,109
Hickory shad	H	65	61	15	92	0	36	19	2	NA	0
	R	0	0	4	29	7	40	22	40	NA	33
Little tunny	H	0	< 1	NA	2	0	< 1	14	3	< 1	< 1
	R	20	105	NA	17	3	45	50	158	20	12
Scup	H	1,940	1,840	1,879	1,189	1,198	1,352	1,695	3,071	2,491	3,663
	R	1,170	2,052	2,775	2,729	1,814	3,288	4,646	3,029	2,396	3,205
Striped bass	H	91	137	270	132	141	63	95	85	67	71
	R	1,571	892	2,312	740	1,761	1,208	4,994	7,514	2,287	2,763
Summer flounder	H	99	135	529	281	252	338	121	153	90	127
	R	778	650	1,684	1,544	1,075	1,409	811	877	1,065	1,156
Tautog	H	42	411	307	516	389	312	218	75	504	376
	R	72	1,287	1,276	2,908	1,260	1,809	1,472	1,014	1,718	2,976
White perch	H	0	50	0	9	< 1	22	114	0	< 1	< 1
	R	2	115	6	26	< 1	29	5	37	1	< 1
Winter flounder	H	44	52	0	1	45	1	< 1	2	0	< 1
	R	2	29	8	1	83	7	< 1	< 1	1	< 1

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Connecticut State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	88,916 (1.1%)	1,538,341 (1.2%)	100 (1.4%)	147 (1.3%)	288	0.4

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	14	13	25	26	25	22	19	17	NA
	Receipts	1,066	882	3,058	3,969	2,692	1,635	1,397	1,135	NA
Seafood sales, retail	Firms	21	21	20	18	19	33	26	27	NA
	Receipts	2,165	1,388	1,543	1,655	1,813	3,965	2,520	3,963	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	2	1	1	1	1	NA	NA	NA	3
	Employees	ds	ds	ds	ds	ds	NA	NA	NA	12
	Payroll	ds	ds	ds	ds	ds	NA	NA	NA	699
Seafood Sales, Wholesale	Establishments	24	16	17	19	20	18	17	15	15
	Employees	212	187	178	172	211	158	153	155	157
	Payroll	9,224	8,237	7,920	8,174	20,558	18,205	6,966	7,286	7,640
Seafood sales, retail	Establishments	37	37	36	35	34	32	33	35	37
	Employees	171	233	218	244	230	261	230	227	247
	Payroll	4,824	6,349	6,344	7,380	7,533	8,742	8,264	8,327	9,496

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	11	8	7	9	8	10	9	11	12
	Employees	ds	ds	ds	ds	ds	ds	ds	11,373	11,931
	Payroll	ds	ds	ds	ds	ds	ds	ds	959,192	960,477
Deep Sea Freight Transportation	Establishments	11	14	11	11	11	12	10	9	9
	Employees	225	297	184	ds	164	162	146	97	87
	Payroll	41,302	37,711	28,513	26,891	26,880	27,211	25,371	19,429	19,039
Deep Sea Passenger Transportation	Establishments	1	1	NA	NA	NA	1	NA	NA	NA
	Employees	ds	ds	NA	NA	NA	ds	NA	NA	NA
	Payroll	ds	ds	NA	NA	NA	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	5	10	9	9	9	8	8	8	7
	Employees	95	256	ds	ds	216	232	298	265	222
	Payroll	7,856	32,789	ds	ds	27,698	34,550	37,814	32,252	28,519
Port and Harbor Operations	Establishments	5	4	5	5	5	4	3	4	4
	Employees	34	ds	ds	ds	22	19	ds	38	35
	Payroll	848	1,414	ds	ds	1,142	1,465	ds	3,755	3,647
Marine Cargo Handling	Establishments	3	NA	1	1	1	2	4	4	4
	Employees	ds	NA	ds	ds	ds	ds	ds	85	78
	Payroll	ds	NA	ds	ds	ds	ds	ds	9,494	7,715
Navigational Services to Shipping	Establishments	5	2	2	4	3	1	3	3	6
	Employees	5	ds	ds	3	2	ds	4	2	7
	Payroll	898	ds	ds	185	159	ds	175	265	445
Marinas	Establishments	128	130	130	128	125	125	116	125	131
	Employees	1,283	1,257	1,265	1,174	1,153	1,193	1,167	1,105	1,152
	Payroll	59,851	60,803	63,211	59,054	59,526	62,504	51,217	57,582	59,206

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Maine



2020 Economic Impacts of the Maine Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	36,948	3,115,055	900,167	1,352,075	29,816	1,839,695	631,399	905,847
Commercial Harvesters	14,518	997,476	273,447	446,708	14,518	997,476	273,447	446,708
Seafood Processors and Dealers	2,825	236,233	94,845	121,190	2,241	187,380	75,231	96,128
Importers	3,085	1,021,380	163,696	311,361	NA	NA	NA	NA
Seafood Wholesalers and Distributors	1,489	170,021	60,989	79,362	843	96,252	34,527	44,928
Retail	15,032	689,946	307,190	393,454	12,215	558,587	248,194	318,082

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	434,805	530,398	478,881	595,694	628,954	735,803	577,459	645,338	657,033	519,785
Finfish	29,631	62,964	57,269	34,675	33,498	29,782	25,747	24,985	14,767	11,537
Shellfish and Other	405,174	467,435	421,611	561,019	595,456	706,022	551,712	620,353	642,265	508,248
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	334,702	342,529	371,078	461,851	502,565	541,318	439,300	491,574	491,643	412,607
Atlantic herring	14,396	14,494	15,492	16,212	13,526	19,488	17,768	16,701	5,979	4,259
Bloodworms	5,847	5,191	5,644	6,085	6,333	6,585	6,444	6,659	NA	6,786
Blue mussel	1,969	1,930	2,341	2,153	2,458	2,422	2,126	2,738	3,406	2,782
Cod and haddock	1,653	1,337	951	1,267	1,069	886	770	978	745	480
Goosefish	578	1,059	773	566	616	459	623	675	762	315
Ocean quahog clam	2,117	1,737	1,378	1,238	1,311	1,299	1,203	1,072	894	614
Pollock	1,929	2,527	2,562	2,878	1,965	1,663	1,182	988	639	551
Sea urchins	5,113	5,024	5,781	5,282	NA	6,619	6,118	6,211	5,836	3,865
Softshell clam	15,944	15,668	18,104	20,233	22,841	16,231	12,347	12,922	18,282	15,941

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	256,584	289,860	267,003	278,048	252,484	276,904	231,220	252,171	181,315	165,375
Finfish	102,710	99,087	105,521	110,682	92,216	86,720	72,728	72,258	26,795	26,002
Shellfish and Other	153,874	190,773	161,482	167,365	160,268	190,183	158,492	179,913	154,520	139,373
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	104,957	127,464	128,016	124,941	122,686	132,750	112,169	121,226	101,940	97,907
Atlantic herring	97,066	92,528	98,769	103,530	86,441	78,425	65,485	62,272	13,638	11,681
Bloodworms	526	457	470	448	401	413	403	415	NA	392
Blue mussel	2,810	2,427	2,282	2,270	2,401	1,745	1,233	1,674	1,965	1,575
Cod and haddock	835	536	400	685	658	489	449	747	459	275
Goosefish	533	1,075	874	633	740	542	883	1,149	1,292	749
Ocean quahog clam	645	698	557	438	416	367	346	295	233	161
Pollock	2,325	2,666	2,227	2,319	1,381	1,049	848	818	488	418
Sea urchins	2,407	1,904	1,988	1,958	NA	2,058	1,956	2,045	1,707	1,281
Softshell clam	2,383	2,260	2,297	2,080	1,891	1,560	1,411	1,468	1,606	1,360

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	3.19	2.69	2.90	3.70	4.10	4.08	3.92	4.06	4.82	4.21
Atlantic herring	0.15	0.16	0.16	0.16	0.16	0.25	0.27	0.27	0.44	0.36
Bloodworms	11.12	11.36	12.00	13.59	15.80	15.93	15.99	16.04	NA	17.32
Blue mussel	0.70	0.80	1.03	0.95	1.02	1.39	1.73	1.64	1.73	1.77
Cod and haddock	1.98	2.50	2.38	1.85	1.62	1.81	1.72	1.31	1.63	1.74
Goosefish	1.09	0.99	0.88	0.89	0.83	0.85	0.71	0.59	0.59	0.42
Ocean quahog clam	3.28	2.49	2.47	2.82	3.15	3.54	3.48	3.63	3.84	3.82
Pollock	0.83	0.95	1.15	1.24	1.42	1.58	1.39	1.21	1.31	1.32
Sea urchins	2.12	2.64	2.91	2.70	NA	3.22	3.13	3.04	3.42	3.02
Softshell clam	6.69	6.93	7.88	9.73	12.08	10.40	8.75	8.81	11.39	11.72

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Maine Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	84	8,106	2,820	4,712
Private Boat	129	15,894	5,332	8,973
Shore	714	79,085	28,985	47,505
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	928	103,084	37,137	61,191

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
78,430	4,911	15,261	58,258

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	198	248	235	213	145	237	269	130	NA	NA
Coastal	85	116	102	79	67	114	114	57	NA	NA
Non-Coastal	7	6	4	5	4	13	10	2	NA	NA
Out-of-State	107	126	129	129	74	110	145	71	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	1,771	1,768	1,896	1,976	1,705	1,948	1,748	1,626	1,675	2,110
For-Hire	23	23	30	27	23	17	16	29	26	26
Private Boat	892	788	821	711	660	664	650	575	562	609
Shore	856	958	1,045	1,239	1,022	1,268	1,082	1,022	1,087	1,475

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American shad	H	0	0	0	6	6	4	4	4	0	0
	R	15	43	5	0	50	20	40	41	92	< 1
Atlantic cod	H	98	48	110	70	3	4	< 1	< 1	9	< 1
	R	309	207	157	147	225	148	127	82	67	71
Atlantic mackerel	H	5,416	3,917	2,268	2,331	3,172	4,929	1,934	2,698	2,670	3,296
	R	1,215	739	214	603	488	963	215	154	605	333
Blue shark	H	0	0	0	0	0	0	NA	0	0	0
	R	24	7	36	20	35	2	NA	10	6	10
Bluefin tuna	H	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1
	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
Bluefish	H	2	22	67	< 1	1	< 1	< 1	NA	NA	NA
	R	10	144	65	0	0	< 1	0	NA	NA	NA
Haddock	H	25	6	13	9	36	45	62	98	75	110
	R	8	30	94	212	122	166	182	88	123	233
Pollock	H	206	122	267	371	194	82	123	139	110	204
	R	493	291	839	441	310	206	134	239	249	168
Striped bass	H	49	31	73	86	14	14	22	16	38	19
	R	453	657	985	1,023	824	2,162	2,719	2,174	1,525	2,142
Winter flounder	H	NA	NA	0	0	NA	0	12	NA	15	38
	R	NA	NA	2	17	NA	47	0	NA	19	0

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.
[4] Blue shark include blue shark and albacore.

2019 Maine State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	41,843 (0.5%)	522,191 (0.4%)	24.1 (0.3%)	39.3 (0.3%)	68.5	28.37

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	51	51	36	37	32	31	32	36	NA
	Receipts	3,077	3,294	2,757	4,142	2,583	3,070	2,715	3,676	NA
Seafood sales, retail	Firms	48	46	49	57	50	47	54	39	NA
	Receipts	4,608	4,492	4,200	4,664	5,848	7,586	5,814	5,442	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	28	29	28	30	32	27	22	24	21
	Employees	500	492	376	546	552	509	494	546	572
	Payroll	10,353	12,011	11,797	18,713	18,506	18,774	16,933	18,587	19,892
Seafood Sales, Wholesale	Establishments	152	136	150	142	146	150	146	148	149
	Employees	1,109	1,047	1,340	1,047	1,123	1,174	1,165	1,255	1,372
	Payroll	38,412	40,734	46,782	40,392	42,337	49,043	52,014	55,388	60,152
Seafood sales, retail	Establishments	51	48	51	54	60	59	53	55	52
	Employees	177	215	243	235	237	229	209	197	223
	Payroll	5,108	6,902	7,618	7,558	9,601	9,162	9,890	8,475	8,955

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	76	76	79	84	84	83	82	81	77
	Employees	ds	ds	ds	ds	6,654	7,091	6,787	6,856	6,985
	Payroll	ds	ds	ds	ds	418,591	422,525	397,918	423,509	405,045
Deep Sea Passenger Transportation	Establishments	1	NA	NA	NA	NA	NA	NA	NA	NA
	Employees	ds	NA	NA	NA	NA	NA	NA	NA	NA
	Payroll	ds	NA	NA	NA	NA	NA	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	4	3	3	3	3	3	3	3	NA
	Employees	ds	ds	ds	ds	17	ds	ds	12	NA
	Payroll	1,105	ds	ds	ds	1,071	ds	ds	1,102	NA
Port and Harbor Operations	Establishments	1	6	3	3	3	3	4	3	3
	Employees	ds	ds	2	ds	4	ds	ds	33	14
	Payroll	ds	ds	130	113	142	ds	ds	1,599	653
Marine Cargo Handling	Establishments	2	1	2	2	2	4	3	3	3
	Employees	ds	ds	ds	ds	ds	20	ds	32	31
	Payroll	ds	ds	ds	ds	ds	1,857	ds	1,823	1,695
Navigational Services to Shipping	Establishments	13	13	14	14	13	13	15	14	16
	Employees	63	65	86	75	77	65	61	77	74
	Payroll	4,776	4,730	5,660	5,243	4,752	3,852	4,477	5,000	7,526
Marinas	Establishments	84	80	79	79	80	79	77	75	77
	Employees	349	428	403	435	430	471	376	378	417
	Payroll	15,426	17,102	17,476	19,694	20,400	22,618	18,912	19,728	21,073

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Massachusetts



2020 Economic Impacts of the Massachusetts Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	127,680	14,764,183	3,607,684	5,624,189	61,010	2,764,876	1,030,784	1,394,000
Commercial Harvesters	10,969	1,017,559	324,980	476,017	10,969	1,017,559	324,980	476,017
Seafood Processors and Dealers	13,705	2,118,052	807,528	1,049,927	2,991	462,300	176,256	229,164
Importers	27,228	9,015,166	1,444,852	2,748,217	NA	NA	NA	NA
Seafood Wholesalers and Distributors	4,806	910,134	297,417	403,549	1,121	212,213	69,348	94,094
Retail	70,972	1,703,271	732,907	946,478	45,929	1,072,804	460,201	594,725

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	571,278	615,122	562,193	522,314	523,410	551,877	605,213	647,824	681,044	556,617
Finfish	126,973	118,925	87,251	93,123	88,753	91,642	86,004	74,277	76,326	73,809
Shellfish and Other	444,306	496,198	474,941	429,191	434,657	460,235	519,210	573,547	604,718	482,808
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	53,365	53,360	58,663	68,336	78,290	82,383	81,193	88,845	95,456	78,309
Atlantic herring	8,802	11,529	10,750	9,432	8,787	7,589	7,019	5,069	2,685	2,437
Atlantic mackerel	137	654	1,223	2,421	1,952	2,600	2,775	1,579	1,134	2,344
Cod and haddock	43,379	25,847	14,037	18,065	17,433	17,735	15,131	16,477	22,798	24,921
Eastern oyster	9,080	12,072	13,896	19,575	22,679	22,512	28,387	28,387	30,147	18,391
Flounders	22,124	25,191	20,780	18,183	18,118	18,317	18,505	14,762	12,483	10,309
Goosefish	13,429	13,578	8,869	10,028	10,251	11,291	11,833	8,453	8,101	6,033
Ocean quahog clam	NA	NA	NA	9,814	9,063	NA	10,719	NA	8,233	6,959
Other clams	14,424	20,026	23,675	22,221	22,769	24,017	25,056	25,364	24,645	19,222
Sea scallop	330,954	364,902	334,221	271,373	264,741	281,191	331,278	373,829	397,180	313,957

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	264,891	294,923	261,451	272,926	259,464	244,388	242,826	241,753	234,198	227,918
Finfish	164,278	178,295	150,372	161,303	146,249	127,170	115,257	102,156	86,061	93,099
Shellfish and Other	100,613	116,628	111,079	111,622	113,215	117,218	127,569	139,597	148,136	134,818
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	13,385	14,486	15,159	15,313	16,450	17,785	16,493	17,697	17,029	15,712
Atlantic herring	66,970	81,781	74,992	77,873	70,888	47,149	31,687	27,078	9,873	8,629
Atlantic mackerel	515	4,131	7,279	10,755	7,059	10,556	10,403	7,534	3,575	8,799
Cod and haddock	27,153	13,028	8,107	13,977	14,393	13,445	13,280	15,378	20,760	23,346
Eastern oyster	227	308	328	444	504	494	618	651	687	383
Flounders	13,707	14,264	11,541	9,050	8,412	6,144	7,456	6,178	5,945	5,984
Goosefish	10,142	11,567	9,498	10,533	11,084	12,476	17,181	14,034	14,025	12,274
Ocean quahog clam	NA	NA	NA	13,422	13,340	NA	14,190	NA	11,070	9,678
Other clams	12,514	18,378	21,787	20,195	19,567	20,390	19,246	17,895	16,523	12,609
Sea scallop	33,093	36,722	29,253	21,316	21,491	22,844	32,488	40,382	41,851	31,690

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	3.99	3.68	3.87	4.46	4.76	4.63	4.92	5.02	5.61	4.98
Atlantic herring	0.13	0.14	0.14	0.12	0.12	0.16	0.22	0.19	0.27	0.28
Atlantic mackerel	0.27	0.16	0.17	0.23	0.28	0.25	0.27	0.21	0.32	0.27
Cod and haddock	1.60	1.98	1.73	1.29	1.21	1.32	1.14	1.07	1.10	1.07
Eastern oyster	39.99	39.19	42.41	44.12	44.98	45.58	45.96	43.63	43.90	47.98
Flounders	1.61	1.77	1.80	2.01	2.15	2.98	2.48	2.39	2.10	1.72
Goosefish	1.32	1.17	0.93	0.95	0.92	0.90	0.69	0.60	0.58	0.49
Ocean quahog clam	NA	NA	NA	0.73	0.68	NA	0.76	NA	0.74	0.72
Other clams	1.15	1.09	1.09	1.10	1.16	1.18	1.30	1.42	1.49	1.52
Sea scallop	10.00	9.94	11.43	12.73	12.32	12.31	10.20	9.26	9.49	9.91

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Massachusetts Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	147	16,826	6,543	10,771
Private Boat	845	111,789	54,891	76,569
Shore	959	115,876	58,105	82,801
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	1,951	244,491	119,539	170,141

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
241,745	10,339	146,121	85,284

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	897	941	898	1,196	711	837	599	550	NA	NA
Coastal	490	502	546	582	428	476	350	335	NA	NA
Non-Coastal	115	130	77	82	85	73	38	45	NA	NA
Out-of-State	293	309	275	532	199	289	211	169	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	13,462	12,221	10,125	8,808	7,282	7,244	7,775	6,705	7,422	5,950
For-Hire	197	227	260	238	117	95	224	130	199	71
Private Boat	4,721	4,380	3,898	3,695	3,064	3,069	3,390	2,673	2,511	2,563
Shore	8,544	7,614	5,967	4,875	4,102	4,080	4,161	3,903	4,713	3,315

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic bonito	H	15	12	0	31	12	1	3	24	68	28
	R	0	< 1	2	42	13	13	< 1	378	24	21
Atlantic cod	H	697	486	544	252	5	56	48	5	5	2
	R	1,006	533	1,382	806	317	1,145	1,728	605	204	355
Atlantic mackerel	H	6,911	4,165	5,114	4,334	11,514	9,199	12,295	4,983	4,412	4,826
	R	261	403	417	524	2,385	684	2,689	1,414	1,235	493
Bluefish	H	684	977	1,520	739	693	977	595	182	266	162
	R	1,877	1,808	1,644	2,888	479	1,059	528	532	471	744
Haddock	H	123	189	189	153	74	741	1,465	504	602	703
	R	41	215	583	666	213	2,487	2,048	703	251	302
Scup	H	2,125	2,549	3,783	2,802	1,977	1,791	2,086	3,266	1,961	1,280
	R	4,506	4,527	2,854	2,302	1,906	3,004	3,419	3,223	1,985	1,498
Striped bass	H	873	1,011	659	524	485	230	392	389	196	67
	R	4,036	3,629	4,670	6,425	4,471	6,299	12,866	5,377	5,499	5,128
Summer flounder	H	184	233	80	256	213	106	65	67	55	70
	R	594	560	144	643	242	267	110	138	224	315
Tautog	H	173	96	240	444	188	74	636	78	169	185
	R	817	348	1,012	2,168	670	261	1,889	399	1,191	2,056
Winter flounder	H	365	110	115	168	134	71	285	126	55	46
	R	299	35	40	101	113	230	125	52	28	23

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Massachusett State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	181,061 (2.3%)	3,386,372 (2.5%)	239 (3.2%)	341 (3%)	593	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	36	25	28	33	38	38	40	51	NA
	Receipts	2,433	1,699	1,857	2,356	4,474	3,800	4,462	4,757	NA
Seafood sales, retail	Firms	66	65	51	56	52	46	53	65	NA
	Receipts	7,640	5,213	3,842	5,782	5,154	4,566	5,153	5,147	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	44	39	40	42	41	37	36	34	35
	Employees	2,214	1,638	1,755	1,819	1,948	1,967	2,153	2,227	2,204
	Payroll	112,399	74,541	87,153	99,445	108,090	108,850	134,273	131,856	136,718
Seafood Sales, Wholesale	Establishments	141	140	142	130	129	128	133	129	125
	Employees	2,013	1,841	1,910	1,859	1,808	1,865	1,753	1,890	1,962
	Payroll	94,105	100,801	104,637	101,512	102,009	107,494	108,426	112,782	124,425
Seafood sales, retail	Establishments	106	114	114	114	106	107	101	99	100
	Employees	576	576	708	647	641	690	657	632	636
	Payroll	16,037	15,776	18,304	19,516	20,201	21,909	21,734	22,756	23,289

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	37	40	41	43	39	38	34	37	40
	Employees	445	446	463	623	576	525	495	680	635
	Payroll	22,066	23,195	23,615	31,451	31,153	30,808	28,965	38,046	39,362
Deep Sea Freight Transportation	Establishments	7	9	8	9	8	8	8	7	7
	Employees	381	ds	ds	ds	ds	ds	ds	57	68
	Payroll	38,797	ds	ds	ds	ds	ds	ds	5,493	6,126
Coastal and Great Lakes Freight Transportation	Establishments	10	14	8	12	12	10	7	5	6
	Employees	ds	ds	22	25	36	34	35	33	74
	Payroll	ds	3,266	1,352	1,478	2,766	3,026	2,542	4,020	4,923
Port and Harbor Operations	Establishments	6	5	3	1	1	1	NA	NA	3
	Employees	95	35	ds	ds	ds	ds	NA	NA	49
	Payroll	3,035	1,519	ds	ds	ds	ds	NA	NA	5,679
Marine Cargo Handling	Establishments	2	4	3	3	2	2	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Navigational Services to Shipping	Establishments	9	8	11	9	8	10	16	16	17
	Employees	139	120	94	83	88	106	156	162	174
	Payroll	6,980	5,965	6,578	6,645	7,311	8,984	10,898	14,837	14,378
Marinas	Establishments	176	172	178	177	178	175	176	173	176
	Employees	1,125	977	1,054	1,161	1,076	1,143	1,230	1,215	1,275
	Payroll	58,251	48,657	55,053	57,797	63,422	67,077	68,756	67,405	70,980

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | New Hampshire



2020 Economic Impacts of the New Hampshire Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	4,929	700,257	168,569	266,074	2,033	137,133	50,326	69,008
Commercial Harvesters	741	51,977	14,690	22,814	741	51,977	14,690	22,814
Seafood Processors and Dealers	341	44,259	17,391	22,425	170	22,036	8,659	11,165
Importers	1,361	450,525	72,205	137,340	NA	NA	NA	NA
Seafood Wholesalers and Distributors	276	42,047	14,822	19,505	66	10,060	3,546	4,667
Retail	2,211	111,449	49,460	63,991	1,057	53,060	23,431	30,363

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	23,482	23,236	20,188	24,288	27,794	33,480	35,691	39,121	39,550	29,635
Finfish	6,119	5,541	2,851	1,855	2,514	2,484	3,123	3,040	2,812	1,574
Shellfish and Other	17,363	17,695	17,337	22,433	25,280	30,996	32,567	36,080	36,738	28,062
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	16,343	17,169	16,602	20,751	24,544	30,373	32,365	35,673	36,021	26,553
Atlantic cod	2,500	1,750	546	571	93	109	150	209	244	181
Atlantic herring	208	349	232	NA	586	NA	827	436	NA	NA
Flounder	102	217	106	NA	156	191	269	198	124	81
Goosefish	207	153	186	NA	351	338	422	355	312	183
Haddock	35	91	20	18	8	14	22	107	133	287
Hake	445	475	373	NA	261	270	186	278	288	59
Pollock	1,355	1,224	1,133	860	356	207	189	284	269	282
Sea scallop	26	143	296	345	398	284	66	155	385	73
Spiny dogfish	451	419	94	NA	NA	NA	178	NA	NA	NA

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	12,311	12,145	8,247	9,117	11,093	7,937	10,799	10,119	13,225	11,340
Finfish	7,108	7,487	3,961	1,203	5,168	1,081	4,982	2,995	5,993	1,166
Shellfish and Other	5,203	4,659	4,285	7,913	5,926	6,856	5,817	7,124	7,232	10,174
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	3,919	4,229	3,818	4,375	4,722	5,782	5,645	6,199	6,094	5,014
Atlantic cod	1,286	725	230	263	45	55	71	89	98	67
Atlantic herring	1,514	2,391	1,579	NA	3,999	NA	2,829	1,511	NA	NA
Flounder	70	133	61	NA	97	86	119	98	61	58
Goosefish	153	126	162	NA	314	331	549	540	577	347
Haddock	19	43	9	10	6	9	18	80	107	265
Hake	587	1,136	393	NA	309	330	267	288	307	72
Pollock	1,732	1,049	982	629	270	98	108	186	175	226
Sea scallop	3	12	25	27	31	24	5	12	36	6
Spiny dogfish	1,643	1,788	508	NA	NA	NA	858	NA	NA	NA

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	4.17	4.06	4.35	4.74	5.20	5.25	5.73	5.75	5.91	5.30
Atlantic cod	1.94	2.41	2.38	2.17	2.09	1.97	2.11	2.36	2.48	2.69
Atlantic herring	0.14	0.15	0.15	NA	0.15	NA	0.29	0.29	NA	NA
Flounder	1.46	1.63	1.74	NA	1.61	2.21	2.27	2.01	2.04	1.40
Goosefish	1.36	1.21	1.15	NA	1.12	1.02	0.77	0.66	0.54	0.53
Haddock	1.91	2.14	2.28	1.74	1.41	1.55	1.26	1.34	1.24	1.08
Hake	0.76	0.42	0.95	NA	0.85	0.82	0.70	0.96	0.94	0.82
Pollock	0.78	1.17	1.15	1.37	1.32	2.12	1.74	1.53	1.54	1.25
Sea scallop	10.35	11.68	11.93	12.68	12.83	12.02	13.19	13.19	10.77	11.38
Spiny dogfish	0.27	0.23	0.19	NA	NA	NA	0.21	NA	NA	NA

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of New Hampshire Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	88	8,785	3,360	5,312
Private Boat	64	7,028	3,215	4,690
Shore	217	22,679	9,050	15,692
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	370	38,492	15,625	25,694

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
32,336	5,769	8,956	17,612

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	96	121	153	120	115	134	48	88	NA	NA
Coastal	56	58	68	50	54	69	24	39	NA	NA
Non-Coastal	10	9	19	11	6	8	4	8	NA	NA
Out-of-State	30	54	66	58	54	57	19	41	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	810	858	906	954	981	1,061	972	676	609	920
For-Hire	76	55	114	110	82	38	51	38	48	45
Private Boat	341	375	404	395	407	438	430	299	301	297
Shore	393	427	389	449	492	585	492	339	260	578

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	H	165	97	188	66	3	12	32	< 1	3	3
	R	333	248	259	209	499	423	370	482	202	130
Atlantic mackerel	H	3,227	2,360	2,537	1,768	880	2,431	3,031	1,753	1,474	1,406
	R	391	312	51	125	315	362	232	208	163	119
Bluefin tuna	H	0	< 1	NA	NA	NA	NA	NA	< 1	3	< 1
	R	3	0	NA	NA	NA	NA	NA	0	0	0
Bluefish	H	1	33	0	2	8	< 1	NA	NA	NA	< 1
	R	3	16	< 1	9	0	0	NA	NA	NA	0
Haddock	H	94	101	107	104	153	195	165	263	212	202
	R	25	177	404	582	1,062	553	441	314	265	337
Other flounders	H	0	1	0	0	NA	0	0	0	0	0
	R	3	2	10	< 1	NA	3	5	< 1	1	3
Pollock	H	186	119	228	268	149	213	258	87	70	56
	R	243	282	469	459	1,273	294	321	147	157	190
Striped bass	H	54	37	63	17	10	18	38	13	15	3
	R	191	164	295	316	262	819	1,418	356	435	897
Winter flounder	H	21	< 1	0	8	15	8	11	17	6	9
	R	4	5	3	13	18	12	8	9	6	5

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.
[4] Other flounders include flatfish order and unidentified flounder or sole.

2019 New Hampshire State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	38,494 (0.5%)	620,164 (0.5%)	33.0 (0.4%)	49.1 (0.4%)	87.5	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)[1]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	7	7	6	6	4	4	5	6	NA
	Receipts	856	1,166	1,239	1,019	1,411	1,435	1,416	1,128	NA
Seafood sales, retail	Firms	11	12	15	15	9	8	9	9	NA
	Receipts	2,152	2,096	1,861	2,419	1,722	899	1,134	1,200	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	8	8	7	6	8	6	5	5	4
	Employees	231	229	225	ds	182	ds	ds	221	202
	Payroll	12,010	12,181	13,751	ds	11,160	ds	ds	13,941	12,023
Seafood Sales, Wholesale	Establishments	7	8	9	8	9	9	9	10	10
	Employees	84	99	113	106	108	95	100	102	99
	Payroll	4,123	5,738	4,562	4,271	4,543	5,480	5,863	6,105	6,132
Seafood sales, retail	Establishments	16	9	9	9	9	9	7	6	6
	Employees	88	48	45	ds	57	58	138	44	42
	Payroll	1,934	870	966	1,699	1,659	1,397	2,900	1,163	1,262

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	7	7	7	8	6	7	6	6	7
	Employees	ds	ds	ds	ds	181	190	174	217	198
	Payroll	ds	ds	ds	ds	9,800	9,413	11,357	12,563	12,115
Deep Sea Freight Transportation	Establishments	1	1	1	1	NA	NA	NA	NA	NA
	Employees	ds	ds	ds	ds	NA	NA	NA	NA	NA
	Payroll	ds	ds	ds	ds	NA	NA	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	NA	1	NA	NA	NA	NA	NA	NA	NA
	Employees	NA	ds	NA	NA	NA	NA	NA	NA	NA
	Payroll	NA	ds	NA	NA	NA	NA	NA	NA	NA
Port and Harbor Operations	Establishments	NA	2	2	1	1	1	NA	NA	NA
	Employees	NA	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	NA	ds	ds	ds	ds	ds	NA	NA	NA
Navigational Services to Shipping	Establishments	2	3	3	3	3	2	3	3	3
	Employees	ds	ds	ds	ds	18	ds	ds	17	17
	Payroll	ds	ds	ds	ds	1,920	ds	ds	1,973	1,804
Marinas	Establishments	34	31	35	35	35	35	31	31	33
	Employees	139	131	155	144	153	162	145	169	180
	Payroll	7,090	6,927	8,031	8,043	8,788	10,070	9,282	10,483	12,680

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Rhode Island



2020 Economic Impacts of the Rhode Island Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	5,586	621,476	168,298	256,873	3,923	270,412	97,598	136,932
Commercial Harvesters	1,826	135,400	41,255	64,070	1,826	135,400	41,255	64,070
Seafood Processors and Dealers	288	36,018	13,957	18,137	254	31,828	12,334	16,027
Importers	881	291,678	46,747	88,916	NA	NA	NA	NA
Seafood Wholesalers and Distributors	277	39,837	14,115	18,573	103	14,830	5,255	6,914
Retail	2,314	118,544	52,224	67,177	1,740	88,354	38,755	49,920

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	75,930	81,136	86,063	86,419	82,077	94,899	101,962	105,122	109,306	78,403
Finfish	23,116	26,823	27,020	25,834	21,716	20,841	18,440	18,672	19,596	16,422
Shellfish and Other	52,814	54,312	59,043	60,586	60,361	74,057	83,523	86,450	89,709	61,981
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	12,765	12,119	9,732	11,709	12,368	11,889	11,016	10,957	11,036	9,536
Atlantic herring	1,343	2,174	4,907	2,303	1,373	1,525	939	572	427	103
Atlantic mackerel	100	2,804	339	309	1,074	448	286	1,287	389	1,101
Goosefish	4,600	3,844	2,725	2,996	2,730	2,486	2,062	2,330	2,512	1,217
Other flounders	805	1,025	2,125	2,948	1,774	1,465	1,546	626	375	205
Quahog clam	3,919	5,169	4,727	5,099	5,453	5,612	5,011	4,798	5,364	3,392
Scups and porgies	3,312	3,904	3,666	4,118	4,278	4,053	3,078	2,740	2,571	2,414
Sea scallop	6,834	9,191	18,639	10,273	8,079	10,242	22,785	22,050	24,517	11,339
Squid	20,381	12,744	13,207	17,718	20,288	33,938	28,333	32,571	31,073	24,844
Summer flounder	6,408	6,937	6,751	7,298	6,107	5,480	4,299	4,710	5,617	4,704

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	78,749	85,234	89,850	91,780	75,728	82,689	83,797	81,102	78,801	73,495
Finfish	32,545	41,801	52,130	38,739	30,864	28,587	23,792	22,640	20,117	18,258
Shellfish and Other	46,204	43,433	37,719	53,041	44,865	54,102	60,005	58,462	58,684	55,237
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	2,754	2,706	2,156	2,413	2,316	2,260	2,031	1,906	1,795	1,695
Atlantic herring	8,729	13,839	28,330	16,505	10,431	9,539	4,535	2,159	1,180	450
Atlantic mackerel	162	5,497	714	539	1,906	1,143	695	3,994	1,295	2,583
Goosefish	3,242	2,873	2,818	2,898	2,529	2,202	2,061	3,059	3,159	2,073
Other flounders	614	663	1,367	2,158	1,057	766	938	215	122	101
Quahog clam	666	903	784	764	684	660	546	512	518	342
Scups and porgies	6,336	6,311	7,346	6,949	6,794	6,809	5,973	4,714	4,584	4,291
Sea scallop	690	944	1,646	841	677	897	2,310	2,482	2,714	1,273
Squid	25,997	11,689	12,609	24,938	20,495	32,914	33,776	34,871	32,012	33,465
Summer flounder	2,824	2,409	2,193	2,056	1,716	1,306	896	1,023	1,661	1,702

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	4.64	4.48	4.51	4.85	5.34	5.26	5.42	5.75	6.15	5.62
Atlantic herring	0.15	0.16	0.17	0.14	0.13	0.16	0.21	0.26	0.36	0.23
Atlantic mackerel	0.62	0.51	0.47	0.57	0.56	0.39	0.41	0.32	0.30	0.43
Goosefish	1.42	1.34	0.97	1.03	1.08	1.13	1.00	0.76	0.80	0.59
Other flounders	1.31	1.55	1.55	1.37	1.68	1.91	1.65	2.91	3.08	2.02
Quahog clam	5.89	5.72	6.03	6.67	7.98	8.51	9.17	9.37	10.35	9.92
Scups and porgies	0.52	0.62	0.50	0.59	0.63	0.60	0.52	0.58	0.56	0.56
Sea scallop	9.90	9.73	11.32	12.21	11.94	11.42	9.86	8.88	9.03	8.91
Squid	0.78	1.09	1.05	0.71	0.99	1.03	0.84	0.93	0.97	0.74
Summer flounder	2.27	2.88	3.08	3.55	3.56	4.20	4.80	4.61	3.38	2.76

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Rhode Island Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	91	9,032	3,562	5,439
Private Boat	245	27,362	14,473	20,256
Shore	370	40,093	19,580	29,163
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	706	76,487	37,615	54,858

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
66,215	5,568	28,762	31,885

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	296	268	383	464	298	392	326	342	NA	NA
Coastal	105	99	129	160	123	149	132	109	NA	NA
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	190	169	255	304	175	243	194	233	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	3,750	3,957	3,316	3,351	3,134	2,999	2,318	2,553	3,739	2,848
For-Hire	39	41	47	52	50	49	35	43	34	40
Private Boat	1,247	1,028	1,109	1,058	1,310	825	774	974	1,384	1,036
Shore	2,464	2,888	2,159	2,241	1,774	2,124	1,508	1,536	2,321	1,772

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic bonito	H	NA	< 1	9	1	1	0	10	11	33	11
	R	NA	0	11	9	5	23	< 1	26	35	7
Atlantic cod	H	7	57	< 1	19	49	77	5	9	12	10
	R	36	3	< 1	7	33	59	< 1	3	5	9
Black seabass	H	102	226	166	404	434	508	328	706	517	616
	R	489	2,145	1,623	1,981	1,405	2,319	1,867	2,671	3,436	3,074
Bluefish	H	414	2,312	658	463	90	145	419	120	380	221
	R	1,185	1,356	2,000	257	1,412	587	116	152	612	869
Scup	H	1,196	1,032	2,508	2,664	1,219	1,551	1,383	2,377	3,272	1,588
	R	1,486	1,670	1,669	1,451	1,604	2,961	1,863	1,796	2,294	1,297
Striped bass	H	202	131	308	172	67	128	60	39	104	37
	R	621	1,292	2,574	438	1,653	1,416	1,543	2,180	2,132	1,285
Summer flounder	H	380	224	235	340	222	113	156	169	214	120
	R	1,772	928	938	910	630	476	784	791	1,319	810
Tautog	H	79	341	540	239	296	344	141	330	369	229
	R	480	846	793	422	1,113	1,052	545	2,006	1,243	1,217
Winter flounder	H	0	0	NA	< 1	< 1	2	8	< 1	< 1	< 1
	R	< 1	3	NA	1	0	< 1	< 1	0	0	0
Yellowfin tuna	H	NA	NA	13	1	8	< 1	NA	NA	< 1	NA
	R	NA	NA	0	0	11	0	NA	NA	< 1	NA

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Non-coastal data are not available because all of the state's residents are considered coastal county residents.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Rhode Island's State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	28,801 (0.4%)	444,948 (0.3%)	22.7 (0.3%)	35.5 (0.3%)	61.3	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	9	10	8	8	6	6	ds	8	NA
	Receipts	1,168	1,441	1,393	1,418	1,381	1,374	ds	154	NA
Seafood sales, retail	Firms	25	20	22	16	15	14	16	12	NA
	Receipts	3,033	2,536	2,501	1,331	1,259	1,569	1,059	1,243	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	4	3	3	3	3	2	NA	NA	NA
	Employees	178	ds	ds	ds	71	ds	NA	NA	NA
	Payroll	5,544	ds	ds	ds	2,243	ds	NA	NA	NA
Seafood Sales, Wholesale	Establishments	34	32	31	28	28	26	22	23	22
	Employees	230	278	182	188	182	164	130	131	136
	Payroll	10,264	13,064	8,412	8,763	8,140	8,567	7,308	7,261	7,429
Seafood sales, retail	Establishments	23	24	24	27	26	24	24	22	21
	Employees	109	111	113	114	113	100	106	112	103
	Payroll	2,232	2,388	2,610	2,608	2,925	2,932	2,971	3,052	2,885

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	30	37	33	33	33	30	27	26	25
	Employees	916	717	768	939	902	757	565	535	452
	Payroll	33,316	32,070	34,483	42,200	41,096	34,132	28,098	27,363	21,016
Deep Sea Freight Transportation	Establishments	2	2	1	1	2	2	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Deep Sea Passenger Transportation	Establishments	1	1	2	3	3	2	NA	NA	NA
	Employees	ds	ds	ds	ds	18	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	1,574	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	2	1	1	1	1	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Port and Harbor Operations	Establishments	1	5	2	3	3	3	3	3	3
	Employees	ds	ds	ds	ds	18	14	19	20	17
	Payroll	ds	ds	ds	ds	951	813	1,040	1,025	1,003
Marine Cargo Handling	Establishments	5	4	4	3	2	3	3	3	3
	Employees	ds	ds	ds	ds	ds	244	ds	97	89
	Payroll	ds	ds	ds	ds	ds	6,495	ds	5,795	6,322
Navigational Services to Shipping	Establishments	8	7	7	6	6	6	7	6	6
	Employees	107	ds	ds	ds	69	81	83	72	55
	Payroll	4,002	3,272	ds	ds	4,209	3,771	4,578	4,502	4,980
Marinas	Establishments	71	67	71	65	72	71	63	74	73
	Employees	460	424	466	449	409	435	375	433	478
	Payroll	22,618	20,811	24,214	24,876	25,206	26,264	20,323	26,166	26,994

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Mid-Atlantic Region

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



Fisherman with catch in Virginia Beach, Virginia.
Photo: Captain Albert E. Theberge, NOAA Corps (ret.).

MANAGEMENT CONTEXT

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

Mid-Atlantic Region FMPs

- Atlantic mackerel, squid and butterfish
- Atlantic bluefish
- Spiny dogfish (with the NEFMC)
- Summer flounder, scup and black sea bass
- Surfclam and ocean quahog
- Golden tilefish
- Monkfish (with the NEFMC)

Bluefish (Atlantic coast stock) and Atlantic mackerel (Gulf of Maine/Cape Hatteras stock) were the only stock/stock complexes in the Mid-Atlantic region listed as overfished in 2020. Atlantic mackerel (Gulf of Maine/Cape Hatteras stock) was also determined to be experiencing overfishing; no other stock managed by the MAFMC was determined to be experiencing overfishing in 2020.

Catch Share Programs

Two catch share programs operate in the Mid-Atlantic: 1) Surfclam and Ocean Quahog IFQ Program, and 2) Golden Tilefish IFQ Program. Following is a description of these catch share programs and their performance. The landings revenues for these programs totaled $54.4 million in 2019.

Surfclam and Ocean Quahog IFQ Program: This program was implemented in 1990 to conserve the surfclam and quahog resource and stabilize harvest rates; simplify regulatory requirements to minimize public and private management costs; promote economic efficiency by bringing harvest capacity in line with processing and biological capacity; and create a management approach that is flexible and adaptive to short-term events or circumstances. The performance metrics for the surfclam and ocean quahog fisheries are presented separately here because these fisheries are prosecuted as independent fisheries despite being in the same catch share program. The 2019 key performance indicators of the surfclam program show that relative to the baseline period (the three-year period prior to implementation), landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while quota and inflation-adjusted revenue per active vessel increased.

The 2019 key performance indicators of the ocean quahog program show that relative to the baseline period, quota, landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while inflation-adjusted revenue per active vessel increased.

Golden Tilefish IFQ Program: This program was implemented in 2009 to reduce over-capacity and eliminate problems associated with the race to fish golden tilefish. This IFQ program is unique because many key events occurred outside the traditional management process. Prior to the implementation of the IFQ program, fishermen crafted internal agreements that promoted cooperation. Their cooperative processes helped fishing businesses stay viable under new regulations, which laid the foundation for implementing the IFQ program. The 2019 key performance indicators of the program show that relative to the baseline period (the three-year period prior to implementation), quota, landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while inflation-adjusted revenue per active vessel increased.

COMMERCIAL FISHERIES — MID-ATLANTIC REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key Mid-Atlantic Commercial Species

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

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[1]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry in New Jersey generated the largest employment impacts in the Mid-Atlantic region with 53,313 full- and part-time jobs. New Jersey also generated the largest sales impacts ($11.2 billion), value-added impacts ($3.9 billion), and income impacts ($2.3 billion).

Landings Revenue

In 2020, landings revenue in the Mid-Atlantic Region totaled $512.6 million, an 8% decrease from 2011 (a 20% decrease in real terms after adjusting for inflation) and a 3% increase from 2019. Landings revenue was highest in Virginia ($214.4 million), followed by New Jersey ($185.3 million).

Shellfish and other landings revenue accounted for 72% of all landings revenue. In 2020, sea scallop ($137.7 million), blue crab ($87.5 million), and menhaden ($86.4 million) had the highest landings revenue in this region. Together, these top three species accounted for 61% of total landings revenue.

From 2011 to 2020, eastern oyster (296%, 242% in real terms), menhaden (118%, 88% in real terms), and quahog clam (50%, 30% in real terms) had the largest increases, while Atlantic surf clam (-99%, -99% in real terms), American lobster (-49%, -56% in real terms), and sea scallop (-39%, -48% in real terms) had the largest decreases. From 2019 to 2020, menhaden (108%), quahog clam (20%), and sea scallop (2%) had the largest increases, while Atlantic surf clam (-98%), squid (-37%), and summer flounder (-18%) had the largest decreases.

[1] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]

Commercial Revenue: Largest Increases

From 2011:
- Eastern oyster (296%, 242% in real terms)
- Menhaden (118%, 88% in real terms)
- Quahog clam (50%, 30% in real terms)

From 2019:
- Menhaden (108%)
- Quahog clam (20%)
- Sea scallop (2%)

Commercial Revenue: Largest Decreases

From 2011:
- Atlantic surf clam (-99%, -99% in real terms)
- American lobster (-49%, -56% in real terms)
- Sea scallop (-39%, -48% in real terms)

From 2019:
- Atlantic surf clam (-98%)
- Squid (-37%)
- Summer flounder (-18%)

Commercial Landings: Largest Increases

From 2011:
- Eastern oyster (112%)
- Quahog clam (46%)

From 2019:
- American lobster (6%)
- Quahog clam (3%)
- Summer flounder (0.6%)

Commercial Landings: Largest Decreases

From 2011:
- Atlantic surf clam (-99%)
- American lobster (-60%)
- Blue crab (-52%)

From 2019:
- Atlantic surf clam (-98%)
- Blue crab (-23%)
- Striped bass (-17%)

Landings

In 2020, Mid-Atlantic Region commercial fishermen landed over 559.4 million pounds of finfish and shellfish. This represents a 30% decrease from 2011 and a 13% decrease from 2019. Menhaden contributed the highest landings volume in the region, accounting for 67% of total landing weight.

From 2011 to 2020, eastern oyster (112%) and quahog clam (46%) had the largest increases, while Atlantic surf clam (-99%), American lobster (-60%), and blue crab (-52%) had the largest decreases. From 2019 to 2020, American lobster (6%), quahog clam (3%), and summer flounder (0.6%) had the largest increases, while Atlantic surf clam (-98%), blue crab (-23%), and striped bass (-17%) had the largest decreases.

Prices

In 2020, eastern oyster ($12.01 per pound) received the highest ex-vessel price in the region. Landings of menhaden ($0.23 per pound) had the lowest ex-vessel price. From 2011 to 2020, menhaden (191%, 151% in real terms), eastern oyster (87%, 62% in real terms), and blue crab (77%, 53% in real terms) had the largest increases, while squid (-11%, -23% in real terms) had the largest decreases. From 2019 to 2020, menhaden (133%), quahog clam (17%), and blue crab (15%) had the largest increases, while squid (-29%), summer flounder (-19%), and American lobster (-8%) had the largest decreases.

RECREATIONAL FISHERIES — MID-ATLANTIC REGION

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. This recreational fisheries section reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[2]

[2] Atlantic and Gulf recreational catch and effort estimates are based upon the MRIP estimates released in 2018.

Key Mid-Atlantic Region Recreational Species[3]

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

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the Mid-Atlantic Region is based on spending by recreational anglers.[4] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

The greatest employment impacts from expenditures on saltwater recreational fishing in the Mid-Atlantic Region were generated in New York (4,872 jobs), followed by New Jersey (4,455 jobs) and Virginia (3,449 jobs). The largest sales impacts were observed in New Jersey ($724.4 million), followed by New York ($428.8 million) and Virginia ($389.7 million). The biggest income impacts were generated in New Jersey ($296.5 million), followed by New York ($189.1 million) and Virginia ($143.2 million). The greatest value-added impacts were in New Jersey ($469.4 million), followed by New York ($328.1 million) and Virginia ($253.7 million).

A large portion of the approximately 1.8 billion in trip expenses came from trips in the private boat (55.2%) and shore (39.5%) sectors.

Participation

Due to changes in data availability after 2018, angler participation data is not being reported at the state level for years after 2018.

Fishing Trips

In 2020, recreational fishermen took 49.1 million fishing trips in the Mid-Atlantic Region. This number represented an 8% decrease from 2011 and a 14% increase from 2019. The largest proportions of trips were taken in the shore mode (62%) and private boat (37%). States with the highest number of recorded trips in the Mid-Atlantic Region were New Jersey (16 million trips) and New York (14.8 million trips).

Harvest and Release Trends

Of the Mid-Atlantic Region's key species and species groups, summer flounder (30.6 million fish), spot (29.7 million fish), and black sea bass (24.5 million fish) were most frequently caught by recreational fishermen. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, scup (142%), tautog (56%), and striped bass (55%) had the largest increases, while

[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

winter flounder (-91%), bluefish (-60%), and Atlantic croaker (-38%) had the largest decreases. From 2019 to 2020, Atlantic croaker (47%), winter flounder (45%), and striped bass (7%) had the largest increases, while weakfish (-51%), bluefish (-28%), and tautog (-8%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Scup (142%)
- Tautog (56%)
- Striped bass (55%)

From 2019:
- Atlantic croaker (47%)
- Winter flounder (45%)
- Striped bass (7%)

Harvest and Release: Largest Decreases

From 2011:
- Winter flounder (-91%)
- Bluefish (-60%)
- Atlantic croaker (-38%)

From 2019:
- Weakfish (-51%)
- Bluefish (-28%)
- Tautog (-8%)

MARINE ECONOMY — MID-ATLANTIC REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[5]

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing 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 U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

The Bureau of Labor Statistics suppressed the CFLQ value for Delaware and Maryland for 2019. New Jersey had the highest CFLQ at 1.32. Virginia had a CFLQ value of 1.03.

In 2019, 1.2 million employer establishments operated throughout the entire Mid-Atlantic Region (including marine and non-marine related establishments). These establishments employed 18.7 million workers and had a total annual payroll of $1.2 trillion. The combined gross state product of Delaware, Maryland, New Jersey, New York, and Virginia was approximately $3.5 trillion in 2019.

Seafood Sales and Processing[7]

Seafood Product Preparation and Packaging: In 2019, the Mid-Atlantic Region had 67 employer firms in the seafood product preparation and packaging sector (a 2% increase from 2011). The greatest number of establishments in this sector was in Virginia (19), followed by Maryland (18) and New Jersey (16).

Retail Seafood Sales: In 2019, there were 630 employer firms in the seafood retail sector In the Mid-Atlantic Region (a 5% decrease from 2011). The greatest number of establishments in this sector was in New York (370), followed by New Jersey (111) and Maryland (76).

Wholesale Seafood Sales: There were 435 employer firms in the seafood wholesale sector in the Mid-Atlantic Region in 2019 (a 14% decrease from 2011). The greatest number of establishments in this sector was in New York (258), followed by New Jersey (69) and Virginia (52).

Transportation Support and Marine Operations

Data for the transportation support and marine operations sectors of the Mid-Atlantic Region's economy were largely

[5] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).
[6] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.'
[7] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently, this information is not available from the Census Bureau for 2019.

suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the regional economy. For example, in 2019, the ship and boat building sector in the Mid-Atlantic Region accounted for $2.3 billion in payroll. The marine cargo handling sector in Delaware, Maryland, New Jersey and New York totaled $760.4 million in payroll in 2019.

Tables | Mid-Atlantic Region



2020 Economic Impacts of the Mid-Atlantic Seafood Industry (thousands of dollars; number of jobs)

State	Landings Revenue	With Imports				Without Imports			
		Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Delaware	10,147	660	135,712	25,703	44,251	352	47,742	10,192	16,222
Maryland	68,535	20,915	3,437,255	779,413	1,252,027	5,021	316,107	115,515	157,760
New Jersey	185,264	53,313	11,170,215	2,312,149	3,886,532	7,079	689,892	227,399	327,595
New York	34,226	38,132	5,995,855	1,240,690	2,082,226	2,171	121,903	42,081	59,013
Virginia	214,431	24,880	3,234,096	832,729	1,278,891	14,802	976,067	374,523	505,782

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	554,607	509,999	440,098	478,267	528,072	550,673	510,777	477,763	497,961	512,603
Finfish	116,351	125,577	115,568	114,664	110,358	103,625	110,557	104,197	109,956	144,272
Shellfish and Other	438,256	384,422	324,530	363,604	417,714	447,048	400,220	373,566	388,005	368,331
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	4,762	5,271	4,062	3,853	3,308	3,125	3,420	2,909	2,476	2,416
Atlantic surf clam	18,737	16,813	13,688	11,455	13,004	12,477	1,465	12,546	11,910	230
Blue crab	101,638	101,947	78,901	89,022	96,449	108,083	90,693	84,659	98,665	87,469
Eastern oyster	13,043	20,231	43,700	54,577	60,951	46,551	61,899	52,503	51,349	51,651
Menhaden	39,675	40,043	33,778	33,332	40,325	34,081	40,405	41,477	41,453	86,408
Quahog clam	27,608	29,502	35,902	38,153	28,133	45,239	38,390	35,773	34,422	41,475
Sea scallop	227,449	168,921	100,411	125,679	150,716	180,782	137,369	120,817	134,770	137,659
Squid	20,562	17,661	12,039	8,294	8,378	15,325	15,412	22,625	23,830	15,048
Striped bass	12,680	13,877	17,802	16,057	12,189	14,077	15,447	12,733	11,594	9,565
Summer flounder	15,614	17,190	17,150	13,195	14,398	13,913	12,061	11,948	14,019	11,455

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	798,970	762,886	586,783	595,694	644,299	589,376	617,657	629,462	644,498	559,362
Finfish	568,383	562,347	431,484	448,349	493,628	418,489	440,535	456,118	469,739	420,970
Shellfish and Other	230,587	200,539	155,299	147,345	150,670	170,886	177,122	173,344	174,760	138,391
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	1,105	1,546	1,228	844	654	601	623	485	416	442
Atlantic surf clam	30,272	27,008	22,788	19,447	21,392	20,169	2,167	18,580	17,573	340
Blue crab	104,425	88,974	51,667	54,414	59,730	74,652	63,253	58,998	65,929	50,640
Eastern oyster	2,031	2,738	4,922	5,456	6,626	5,036	5,110	4,689	4,549	4,300
Menhaden	496,876	492,532	366,584	379,997	435,313	363,902	388,167	401,358	415,720	372,117
Quahog clam	3,551	3,730	4,586	5,016	3,256	6,114	5,203	4,935	5,053	5,195
Sea scallop	23,386	17,627	8,855	10,256	12,202	15,619	15,235	13,376	14,713	13,690
Squid	33,150	25,435	14,516	8,142	7,102	15,078	30,116	35,792	30,929	27,343
Striped bass	5,464	5,337	4,676	4,878	3,556	3,520	3,601	3,275	3,422	2,844
Summer flounder	8,673	7,794	8,025	4,901	4,975	3,725	2,846	2,907	4,539	4,567

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	4.31	3.41	3.31	4.56	5.06	5.20	5.49	6.00	5.95	5.46
Atlantic surf clam	0.62	0.62	0.60	0.59	0.61	0.62	0.68	0.68	0.68	0.68
Blue crab	0.97	1.15	1.53	1.64	1.61	1.45	1.43	1.43	1.50	1.73
Eastern oyster	6.42	7.39	8.88	10.00	9.20	9.24	12.11	11.20	11.29	12.01
Menhaden	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.23
Quahog clam	7.77	7.91	7.83	7.61	8.64	7.40	7.38	7.25	6.81	7.98
Sea scallop	9.73	9.58	11.34	12.25	12.35	11.57	9.02	9.03	9.16	10.06
Squid	0.62	0.69	0.83	1.02	1.18	1.02	0.51	0.63	0.77	0.55
Striped bass	2.32	2.60	3.81	3.29	3.43	4.00	4.29	3.89	3.39	3.36
Summer flounder	1.80	2.21	2.14	2.69	2.89	3.74	4.24	4.11	3.09	2.51

2020 Economic Impacts of the Mid-Atlantic Recreational Fishing (thousands of dollars; number of jobs)

State	Trips	Jobs	Sales	Income	Value Added
Delaware	2,118	903	109,964	36,497	71,650
Maryland	7,974	3,393	334,972	124,426	214,509
New Jersey	16,017	4,455	724,406	296,484	469,413
New York	14,841	4,872	428,806	189,097	328,055
Virginia	8,164	3,449	389,716	143,185	253,690

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
1,797,315	95,551	992,321	709,443

Recreational Anglers by Residential Area (thousands of anglers)[1,2]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	2,389	2,268	2,219	2,241	1,984	2,407	1,898	1,917	NA	NA
Coastal	2,244	2,093	2,080	2,111	1,860	2,238	1,751	1,811	NA	NA
Non-Coastal	145	175	139	130	124	169	147	106	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	53,214	53,129	51,128	51,710	47,683	48,359	46,005	39,030	42,974	49,115
For-Hire	1,031	983	1,361	1,209	1,299	688	743	770	839	659
Private Boat	22,649	22,528	21,648	20,821	18,975	19,112	18,863	14,692	16,312	18,102
Shore	29,535	29,617	28,119	29,679	27,409	28,558	26,399	23,569	25,823	30,354

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	10,726	12,385	18,080	13,390	10,437	7,969	8,134	5,894	3,181	6,887
	R	15,564	26,605	30,906	15,221	8,602	8,250	11,677	5,792	8,021	9,528
Black sea bass	H	1,092	2,171	2,054	2,062	3,146	3,935	4,292	2,222	2,812	2,583
	R	8,802	24,303	15,652	11,901	14,406	23,076	28,100	13,787	18,996	21,916
Bluefish	H	8,379	7,886	5,807	10,557	5,256	6,108	6,720	3,419	4,799	2,104
	R	13,772	15,150	9,207	15,481	10,901	11,933	12,805	6,596	7,691	6,856
Scup	H	2,336	1,912	3,376	2,832	7,101	4,450	8,653	5,831	7,228	7,960
	R	3,760	5,647	7,025	4,907	8,331	13,098	17,450	7,781	7,037	6,775
Spot	H	12,741	14,839	16,002	18,694	3,174	6,456	19,198	8,787	10,628	18,670
	R	8,266	11,896	18,447	6,604	2,746	3,591	5,644	4,109	7,969	10,990
Striped bass	H	3,529	2,699	3,785	3,103	2,368	3,047	2,331	1,701	1,731	1,512
	R	9,350	13,897	15,757	15,196	16,664	21,183	14,468	13,802	16,891	18,454
Summer flounder	H	3,477	4,969	5,633	4,337	3,249	3,680	2,741	1,966	1,990	3,153
	R	48,568	36,828	35,595	36,106	28,159	24,784	23,194	19,327	25,749	27,479
Tautog	H	972	577	1,055	1,667	987	1,349	1,048	584	999	955
	R	5,018	5,626	7,082	5,460	7,617	10,302	9,736	6,149	9,196	8,377
Weakfish	H	28	386	135	59	100	58	120	33	127	66
	R	1,215	1,972	626	652	1,219	1,978	819	431	1,455	716
Winter flounder	H	234	177	21	124	18	93	9	14	< 1	14
	R	259	125	104	47	105	31	23	57	30	32

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Delaware anglers estimates are not available for the non-coastal mode.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

Tables | Delaware



2020 Economic Impacts of the Delaware Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	660	135,712	25,703	44,251	352	47,742	10,192	16,222
Commercial Harvesters	179	18,591	4,424	5,990	179	18,591	4,424	5,990
Seafood Processors and Dealers	65	13,951	2,454	4,719	34	7,198	1,266	2,435
Importers	217	71,750	11,499	21,872	NA	NA	NA	NA
Seafood Wholesalers and Distributors	58	9,378	3,566	4,251	23	3,635	1,382	1,648
Retail	141	22,043	3,760	7,418	117	18,319	3,119	6,150

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	7,092	8,464	7,307	7,220	6,843	11,494	9,807	10,557	11,831	10,147
Finfish	906	679	940	283	506	506	308	664	1,033	936
Shellfish and Other	6,186	7,785	6,368	6,937	6,337	10,987	9,499	9,892	10,798	9,211
Key Species	-	-	-	-	-	-	-	-	-	-
American eel	274	159	244	156	127	130	NA	97	43	6
Black drum	NA	4	11	NA	17	20	0	11	4	NA
Black sea bass	196	NA	NA	NA	304	301	278	513	494	429
Blue crab	4,819	6,664	4,576	4,379	4,498	9,145	7,318	7,574	8,479	7,805
Eastern oyster	347	345	407	420	358	498	701	644	994	469
Knobbed whelk	106	18	299	438	381	294	237	640	518	261
Northern quahog clam	143	123	177	133	97	69	101	73	73	42
Quahog clam	143	123	177	133	97	69	101	73	73	42
Summer flounder	2	NA	NA	5	4	7	5	2	4	2
Weakfish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	4,921	5,640	4,048	3,727	3,529	5,684	5,080	5,283	5,994	5,276
Finfish	448	424	441	337	390	329	215	455	428	510
Shellfish and Other	4,473	5,216	3,607	3,390	3,139	5,356	4,864	4,828	5,565	4,767
Key Species	-	-	-	-	-	-	-	-	-	-
American eel	91	54	83	62	45	45	NA	31	14	2
Black drum	NA	11	25	NA	39	49	1	32	6	NA
Black sea bass	86	NA	NA	NA	112	97	117	172	173	183
Blue crab	3,502	4,571	2,488	2,000	2,124	4,555	3,788	3,842	4,659	4,108
Eastern oyster	62	60	71	73	61	72	79	107	120	82
Knobbed whelk	74	12	125	189	159	123	99	267	149	77
Northern quahog clam	39	32	43	41	30	18	28	20	21	12
Quahog clam	39	32	43	41	30	18	28	20	21	12
Summer flounder	1	NA	NA	2	1	2	1	1	1	1
Weakfish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American eel	3.03	2.93	2.94	2.50	2.83	2.93	NA	3.08	3.13	2.95
Black drum	NA	0.35	0.43	NA	0.44	0.41	0.61	0.35	0.67	NA
Black sea bass	2.29	NA	NA	NA	2.73	3.11	2.36	2.98	2.86	2.35
Blue crab	1.38	1.46	1.84	2.19	2.12	2.01	1.93	1.97	1.82	1.90
Eastern oyster	5.56	5.76	5.71	5.71	5.85	6.90	8.83	6.03	8.27	5.73
Knobbed whelk	1.43	1.43	2.40	2.31	2.40	2.40	2.40	2.40	3.47	3.40
Northern quahog clam	3.72	3.84	4.07	3.25	3.26	3.75	3.61	3.61	3.52	3.58
Quahog clam	3.72	3.84	4.07	3.25	3.26	3.75	3.61	3.61	3.52	3.58
Summer flounder	2.42	NA	NA	2.90	3.09	3.24	3.27	2.95	3.11	3.06
Weakfish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Delaware Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	36	3,263	1,222	1,850
Private Boat	293	40,733	12,515	25,233
Shore	574	65,968	22,760	44,566
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	903	109,964	36,497	71,650

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
98,819	2,133	38,474	58,212

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	318	262	179	239	151	272	174	133	NA	NA
Coastal	129	111	82	93	67	104	80	64	NA	NA
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	190	151	97	146	84	168	94	69	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	2,878	2,516	2,435	2,491	2,071	2,130	1,991	2,147	2,108	2,118
For-Hire	18	21	37	39	37	14	14	7	21	15
Private Boat	1,028	973	950	858	744	637	680	701	596	716
Shore	1,832	1,523	1,448	1,593	1,289	1,480	1,297	1,439	1,491	1,387

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	213	202	530	806	335	25	66	12	53	54
	R	215	1,036	1,812	1,397	309	391	230	85	102	287
Atlantic mackerel	H	NA	0	< 1	NA	< 1	0	< 1	NA	NA	NA
	R	NA	< 1	< 1	NA	0	< 1	0	NA	NA	NA
Black sea bass	H	121	108	48	48	57	95	112	88	43	141
	R	580	605	512	528	526	780	485	371	378	958
Bluefish	H	124	95	57	333	235	110	261	76	151	54
	R	396	400	161	802	464	359	612	536	430	166
Striped bass	H	44	51	71	26	42	6	28	4	11	2
	R	338	358	273	530	309	218	254	352	368	456
Summer flounder	H	141	101	120	189	120	173	98	85	91	207
	R	1,330	556	518	651	431	557	591	513	441	575
Tautog	H	118	95	97	132	29	46	32	9	24	47
	R	312	226	322	200	113	277	388	250	453	314
Weakfish	H	< 1	11	16	7	2	1	1	2	10	5
	R	14	213	52	55	34	63	38	27	105	57
White perch	H	344	183	331	305	118	10	99	117	318	128
	R	876	534	1,139	186	355	46	179	416	189	627
Yellowfin tuna	H	1	< 1	2	1	5	< 1	NA	1	< 1	3
	R	< 1	0	< 1	< 1	< 1	0	NA	< 1	0	0

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Non-coastal data are not available because all of the state's residents are considered coastal county residents.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Delaware State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	26,142 (0.3%)	413,410 (0.3%)	23.9 (0.3%)	34.6 (0.3%)	77.0	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	ds	ds	ds	ds	ds	3	5	9	NA
	Receipts	ds	ds	ds	ds	ds	558	458	786	NA
Seafood sales, retail	Firms	9	11	8	13	11	11	12	11	NA
	Receipts	1,226	1,333	520	452	479	608	2,868	914	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	1	1	1	2	1	2	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Seafood Sales, Wholesale	Establishments	7	7	9	8	6	6	5	6	7
	Employees	ds	ds	ds	ds	54	56	67	112	125
	Payroll	ds	ds	3,020	2,381	2,404	2,707	3,072	5,222	6,569
Seafood sales, retail	Establishments	18	16	17	17	14	12	12	10	11
	Employees	49	ds	60	52	36	45	40	39	30
	Payroll	1,493	1,545	1,396	1,261	1,224	1,037	1,370	1,352	1,363

Transport, Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	3	4	4	6	6	5	4	4	3
	Employees	ds	50	61	55	57	53	ds	45	30
	Payroll	ds	2,313	2,516	2,174	2,168	2,410	ds	1,683	1,061
Deep Sea Freight Transportation	Establishments	2	1	1	2	4	2	NA	NA	NA
	Employees	ds	ds	ds	ds	98	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	8,771	ds	NA	NA	NA
Deep Sea Passenger Transportation	Establishments	NA	NA	2	2	1	1	NA	NA	NA
	Employees	NA	NA	ds	ds	ds	ds	NA	NA	NA
	Payroll	NA	NA	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	NA	NA	NA	NA	1	2	5	3	3
	Employees	NA	NA	NA	NA	ds	ds	38	33	30
	Payroll	NA	NA	NA	NA	ds	ds	4,534	2,528	2,053
Port and Harbor Operations	Establishments	3	4	3	2	2	2	NA	3	3
	Employees	44	ds	ds	ds	ds	ds	NA	11	689
	Payroll	1,512	ds	ds	ds	ds	ds	NA	5,092	32,508
Marine Cargo Handling	Establishments	3	2	3	3	3	3	4	3	NA
	Employees	511	ds	565	541	577	540	513	574	NA
	Payroll	19,203	ds	20,698	22,789	23,370	22,994	25,453	25,421	NA
Navigational Services to Shipping	Establishments	8	8	8	10	10	11	12	12	11
	Employees	78	ds	82	92	81	92	101	92	102
	Payroll	5,096	3,111	5,330	5,350	5,938	6,709	6,796	7,494	7,119
Marinas	Establishments	17	18	19	18	18	18	15	17	14
	Employees	ds	67	64	95	86	86	67	71	83
	Payroll	3,106	1,963	2,196	2,293	2,527	2,527	2,128	2,478	2,830

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Maryland



2020 Economic Impacts of the Maryland Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	20,915	3,437,255	779,413	1,252,027	5,021	316,107	115,515	157,760
Commercial Harvesters	2,105	120,884	34,526	53,841	2,105	120,884	34,526	53,841
Seafood Processors and Dealers	2,714	288,080	112,263	143,354	477	50,578	19,710	25,168
Importers	7,326	2,425,563	388,743	739,418	NA	NA	NA	NA
Seafood Wholesalers and Distributors	1,341	211,733	71,973	95,567	151	23,770	8,080	10,729
Retail	7,429	390,994	171,908	219,848	2,289	120,875	53,200	68,022

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	82,565	84,305	81,136	92,117	88,313	90,749	81,512	71,985	77,944	68,535
Finfish	11,278	14,659	12,710	18,530	12,706	15,621	13,469	10,972	12,817	10,238
Shellfish and Other	71,287	69,646	68,427	73,587	75,607	75,128	68,043	61,014	65,127	58,296
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	482	689	455	492	342	179	138	77	5	3
Black sea bass	507	421	710	834	792	896	1,236	1,254	1,192	865
Blue crab	60,326	60,467	50,167	52,849	52,084	54,534	48,535	45,308	48,058	41,750
Eastern oyster	3,691	5,710	13,827	15,687	15,093	12,265	10,473	6,741	9,949	10,150
Menhaden	685	1,669	902	1,380	1,222	1,036	648	733	627	966
Sea scallop	552	202	8	1,328	3,077	1,804	945	1,209	2,403	1,710
Shad	118	151	146	486	361	233	3	566	248	185
Shark	422	385	349	299	228	327	364	137	73	117
Striped bass	5,623	6,172	8,043	8,092	6,194	7,131	7,061	6,022	6,015	5,307
Summer flounder	463	380	541	598	597	668	564	608	402	433

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	78,163	77,264	47,200	50,210	53,988	59,150	51,213	48,967	47,211	35,111
Finfish	18,195	28,784	15,353	20,917	16,920	16,308	11,082	13,176	12,257	9,792
Shellfish and Other	59,968	48,480	31,847	29,293	37,068	42,841	40,131	35,790	34,954	25,320
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	804	1,091	864	504	340	162	94	53	3	2
Black sea bass	182	144	234	252	236	272	410	374	370	397
Blue crab	51,163	43,741	24,797	24,690	28,759	36,734	30,655	27,822	28,382	20,733
Eastern oyster	356	618	1,404	1,196	1,191	887	671	465	657	937
Menhaden	8,016	16,383	7,674	8,363	8,786	6,473	3,568	4,388	4,165	3,492
Sea scallop	58	20	1	110	248	151	98	144	253	186
Shad	974	1,514	1,449	1,639	2,145	1,148	3	3,289	1,655	1,233
Shark	1,434	1,334	1,426	1,304	1,259	1,669	2,039	787	105	466
Striped bass	2,343	2,285	1,981	2,353	1,708	1,718	1,829	1,760	1,747	1,589
Summer flounder	259	165	194	192	188	159	137	143	155	201

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	0.60	0.63	0.53	0.98	1.01	1.10	1.47	1.46	1.70	1.55
Black sea bass	2.78	2.92	3.03	3.31	3.35	3.30	3.02	3.35	3.23	2.18
Blue crab	1.18	1.38	2.02	2.14	1.81	1.48	1.58	1.63	1.69	2.01
Eastern oyster	10.37	9.24	9.85	13.11	12.67	13.83	15.60	14.50	15.13	10.83
Menhaden	0.09	0.10	0.12	0.17	0.14	0.16	0.18	0.17	0.15	0.28
Sea scallop	9.54	10.23	12.77	12.11	12.40	11.94	9.68	8.38	9.51	9.21
Shad	0.12	0.10	0.10	0.30	0.17	0.20	1.18	0.17	0.15	0.15
Shark	0.29	0.29	0.24	0.23	0.18	0.20	0.18	0.17	0.69	0.25
Striped bass	2.40	2.70	4.06	3.44	3.63	4.15	3.86	3.42	3.44	3.34
Summer flounder	1.78	2.30	2.80	3.11	3.18	4.20	4.10	4.24	2.60	2.16

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Maryland Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	585	61,527	23,817	37,839
Private Boat	1,431	149,889	55,277	94,732
Shore	1,377	123,556	45,333	81,938
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	3,393	334,972	124,426	214,509

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
302,383	38,525	155,518	108,339

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	836	672	769	792	748	829	659	709	NA	NA
Coastal	415	374	404	413	364	453	353	406	NA	NA
Non-Coastal	49	40	36	41	31	23	41	30	NA	NA
Out-of-State	372	258	329	338	352	352	265	274	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	9,721	9,539	9,710	9,394	9,129	9,364	8,343	6,762	6,836	7,974
For-Hire	154	156	153	189	177	131	211	145	223	219
Private Boat	4,708	5,150	4,861	4,167	4,366	4,160	3,415	2,692	2,756	3,440
Shore	4,859	4,234	4,695	5,038	4,586	5,073	4,717	3,924	3,857	4,316

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	1,531	2,566	2,309	2,197	1,739	659	424	305	70	245
	R	937	7,091	7,557	2,807	1,236	727	2,829	203	1,244	2,870
Black sea bass	H	79	161	27	63	89	207	149	154	129	81
	R	811	1,323	768	956	763	1,054	865	1,282	1,636	830
Bluefish	H	731	349	119	396	287	212	176	275	112	174
	R	1,037	521	723	491	662	556	197	418	227	320
Spot	H	2,125	2,121	2,456	4,396	1,352	1,145	3,251	1,210	2,634	3,640
	R	783	3,292	7,621	2,207	642	713	2,280	943	3,312	5,561
Striped bass	H	1,113	720	1,185	1,640	1,112	1,546	1,092	993	765	735
	R	3,484	9,001	6,676	8,304	8,524	13,781	7,788	7,458	6,998	7,044
Summer flounder	H	47	99	119	118	98	40	57	48	79	80
	R	1,632	852	915	1,358	719	1,712	862	793	938	830
Tautog	H	64	20	23	1	12	4	19	18	< 1	44
	R	340	651	325	5	267	530	761	215	722	310
Weakfish drum	H	< 1	39	4	2	13	2	9	0	7	< 1
	R	51	72	20	27	341	161	41	5	19	5
White perch	H	4,341	5,820	6,827	2,746	3,817	6,028	4,380	2,808	5,223	6,592
	R	7,837	16,250	18,587	7,879	7,200	10,339	7,388	4,141	8,130	7,723
Yellowfin tuna	H	< 1	NA	4	17	12	23	112	< 1	34	52
	R	0	NA	10	4	0	24	10	< 1	20	0

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Maryland State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	139,449 (1.8%)	2,380,865 (1.8%)	137 (1.8%)	230 (2%)	422	ds

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	55	67	49	60	53	64	70	50	NA
	Receipts	2,374	3,030	3,158	3,230	3,133	3,440	3,676	2,971	NA
Seafood sales, retail	Firms	86	96	95	87	87	91	79	77	NA
	Receipts	7,396	6,454	6,147	8,437	8,104	9,426	8,653	10,149	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	17	16	16	17	17	19	15	19	18
	Employees	264	266	309	284	288	260	280	261	265
	Payroll	12,773	13,587	12,455	13,131	13,631	17,775	18,251	18,156	17,391
Seafood Sales, Wholesale	Establishments	57	60	58	58	53	60	54	52	49
	Employees	775	724	636	630	605	654	752	1,072	1,095
	Payroll	38,971	34,194	30,119	31,503	33,739	36,196	41,754	63,195	67,285
Seafood sales, retail	Establishments	88	87	87	83	79	85	77	73	76
	Employees	562	575	574	562	539	561	522	541	502
	Payroll	12,883	13,027	13,623	13,907	15,033	15,910	15,031	15,125	14,704

Transport, Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	35	34	31	35	36	36	31	30	32
	Employees	633	378	371	449	456	482	474	441	474
	Payroll	36,675	14,619	16,822	18,130	20,599	21,425	20,616	21,008	22,179
Deep Sea Freight Transportation	Establishments	16	14	10	11	11	9	10	10	10
	Employees	329	245	139	135	118	140	119	112	180
	Payroll	25,071	17,938	10,041	11,600	11,097	10,396	10,504	12,296	13,712
Deep Sea Passenger Transportation	Establishments	NA	NA	1	NA	NA	NA	NA	NA	NA
	Employees	NA	NA	ds	NA	NA	NA	NA	NA	NA
	Payroll	NA	NA	ds	NA	NA	NA	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	6	4	4	8	6	8	5	NA	3
	Employees	ds	ds	ds	ds	ds	ds	ds	NA	176
	Payroll	ds	ds	538	ds	ds	ds	ds	NA	18,155
Port and Harbor Operations	Establishments	5	22	16	17	15	14	19	18	16
	Employees	ds	1,875	962	1,220	1,349	1,080	1,211	1,401	1,387
	Payroll	ds	93,001	44,436	57,543	55,375	52,510	62,934	69,177	69,426
Marine Cargo Handling	Establishments	17	6	12	12	12	13	11	11	12
	Employees	1,924	ds	1,519	1,132	1,140	1,424	1,292	1,597	1,447
	Payroll	86,680	ds	60,500	60,962	81,751	75,022	78,142	96,776	99,865
Navigational Services to Shipping	Establishments	11	10	11	10	11	11	16	19	21
	Employees	84	ds	245	131	125	114	194	942	1,001
	Payroll	4,259	ds	17,066	6,345	6,411	6,055	11,241	75,779	86,313
Marinas	Establishments	172	159	170	166	172	171	161	165	164
	Employees	1,294	1,276	1,328	1,366	1,380	1,396	1,234	1,300	1,402
	Payroll	43,330	43,531	45,540	47,443	50,633	51,934	47,963	52,729	58,228

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | New Jersey



2020 Economic Impacts of the New Jersey Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	53,313	11,170,215	2,312,149	3,886,532	7,079	689,892	227,399	327,595
Commercial Harvesters	2,630	369,216	97,000	157,329	2,630	369,216	97,000	157,329
Seafood Processors and Dealers	1,791	199,394	75,515	98,562	675	75,089	28,438	37,117
Importers	26,180	8,668,293	1,389,259	2,642,475	NA	NA	NA	NA
Seafood Wholesalers and Distributors	4,304	823,967	264,823	360,107	194	37,147	11,939	16,235
Retail	18,407	1,109,345	485,553	628,059	3,581	208,441	90,023	116,914

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	220,346	187,675	131,345	149,324	166,222	191,154	184,667	169,702	181,741	185,264
Finfish	25,416	27,412	24,472	23,451	28,326	25,366	32,851	29,889	30,761	43,982
Shellfish and Other	194,930	160,263	106,874	125,873	137,896	165,789	151,816	139,813	150,981	141,283
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	3,088	3,938	2,797	2,380	2,248	1,883	2,245	2,052	1,690	1,607
Atlantic herring	414	145	401	615	308	292	482	354	NA	NA
Atlantic mackerel	53	577	18	12	535	79	596	1,298	990	1,160
Black sea bass	970	1,054	1,370	1,603	1,763	1,945	2,823	2,809	2,679	2,653
Blue crab	9,429	10,011	NA	4,157	8,699	5,668	8,946	8,607	8,032	9,562
Goosefish	3,654	3,301	2,453	2,428	2,364	2,470	1,558	1,349	1,415	893
Sea scallop	142,510	110,560	65,190	87,745	97,855	123,362	99,253	83,181	96,386	97,540
Squid	12,806	8,949	5,804	2,643	2,798	7,209	10,437	14,464	16,382	10,885
Summer flounder	5,461	5,433	4,899	4,862	5,059	5,442	4,296	4,549	5,094	5,152
Tilefish	1,063	1,168	1,154	1,760	1,604	1,261	1,217	1,190	1,315	1,152

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	187,153	180,436	119,518	124,925	148,353	132,342	197,584	189,551	175,341	173,948
Finfish	91,423	100,764	54,356	61,113	89,910	68,067	114,825	104,947	93,806	106,472
Shellfish and Other	95,730	79,673	65,162	63,813	58,443	64,275	82,759	84,604	81,535	67,476
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	698	919	660	526	445	350	409	345	291	309
Atlantic herring	2,380	1,106	2,344	4,087	3,428	2,798	3,353	3,374	NA	NA
Atlantic mackerel	106	1,997	46	17	2,188	306	2,778	7,108	5,514	5,295
Black sea bass	294	311	421	494	468	526	899	700	720	1,077
Blue crab	9,611	7,396	NA	3,233	7,247	6,816	6,410	5,435	5,314	5,483
Goosefish	2,275	2,212	2,231	2,172	1,903	1,885	1,388	1,719	1,895	1,183
Sea scallop	14,545	11,379	5,640	7,133	7,847	10,491	10,961	9,206	10,464	9,669
Squid	25,956	17,521	9,189	2,773	2,647	8,512	26,749	30,730	26,464	24,171
Summer flounder	2,831	2,269	2,004	1,826	1,682	1,297	962	1,046	1,599	1,907
Tilefish	360	406	377	582	434	335	438	411	405	377

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	4.42	4.28	4.23	4.52	5.05	5.38	5.49	5.96	5.81	5.20
Atlantic herring	0.17	0.13	0.17	0.15	0.09	0.10	0.14	0.10	NA	NA
Atlantic mackerel	0.50	0.29	0.40	0.73	0.24	0.26	0.21	0.18	0.18	0.22
Black sea bass	3.30	3.39	3.25	3.25	3.76	3.70	3.14	4.01	3.72	2.46
Blue crab	0.98	1.35	NA	1.29	1.20	0.83	1.40	1.58	1.51	1.74
Goosefish	1.61	1.49	1.10	1.12	1.24	1.31	1.12	0.78	0.75	0.75
Sea scallop	9.80	9.72	11.56	12.30	12.47	11.76	9.05	9.04	9.21	10.09
Squid	0.49	0.51	0.63	0.95	1.06	0.85	0.39	0.47	0.62	0.45
Summer flounder	1.93	2.39	2.44	2.66	3.01	4.20	4.47	4.35	3.19	2.70
Tilefish	2.95	2.88	3.06	3.02	3.69	3.76	2.78	2.89	3.25	3.06

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of New Jersey Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	199	22,006	8,025	13,828
Private Boat	2,432	431,705	170,815	274,097
Shore	1,824	270,694	117,644	181,487
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	4,455	724,406	296,484	469,413

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
602,254	13,684	372,825	215,745

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	1,067	1,121	931	1,189	987	916	716	750	NA	NA
Coastal	687	662	581	607	515	507	447	411	NA	NA
Non-Coastal	23	27	20	17	24	32	16	17	NA	NA
Out-of-State	357	431	330	566	448	378	253	322	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	17,532	18,153	15,767	17,012	14,485	13,852	12,288	12,493	13,380	16,017
For-Hire	370	388	532	494	450	234	215	289	292	124
Private Boat	7,129	7,107	6,476	6,260	5,013	4,741	4,848	4,432	4,357	5,702
Shore	10,033	10,659	8,759	10,259	9,021	8,877	7,225	7,772	8,732	10,192

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Black sea bass	H	285	1,364	934	639	440	517	1,500	1,040	831	812
	R	4,454	11,111	8,612	4,789	4,984	6,239	7,939	5,613	5,353	6,400
Bluefin tuna	H	13	< 1	30	11	2	5	22	23	33	22
	R	31	0	0	2	2	9	22	30	55	10
Bluefish	H	3,934	3,133	2,322	4,557	1,765	3,282	3,047	1,421	742	595
	R	6,867	6,407	3,540	7,411	4,001	7,084	7,677	2,512	2,569	2,777
Red hake	H	220	71	104	218	51	41	58	165	278	184
	R	29	259	157	33	17	13	57	93	24	145
Striped bass	H	1,039	742	1,324	502	600	660	626	465	413	520
	R	2,447	1,822	4,349	2,840	2,440	1,808	2,317	2,756	2,709	3,313
Summer flounder	H	1,969	3,086	3,450	2,418	1,180	1,456	1,211	1,045	1,108	1,990
	R	24,558	22,080	19,160	22,209	10,821	12,299	7,785	10,371	13,068	17,112
Tautog	H	314	92	443	533	339	190	569	385	311	309
	R	2,518	1,754	1,811	2,040	1,614	1,984	3,048	2,572	1,787	3,382
Weakfish	H	8	277	90	16	73	12	79	16	35	10
	R	288	1,384	331	194	598	278	147	41	202	91
Winter flounder	H	122	< 1	21	52	3	56	8	14	< 1	14
	R	92	2	89	19	102	21	15	13	1	4
Yellowfin tuna	H	18	183	148	22	13	29	33	147	19	146
	R	< 1	8	6	0	23	20	4	78	6	< 1

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.
[4] Bluefin tuna include bluefin tuna and blue shark.

2019 New Jersey State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	233,888 (2.9%)	3,805,357 (2.9%)	240 (3.2%)	349 (3.1%)	639	1.32

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	29	35	48	45	39	44	44	43	NA
	Receipts	3,447	3,565	4,981	5,736	3,603	3,811	3,701	4,135	NA
Seafood sales, retail	Firms	68	77	74	74	70	68	68	75	NA
	Receipts	8,049	8,972	8,257	7,135	7,711	7,042	9,733	11,051	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	12	11	13	13	15	13	18	15	16
	Employees	518	404	671	647	715	452	716	458	521
	Payroll	17,940	13,747	22,764	21,933	25,929	17,030	27,436	18,988	20,913
Seafood Sales, Wholesale	Establishments	91	82	80	78	78	73	73	77	69
	Employees	935	1,058	765	795	784	753	775	768	756
	Payroll	40,103	44,033	37,405	36,773	39,900	41,239	42,765	41,658	41,495
Seafood sales, retail	Establishments	109	114	114	108	115	116	115	111	111
	Employees	332	382	419	434	446	471	428	412	433
	Payroll	9,264	11,561	11,657	12,520	12,591	13,351	12,696	12,556	15,701

Transport, Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	23	21	24	24	23	24	23	20	22
	Employees	864	901	917	1,080	1,329	1,417	1,594	1,605	1,339
	Payroll	39,810	36,334	41,886	50,459	59,130	64,354	78,326	78,044	71,285
Deep Sea Freight Transportation	Establishments	26	25	20	21	24	22	18	17	17
	Employees	ds	390	225	212	193	187	137	140	121
	Payroll	81,936	27,481	12,263	11,271	11,522	11,988	9,580	9,468	8,413
Deep Sea Passenger Transportation	Establishments	2	2	NA	2	1	1	NA	NA	NA
	Employees	ds	ds	NA	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	NA	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	20	16	16	13	13	15	15	16	13
	Employees	508	402	367	365	414	404	419	441	532
	Payroll	40,587	32,007	32,431	33,308	37,888	38,330	45,683	47,778	54,776
Port and Harbor Operations	Establishments	7	25	18	18	17	18	14	18	18
	Employees	163	ds	ds	ds	106	105	79	865	937
	Payroll	16,933	139,276	5,995	6,334	6,305	6,202	5,457	140,095	150,574
Marine Cargo Handling	Establishments	22	15	20	21	20	20	20	17	18
	Employees	3,744	2,582	6,912	6,082	5,005	4,692	4,454	4,218	4,073
	Payroll	273,636	203,148	538,991	563,746	521,401	519,594	553,019	560,509	584,428
Navigational Services to Shipping	Establishments	17	18	18	18	20	18	23	21	22
	Employees	110	96	106	92	88	75	123	135	109
	Payroll	5,619	5,983	6,057	5,597	6,914	5,851	7,635	8,248	9,256
Marinas	Establishments	206	210	206	190	196	194	191	194	186
	Employees	773	811	787	737	776	826	811	877	923
	Payroll	34,675	35,760	37,606	36,583	38,469	40,971	41,403	44,425	48,241

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | New York



2020 Economic Impacts of the New York Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	38,132	5,995,855	1,240,690	2,082,226	2,171	121,903	42,081	59,013
Commercial Harvesters	1,062	61,230	17,602	27,069	1,062	61,230	17,602	27,069
Seafood Processors and Dealers	864	149,161	56,713	73,768	80	13,752	5,229	6,801
Importers	14,384	4,762,623	763,301	1,451,856	NA	NA	NA	NA
Seafood Wholesalers and Distributors	4,184	362,589	122,578	165,276	78	6,778	2,291	3,090
Retail	17,638	660,252	280,496	364,257	952	40,143	16,959	22,053

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	50,627	55,030	57,291	56,775	69,163	52,574	46,787	46,864	42,176	34,226
Finfish	21,736	22,705	22,574	18,597	18,541	18,299	17,104	14,996	18,387	17,724
Shellfish and Other	28,891	32,325	34,718	38,178	50,622	34,275	29,683	31,868	23,789	16,502
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	1,398	999	938	985	711	1,037	761	658	690	641
Atlantic surf clam	545	3,096	2,410	NA	2,115	2,507	1,465	1,019	NA	230
Eastern oyster	2,174	2,227	4,149	9,372	9,001	NA	1,442	1,666	1,772	3,198
Loligo squid	7,250	8,648	5,949	5,448	5,413	7,830	4,924	7,946	6,793	3,615
Quahog clam	6,905	9,218	13,475	11,777	NA	11,957	11,678	9,573	8,766	5,134
Scups and porgies	2,554	3,536	2,971	2,313	3,138	2,897	2,492	2,800	3,200	4,017
Sea scallop	4,960	4,083	2,602	2,963	978	3,783	2,136	1,361	998	1,277
Softshell clam	351	332	848	982	2,854	1,137	596	603	892	420
Summer flounder	3,732	3,653	3,197	2,997	3,043	2,527	2,402	2,219	3,488	2,965
Tilefishes	4,525	4,260	4,675	4,255	3,656	2,985	3,329	3,651	4,060	3,610

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	32,152	37,104	34,440	27,669	30,272	30,233	25,166	22,868	23,581	23,165
Finfish	17,397	16,758	17,239	13,643	13,486	13,271	12,349	10,503	12,474	15,837
Shellfish and Other	14,755	20,346	17,201	14,026	16,786	16,962	12,817	12,365	11,107	7,328
Key Species	-	-	-	-	-	-	-	-	-	-
American lobster	344	550	497	223	147	219	150	113	112	112
Atlantic surf clam	809	4,590	3,452	NA	3,110	3,677	2,167	1,518	NA	340
Eastern oyster	98	108	204	422	787	NA	273	316	337	301
Loligo squid	5,630	7,838	4,985	5,138	4,259	6,303	3,315	4,901	4,026	2,736
Quahog clam	1,131	1,299	1,932	1,781	NA	2,174	2,027	1,787	1,952	1,109
Scups and porgies	3,735	4,307	4,575	3,175	4,050	3,504	3,465	3,354	4,068	4,822
Sea scallop	522	430	256	262	87	398	251	157	103	128
Softshell clam	57	54	138	160	499	243	127	129	190	90
Summer flounder	1,517	1,238	1,033	833	830	604	491	463	866	871
Tilefishes	1,521	1,413	1,468	1,383	936	745	1,051	1,161	1,127	998

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
American lobster	4.06	1.81	1.89	4.42	4.82	4.74	5.06	5.84	6.15	5.74
Atlantic surf clam	0.67	0.67	0.70	NA	0.68	0.68	0.68	0.67	NA	0.68
Eastern oyster	22.23	20.58	20.32	22.23	11.43	NA	5.29	5.28	5.26	10.64
Loligo squid	1.29	1.10	1.19	1.06	1.27	1.24	1.49	1.62	1.69	1.32
Quahog clam	6.10	7.10	6.97	6.61	NA	5.50	5.76	5.36	4.49	4.63
Scups and porgies	0.68	0.82	0.65	0.73	0.77	0.83	0.72	0.83	0.79	0.83
Sea scallop	9.50	9.50	10.18	11.33	11.21	9.51	8.50	8.66	9.69	9.96
Softshell clam	6.13	6.12	6.13	6.13	5.73	4.69	4.69	4.69	4.69	4.69
Summer flounder	2.46	2.95	3.09	3.60	3.67	4.19	4.89	4.80	4.03	3.40
Tilefishes	2.97	3.01	3.18	3.08	3.90	4.01	3.17	3.14	3.60	3.62

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of New York Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	415	46,621	17,748	30,108
Private Boat	2,786	239,373	106,650	186,540
Shore	1,671	142,812	64,699	111,406
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	4,872	428,806	189,097	328,055

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
467,684	32,618	286,839	148,227

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	561	616	695	830	618	922	613	722	NA	NA
Coastal	497	533	595	657	555	780	541	605	NA	NA
Non-Coastal	18	30	8	19	10	29	10	14	NA	NA
Out-of-State	46	53	93	155	53	113	62	103	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	14,206	14,633	15,209	15,402	15,271	15,765	16,634	11,242	13,412	14,841
For-Hire	457	374	580	434	569	270	259	304	265	271
Private Boat	5,528	5,652	5,961	6,457	6,400	6,915	7,372	4,652	5,952	5,605
Shore	8,221	8,607	8,668	8,511	8,302	8,580	9,003	6,286	7,194	8,965

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic herring	H	732	1,391	1,520	1,190	11,460	2,105	1,052	82	3,220	1,505
	R	< 1	0	409	41	229	161	104	0	188	605
Black seabass	H	570	526	999	1,234	2,494	3,035	2,434	853	1,577	1,274
	R	1,787	9,302	4,255	3,666	7,486	13,134	16,538	5,049	9,725	11,367
Bluefish	H	3,344	3,785	2,830	4,847	2,438	2,078	3,063	1,204	3,037	886
	R	5,001	7,100	4,248	6,228	5,090	3,368	3,936	2,702	3,339	2,816
Scup	H	2,141	1,636	2,907	2,787	7,013	3,645	6,473	5,371	7,122	7,030
	R	3,606	4,633	6,691	4,877	7,728	12,401	15,352	7,454	6,681	5,815
Shortfin mako shark	H	0	< 1	0	35	22	4	41	< 1	3	4
	R	24	24	3	52	21	29	5	65	< 1	2
Striped bass	H	1,005	928	902	804	407	698	477	182	498	204
	R	2,692	2,428	3,956	2,784	3,682	3,739	2,771	1,989	6,161	6,712
Summer flounder	H	661	1,005	1,385	1,173	1,517	1,800	1,186	641	561	731
	R	16,598	10,682	13,492	9,658	14,470	9,651	12,345	6,776	9,002	7,548
Tautog	H	323	303	473	913	581	1,069	405	163	636	492
	R	1,738	2,935	4,570	3,017	5,577	7,367	5,462	3,040	6,159	4,256
Weakfish	H	< 1	13	21	2	2	5	17	9	37	34
	R	119	30	19	< 1	14	9	139	124	311	246
Winter flounder	H	113	177	< 1	72	16	37	< 1	< 1	< 1	< 1
	R	168	120	15	28	3	10	< 1	43	29	27

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 New York State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	547,351 (6.9%)	8,597,216 (6.5%)	603 (8.1%)	911 (8%)	1,778	0.16

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	142	133	150	181	183	187	195	192	NA
	Receipts	7,380	8,279	9,946	10,681	12,890	11,541	12,531	10,840	NA
Seafood sales, retail	Firms	183	205	197	188	172	161	179	157	NA
	Receipts	16,286	16,714	15,923	14,369	13,299	12,089	13,667	15,754	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[2]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	18	17	17	17	17	18	16	15	14
	Employees	299	265	280	ds	310	284	232	218	239
	Payroll	21,372	25,666	22,776	22,687	24,100	22,323	14,970	23,756	28,656
Seafood Sales, Wholesale	Establishments	291	243	264	270	275	286	259	252	258
	Employees	1,876	1,839	1,937	2,051	2,056	2,149	2,038	2,033	1,949
	Payroll	76,970	78,324	84,346	87,511	93,859	97,304	95,766	90,895	96,663
Seafood sales, retail	Establishments	391	385	399	401	409	406	385	383	370
	Employees	1,660	1,674	1,796	2,054	2,163	2,226	1,889	2,294	2,406
	Payroll	35,664	38,721	45,049	51,605	53,952	60,961	49,413	75,579	83,748

Transport, Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	43	49	45	42	42	38	38	38	35
	Employees	552	560	ds	ds	487	479	517	521	511
	Payroll	25,998	24,599	24,338	28,028	25,591	26,257	28,329	30,221	31,748
Deep Sea Freight Transportation	Establishments	31	23	20	23	22	21	16	17	23
	Employees	752	214	ds	ds	174	212	208	244	330
	Payroll	88,354	31,229	22,691	19,387	26,452	19,416	28,951	48,632	39,541
Deep Sea Passenger Transportation	Establishments	1	2	3	2	2	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	62	42	59	72	73	73	70	69	71
	Employees	1,708	ds	ds	ds	1,551	1,732	1,696	1,462	1,648
	Payroll	154,087	ds	ds	ds	185,742	196,617	174,203	156,885	160,860
Port and Harbor Operations	Establishments	9	18	15	15	14	14	13	15	15
	Employees	33	1,294	196	168	230	205	257	318	290
	Payroll	1,493	105,325	12,358	10,342	13,774	15,087	14,868	25,882	26,831
Marine Cargo Handling	Establishments	12	6	9	12	11	9	7	6	9
	Employees	1,019	ds	922	835	577	429	633	574	660
	Payroll	66,439	ds	60,079	52,523	52,731	41,922	45,977	66,905	76,152
Navigational Services to Shipping	Establishments	35	53	33	36	33	36	47	45	39
	Employees	596	712	687	722	695	709	933	945	944
	Payroll	54,406	63,334	68,141	74,395	73,699	76,693	99,475	97,292	84,566
Marinas	Establishments	431	415	424	427	429	422	402	415	416
	Employees	2,033	1,868	1,907	1,986	1,930	1,950	1,883	1,955	1,875
	Payroll	96,408	87,124	93,212	95,900	99,181	102,523	95,528	102,012	104,163

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Virginia



2020 Economic Impacts of the Virginia Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	24,880	3,234,096	832,729	1,278,891	14,802	976,067	374,523	505,782
Commercial Harvesters	4,878	364,479	120,565	176,571	4,878	364,479	120,565	176,571
Seafood Processors and Dealers	3,219	339,264	131,999	170,357	1,508	158,903	61,825	79,791
Importers	5,553	1,838,463	294,649	560,444	NA	NA	NA	NA
Seafood Wholesalers and Distributors	1,491	217,246	75,101	100,092	511	74,456	25,739	34,304
Retail	9,739	474,644	210,416	271,427	7,905	378,229	166,394	215,116

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	193,976	174,524	163,017	172,831	197,531	204,703	188,004	178,655	184,269	214,431
Finfish	57,015	60,122	54,873	53,803	50,279	43,833	46,825	47,676	46,959	71,393
Shellfish and Other	136,961	114,402	108,144	119,028	147,252	160,869	141,179	130,979	137,310	143,038
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	4,571	7,534	6,247	4,186	4,059	3,071	2,705	2,893	861	223
Black sea bass	1,003	1,401	1,716	1,365	1,607	2,071	2,074	1,829	2,011	1,079
Blue crab	26,274	24,561	23,991	27,047	30,607	38,267	25,245	22,394	33,408	27,936
Goosefish	752	1,217	920	654	516	401	170	150	121	29
Menhaden	32,995	31,107	25,343	26,046	28,202	24,236	22,865	27,716	26,922	57,126
Oysters	6,832	11,949	25,318	29,099	36,498	33,788	49,284	43,452	38,634	37,834
Sea scallop	79,427	54,076	32,610	33,643	48,806	51,832	35,036	35,067	34,983	37,132
Spot	3,431	770	2,406	5,763	2,263	449	3,439	1,034	2,523	3,125
Striped bass	4,497	5,542	5,701	6,390	4,363	4,664	5,912	5,994	4,581	3,132
Summer flounder	5,956	7,725	8,513	4,733	5,694	5,268	4,794	4,570	5,030	2,902

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	496,582	462,442	381,577	389,164	408,157	361,966	338,613	362,794	392,372	321,861
Finfish	440,920	415,617	344,094	352,340	372,922	320,514	302,063	327,036	350,774	288,360
Shellfish and Other	55,662	46,825	37,482	36,823	35,235	41,452	36,551	35,757	41,598	33,501
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	5,569	6,940	6,325	4,814	4,506	3,934	2,892	2,440	909	177
Black sea bass	275	392	496	388	422	553	745	606	646	522
Blue crab	39,656	33,143	24,258	24,205	21,378	26,298	22,011	21,384	27,119	20,045
Goosefish	604	907	846	587	445	366	216	203	176	75
Menhaden	414,159	390,318	317,950	326,817	352,855	302,899	284,226	311,544	332,512	273,480
Oysters	1,515	1,951	3,243	3,765	4,587	4,076	4,087	3,802	3,435	2,980
Sea scallop	8,260	5,798	2,958	2,752	4,020	4,579	3,925	3,869	3,894	3,707
Spot	3,741	613	2,085	3,983	1,457	275	1,635	601	1,186	1,536
Striped bass	2,077	2,175	1,680	1,995	1,331	1,241	1,082	1,277	1,389	924
Summer flounder	4,065	4,122	4,794	2,049	2,274	1,663	1,254	1,254	1,918	1,588

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	0.82	1.09	0.99	0.87	0.90	0.78	0.94	1.19	0.95	1.26
Black sea bass	3.65	3.57	3.46	3.52	3.80	3.74	2.78	3.02	3.11	2.07
Blue crab	0.66	0.74	0.99	1.12	1.43	1.46	1.15	1.05	1.23	1.39
Goosefish	1.25	1.34	1.09	1.11	1.16	1.10	0.79	0.74	0.69	0.39
Menhaden	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.08	0.21
Oysters	4.51	6.12	7.81	7.73	7.96	8.29	12.06	11.43	11.25	12.69
Sea scallop	9.62	9.33	11.02	12.23	12.14	11.32	8.93	9.06	8.98	10.02
Spot	0.92	1.26	1.15	1.45	1.55	1.63	2.10	1.72	2.13	2.04
Striped bass	2.16	2.55	3.39	3.20	3.28	3.76	5.46	4.69	3.30	3.39
Summer flounder	1.47	1.87	1.78	2.31	2.50	3.17	3.82	3.64	2.62	1.83

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Virginia Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	144	14,107	4,699	8,352
Private Boat	1,133	131,680	46,346	84,984
Shore	2,171	243,930	92,141	160,354
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	3,449	389,716	143,185	253,690

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
326,176	8,591	138,665	178,920

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	892	684	760	600	620	724	672	587	NA	NA
Coastal	516	412	419	341	359	394	329	324	NA	NA
Non-Coastal	56	78	74	53	59	86	80	45	NA	NA
Out-of-State	320	193	267	206	203	244	263	218	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	8,876	8,287	8,007	7,410	6,727	7,247	6,749	6,386	7,238	8,164
For-Hire	31	45	59	53	66	39	43	25	37	31
Private Boat	4,256	3,646	3,399	3,079	2,451	2,660	2,548	2,215	2,651	2,639
Shore	4,590	4,596	4,549	4,277	4,210	4,549	4,157	4,147	4,550	5,495

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	8,891	8,786	12,517	9,534	8,024	7,277	7,645	5,472	3,056	6,529
	R	14,160	15,140	18,480	10,314	6,815	6,993	8,464	5,359	6,643	6,223
Black sea bass	H	36	13	46	78	66	81	97	87	231	275
	R	1,170	1,961	1,506	1,962	647	1,869	2,272	1,472	1,903	2,361
Cobia	H	13	1	24	22	39	44	15	81	56	50
	R	27	17	36	58	41	81	77	195	185	147
Red drum	H	0	91	334	252	22	16	347	6	206	214
	R	157	8,323	577	1,109	79	165	1,723	85	866	716
Spot	H	10,129	10,148	11,734	13,653	1,731	5,279	15,944	7,361	7,647	14,963
	R	7,291	6,371	7,549	4,125	1,897	2,858	3,336	3,043	4,510	5,157
Spotted seatrout	H	644	392	154	85	23	164	172	190	596	592
	R	3,463	1,257	738	1,059	834	3,709	3,155	4,455	2,866	2,831
Striped bass	H	328	258	302	131	208	138	108	57	45	52
	R	389	289	503	738	1,709	1,638	1,338	1,247	655	929
Summer flounder	H	659	678	560	439	334	212	188	146	150	144
	R	4,449	2,658	1,510	2,230	1,718	567	1,610	874	2,300	1,413
Tautog	H	153	66	20	87	24	40	22	8	27	63
	R	110	61	54	197	46	144	76	73	75	114
Weakfish	H	19	46	4	32	10	38	14	6	38	17
	R	744	274	205	375	232	1,467	455	234	817	317

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

2019 Virginia State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	203,467 (2.6%)	3,455,993 (2.6%)	197 (2.7%)	321 (2.8%)	554	1.03

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	ds	ds	ds	ds	ds	3	5	9	NA
	Receipts	ds	ds	ds	ds	ds	558	458	786	NA
Seafood sales, retail	Firms	9	11	8	13	11	11	12	11	NA
	Receipts	1,226	1,333	520	452	479	608	2,868	914	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	18	19	18	20	17	18	21	20	19
	Employees	899	919	781	804	790	790	839	869	910
	Payroll	33,285	32,955	30,682	29,763	31,614	32,991	46,474	48,483	42,110
Seafood Sales, Wholesale	Establishments	62	64	70	65	65	60	58	57	52
	Employees	469	492	483	448	444	457	379	363	316
	Payroll	15,733	14,271	14,719	14,769	16,089	16,115	16,872	15,082	14,598
Seafood sales, retail	Establishments	58	51	55	57	59	56	56	58	62
	Employees	277	280	254	224	279	247	215	210	225
	Payroll	5,453	5,563	5,526	5,537	6,641	7,255	6,222	6,262	6,247

Transport, Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	51	59	54	56	54	60	53	58	61
	Employees	ds	ds	ds	ds	30,622	30,387	27,924	29,074	29,507
	Payroll	ds	ds	ds	ds	1,955,354	1,922,736	1,817,205	2,000,127	2,135,838
Deep Sea Freight Transportation	Establishments	21	19	12	12	12	14	13	12	17
	Employees	492	ds	ds	ds	254	301	270	322	503
	Payroll	42,018	ds	ds	ds	33,057	38,674	34,928	35,942	73,896
Deep Sea Passenger Transportation	Establishments	2	1	1	1	1	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	7	12	11	12	10	12	12	12	12
	Employees	ds	ds	177	152	186	325	387	447	476
	Payroll	ds	ds	10,077	9,264	11,951	18,059	24,801	28,640	30,942
Port and Harbor Operations	Establishments	6	13	14	15	14	13	14	15	16
	Employees	ds	ds	ds	ds	1,922	2,167	2,052	2,114	2,208
	Payroll	ds	ds	ds	ds	132,983	125,111	144,903	156,178	147,866
Marine Cargo Handling	Establishments	11	6	8	8	8	8	6	7	7
	Employees	ds	ds	ds	ds	ds	805	751	829	865
	Payroll	41,262	ds	ds	ds	ds	50,903	54,946	61,037	59,047
Navigational Services to Shipping	Establishments	21	20	18	20	20	18	26	28	29
	Employees	419	428	303	322	302	294	314	332	338
	Payroll	22,132	25,732	20,283	21,348	20,746	19,600	21,965	23,293	24,086
Marinas	Establishments	110	105	113	107	108	103	96	102	107
	Employees	818	673	840	814	818	821	636	773	817
	Payroll	23,379	18,874	24,468	24,436	25,146	25,777	19,270	25,297	27,237

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

South Atlantic Region

- East Florida
- Georgia
- North Carolina
- South Carolina



Charter fishing off the coast of Fort Lauderdale, Florida.
Photo: NOAA Fisheries/Jacqui Fenner

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 and NOAA Fisheries under eight fishery management plans. The coastal migratory pelagic resources and spiny lobster FMPs are managed jointly with the Gulf of Mexico Fishery Management Council.

South Atlantic Region FMPs

- Coastal migratory pelagic resources (with GMFMC)
- Coral, coral reef and live/hardbottom habitat
- Dolphin/wahoo
- Golden crab
- Pelagic sargassum habitat
- Shrimp
- Snapper grouper
- Spiny lobster (with GMFMC)

Five of the stocks/complexes covered in these FMPs were listed as overfished in 2020: hogfish (Florida Keys / East Florida stock), red snapper (South Atlantic stock), red porgy, snowy grouper, and red grouper (South Atlantic stock).

Five stocks/complexes were subject to overfishing in 2020: red snapper (South Atlantic stock); speckled hind; Warsaw grouper; red porgy — South Atlantic (added in 2020); and golden tilefish — South Atlantic stock (added in 2020). Greater amberjack — Southern Atlantic Coast and red grouper — South Atlantic were removed from the overfishing list in 2020.

Catch Share Programs

One catch share program has been implemented in the South Atlantic: the South Atlantic Wreckfish ITQ Program. This catch share program is described below.

Wreckfish ITQ Program: This program was implemented in 1992 and is the only catch share program in the South Atlantic Region. The program was developed to create incentives for the conservation of wreckfish; provide a management regime that promotes stability and facilitates long-range planning and investment by harvesters and dealers; promote management regimes that minimize gear and area conflicts among fishermen; minimize the tendency for 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. NOAA Fisheries continues to collect data on this program to develop standard performance indicators that measure its basic economic performance.

COMMERCIAL FISHERIES — SOUTH ATLANTIC REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key South Atlantic Commercial Species

- Blue crab
- Clams
- Flounders
- Groupers
- King mackerels
- Oysters
- Shrimp
- Snappers
- Swordfish
- Tunas

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-

employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[1,2]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry in Florida generated the largest employment impacts in the South Atlantic region with 76,685 full- and part-time jobs. Florida also generated the largest sales impacts ($18.5 billion), value-added impacts ($6.2 billion), and income impacts ($3.5 billion).

Landings Revenue

In 2020, landings revenue in the South Atlantic Region totaled $183.3 million, a 5% increase from 2011 (a 9% decrease in real terms after adjusting for inflation) and a 9% decrease from 2019. Landings revenue was highest in North Carolina ($78.2 million), followed by East Florida ($57 million).

Shellfish and other landings revenue accounted for 72% of all landings revenue. In 2020, shrimp ($68.7 million), blue crab ($37.5 million), and oysters ($8 million) had the highest landings revenue in this region. Together, these top three species accounted for 62% of total landings revenue.

From 2011 to 2020, shrimp (28%, 10% in real terms), tunas (27%, 10% in real terms), and oysters (16%, 0.6% in real terms) had the largest increases, while clams (-71%, -75% in real terms), flounders (-46%, -53% in real terms), and swordfish (-39%, -47% in real terms) had the largest decreases. From 2019 to 2020, tunas (15%) had the largest increases, while clams (-65%), flounders (-52%), and snappers (-13%) had the largest decreases.

Commercial Revenue: Largest Increases

From 2011:
- Shrimp (28%, 10% in real terms)
- Tunas (27%, 10% in real terms)
- Oysters (16%, 0.6% in real terms)

From 2019:
- Tunas (15%)

Commercial Revenue: Largest Decreases

From 2011:
- Clams (-71%, -75% in real terms)
- Flounders (-46%, -53% in real terms)
- Swordfish (-39%, -47% in real terms)

From 2019:
- Clams (-65%)
- Flounders (-52%)
- Snappers (-13%)

Landings

In 2020, South Atlantic Region commercial fishermen landed over 106.3 million pounds of finfish and shellfish. This represents a 16% decrease from 2011 and a 15% decrease from 2019. Shrimp contributed the highest landings volume in the region, accounting for 40% of total landing weight.

From 2011 to 2020, shrimp (85%) and tunas (14%) had the largest increases, while clams (-84%), oysters (-52%), and flounders (-46%) had the largest decreases. From 2019 to 2020, tunas (30%) had the largest increases, while clams (-73%), blue crab (-31%), and flounders (-20%) had the largest decreases.

[1] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [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 specifically; data for the entire state of Florida are reported here.

Commercial Landings: Largest Increases

From 2011:
- Shrimp (85%)
- Tunas (14%,)
- From 2019:
- Tunas (30%)

Commercial Landings: Largest Decreases

From 2011:
- Clams (-84%)
- Oysters (-52%)
- Flounders (-46%)

From 2019:
- Clams (-73%)
- Blue crab (-31%)
- Flounders (-20%)

Prices

In 2020, oysters ($13.48 per pound) received the highest ex-vessel price in the region. Landings of shrimp ($1.62 per pound) had the lowest ex-vessel price. From 2011 to 2020, oysters (143%, 110% in real terms), blue crab (100%, 73% in real terms), and clams (87%, 61% in real terms) had the largest increases, while shrimp (-31%, -40% in real terms) and swordfish (-6%, -19% in real terms) had the largest decreases. From 2019 to 2020, blue crab (33%), clams (28%), and swordfish (10%) had the largest increases, while flounders (-40%) and tunas (-11%) had the largest decreases.

RECREATIONAL FISHERIES — SOUTH ATLANTIC REGION

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. This recreational fisheries section reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[3]

Key South Atlantic Region Recreational Species[4]
- Atlantic croaker and spot
- Black sea bass
- Bluefish
- Dolphinfish
- King mackerel
- Red drum
- Sharks[5]
- Sheepshead
- Spanish mackerel
- Spotted seatrout

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the South Atlantic Region is based on spending by recreational anglers.[6] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN

[3] Atlantic and Gulf recreational catch and effort estimates are based upon the MRIP estimates released in 2018.
[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[5] Atlantic sharpnose shark, blacktip shark, requiem shark, requiem shark family, requiem shark genus, shark species, and unidentified (sharks).
[6] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]

version 3, with base year data from 2017. Models for each state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

The greatest employment impacts from expenditures on saltwater recreational fishing in the South Atlantic Region were generated in North Carolina (15,214 jobs), followed by East Florida (14,557 jobs) and South Carolina (6,560 jobs).The largest sales impacts were observed in North Carolina ($1.6 billion), followed by East Florida ($1.5 billion) and South Carolina ($604.5 million). The biggest income impacts were generated in North Carolina ($553.8 million), followed by East Florida ($519.7 million) and South Carolina ($199.9 million). The greatest value-added impacts were in East Florida ($1 billion), followed by North Carolina ($955.9 million) and South Carolina ($382 million).

A large portion of the approximately 3.2 billion in trip expenses came from trips in the shore (63%) and private boat (31.2%) sectors.

Participation

Due to changes in data availability after 2018, angler participation data is not being reported at the state level for years after 2018.

Fishing Trips

In 2020, recreational fishermen took 70.5 million fishing trips in the South Atlantic Region. This number represented an 8% decrease from 2011 and a 2% increase from 2019. The largest proportions of trips were taken in the shore mode (67%) and private boat (32%). States with the highest number of recorded trips in the South Atlantic Region were East Florida (40.4 million trips) and North Carolina (16.4 million trips).

Harvest and Release Trends

Of the South Atlantic Region's key species and species groups, Atlantic croaker and spot (30.2 million fish), spotted seatrout (19.5 million fish), and bluefish (18.3 million fish) were most frequently caught by recreational fishermen. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, Spanish mackerel (163%), king mackerel (141%), and sheepshead (37%) had the largest increases, while dolphinfish (-56%), black sea bass (-43%), and sharks (-28%) had the largest decreases. From 2019 to 2020, Spanish mackerel (55%), sheepshead (45%), and sharks (11%) had the largest increases, while dolphinfish (-46%), black sea bass (-24%), and red drum (-22%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- Spanish mackerel (163%)
- King mackerel (141%)
- Sheepshead (37%)

From 2019:
- Spanish mackerel (55%)
- Sheepshead (45%)
- Sharks (11%)

Harvest and Release: Largest Decreases

From 2011:
- Dolphinfish (-56%)
- Black sea bass (-43%)
- Sharks (-28%)

From 2019:
- Dolphinfish (-46%)
- Black sea bass (-24%)
- Red drum (-22%)

MARINE ECONOMY — SOUTH ATLANTIC REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[7]

Note that when discussing the marine economy in the South Atlantic Region, all statistics include the entire state of Florida and not just East Florida.

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing sector in a

[7] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).

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 U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

Florida had the highest CFLQ at 0.84. South Carolina had a CFLQ value of 0.1.

In 2019, 1.2 million employer establishments operated throughout the entire South Atlantic Region (including marine and non-marine related establishments). These establishments employed 18.8 million workers and had a total annual payroll of $917.8 billion. The combined gross state product of East Florida, Georgia, North Carolina, and South Carolina was approximately $2.6 trillion in 2019.

Seafood Sales and Processing[9]

Seafood Product Preparation and Packaging: In 2019, the South Atlantic Region had 44 employer firms in the seafood product preparation and packaging sector (remains unchanged from 2011). The greatest number of establishments in this sector was in East Florida (25), followed by North Carolina (12) and Georgia (7).

Retail Seafood Sales: In 2019, there were 391 employer firms in the seafood retail sector in the South Atlantic Region (a 15% increase from 2011). The greatest number of establishments in this sector was in East Florida (170), followed by North Carolina (97) and Georgia (73).

Wholesale Seafood Sales: There were 332 employer firms in the seafood wholesale sector in the South Atlantic Region in 2019 (a 6% decrease from 2011). The greatest number of establishments in this sector was in East Florida (241), followed by North Carolina (49) and Georgia (25).

Transportation Support and Marine Operations

Data for the transportation support and marine operations sectors of the South Atlantic Region's economy were largely suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the regional economy. For example, in 2019, the ship and boat building sector in the South Atlantic Region accounted for $1.5 billion in payroll. The deep sea passenger transportation sector in Florida alone accounted for $1.1 billion in payroll in 2019.

[8] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.'
[9] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently, this information is not available from the Census Bureau for 2019.

Tables | South Atlantic Region



2020 Economic Impacts of the South Atlantic Seafood Industry (thousands of dollars; number of jobs)[1]

State	Landings Revenue	With Imports				Without Imports			
		Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Florida	212,358	76,685	18,501,239	3,451,325	6,179,998	8,231	863,421	226,859	348,384
Georgia	21,883	19,321	3,246,416	716,545	1,181,394	2,431	134,384	52,798	71,833
North Carolina	78,152	7,604	817,990	222,610	335,853	4,613	270,974	110,649	147,112
South Carolina	26,214	1,623	139,133	46,090	65,209	1,385	88,717	36,194	48,219

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	174,705	176,455	166,948	193,572	199,981	193,303	203,996	176,725	201,349	183,299
Finfish	57,159	56,582	55,043	57,158	51,133	51,522	55,728	51,033	54,371	52,023
Shellfish and Other	117,546	119,873	111,905	136,414	148,848	141,782	148,268	125,692	146,978	131,276
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	34,422	38,018	44,563	47,048	46,536	37,677	37,550	35,150	40,753	37,497
Clams	3,804	3,801	3,054	3,559	8,013	5,857	4,847	4,432	3,192	1,117
Flounders	9,530	8,014	7,538	13,495	13,133	12,428	12,255	10,969	10,800	5,163
Groupers	3,802	3,445	3,385	3,474	3,190	2,564	2,728	2,936	3,129	2,920
King mackerels	6,614	5,569	5,242	5,831	5,623	6,291	7,408	7,037	7,721	7,550
Oysters	6,852	5,492	6,080	7,209	16,536	7,234	8,610	7,197	9,038	7,980
Shrimp	53,765	55,002	39,023	50,967	51,568	67,249	76,514	58,875	71,871	68,735
Snappers	3,897	4,214	3,890	4,037	3,564	3,426	3,737	3,937	4,777	4,149
Swordfish	10,031	9,536	8,435	6,858	5,910	5,765	5,184	5,565	6,463	6,108
Tunas	5,162	7,053	6,107	7,053	5,673	5,003	7,260	6,300	5,687	6,549

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	126,496	111,388	103,238	115,313	115,535	108,134	119,846	107,277	124,643	106,255
Finfish	44,762	36,867	34,379	39,890	33,811	31,427	31,248	29,050	30,622	29,408
Shellfish and Other	81,735	74,522	68,859	75,422	81,724	76,706	88,598	78,227	94,021	76,847
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	42,564	40,721	33,042	34,392	40,593	35,251	30,008	27,440	33,518	23,172
Clams	630	661	472	529	887	775	702	609	361	99
Flounders	4,355	2,963	2,890	4,734	4,179	3,145	3,052	2,629	2,944	2,357
Groupers	953	859	787	762	675	537	546	571	599	547
King mackerels	3,048	2,457	1,913	2,381	2,267	2,634	3,113	2,729	3,204	2,909
Oysters	1,233	903	1,038	1,152	1,053	1,073	720	575	675	592
Shrimp	22,960	22,760	14,132	15,894	23,289	29,992	38,531	32,115	44,588	42,541
Snappers	1,295	1,349	1,221	1,191	1,042	973	1,033	1,045	1,247	1,044
Swordfish	2,721	2,734	2,466	1,629	1,731	1,695	1,456	1,688	2,049	1,767
Tunas	2,234	2,496	2,390	2,721	2,069	2,140	2,617	1,991	1,956	2,539

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	0.81	0.93	1.35	1.37	1.15	1.07	1.25	1.28	1.22	1.62
Clams	6.04	5.75	6.47	6.73	9.03	7.56	6.91	7.28	8.83	11.28
Flounders	2.19	2.70	2.61	2.85	3.14	3.95	4.02	4.17	3.67	2.19
Groupers	3.99	4.01	4.30	4.56	4.73	4.78	5.00	5.15	5.23	5.33
King mackerels	2.17	2.27	2.74	2.45	2.48	2.39	2.38	2.58	2.41	2.60
Oysters	5.56	6.08	5.86	6.26	15.71	6.74	11.96	12.51	13.38	13.48
Shrimp	2.34	2.42	2.76	3.21	2.21	2.24	1.99	1.83	1.61	1.62
Snappers	3.01	3.12	3.19	3.39	3.42	3.52	3.62	3.77	3.83	3.97
Swordfish	3.69	3.49	3.42	4.21	3.41	3.40	3.56	3.30	3.15	3.46
Tunas	2.31	2.83	2.55	2.59	2.74	2.34	2.77	3.16	2.91	2.58

[1] The information for Florida in this Economic Impacts table is for the entire state. Data for the remaining commercial tables pertain only to East Florida.

2020 Economic Impacts of the South Atlantic Recreational Fishing (thousands of dollars; number of jobs)

State	Trips	Jobs	Sales	Income	Value Added
East Florida	40,436	14,557	1,531,787	519,740	1,025,753
Georgia	4,890	2,922	255,841	83,872	160,501
North Carolina	16,399	15,214	1,582,090	553,845	955,941
South Carolina	8,734	6,560	604,516	199,851	382,026

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
3,178,719	184,108	993,197	2,001,414

Recreational Anglers by Residential Area (thousands of anglers)[1,2]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	2,343	2,637	2,488	2,719	2,229	2,345	2,151	2,419	NA	NA
Coastal	1,893	2,135	2,092	2,189	1,753	1,873	1,750	1,954	NA	NA
Non-Coastal	450	502	396	530	475	472	401	465	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	76,674	69,334	68,513	75,410	75,824	73,109	76,914	75,101	69,329	70,459
For-Hire	360	362	392	448	508	540	560	523	578	579
Private Boat	23,391	20,786	20,495	22,194	21,753	21,252	21,506	22,890	20,754	22,837
Shore	52,923	48,186	47,627	52,768	53,562	51,317	54,849	51,687	47,997	47,044

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker and spot	H	15,301	11,548	14,762	17,704	18,413	12,502	7,209	6,247	6,768	5,538
	R	19,797	15,980	25,015	29,222	24,075	24,625	14,655	15,454	15,111	24,690
Black sea bass	H	933	687	629	1,113	727	553	620	351	417	271
	R	10,197	11,658	7,259	15,547	11,307	10,161	11,526	5,967	7,897	6,078
Bluefish	H	10,637	5,949	8,448	8,571	7,176	7,116	5,525	6,213	6,022	6,551
	R	18,670	12,110	19,009	13,887	14,742	13,232	13,106	12,898	16,901	11,767
Dolphinfish	H	1,421	1,436	1,142	1,618	2,255	1,345	1,666	1,807	1,196	839
	R	885	246	448	701	889	131	629	504	684	170
King mackerel	H	302	254	236	298	323	526	637	681	789	589
	R	104	97	78	199	144	123	323	285	332	387
Red drum	H	1,518	1,422	2,048	1,958	1,585	2,010	2,256	2,239	1,302	1,444
	R	6,767	8,857	9,458	8,787	7,835	9,806	10,164	9,644	10,784	7,939
Sharks	H	59	65	151	137	45	162	34	25	121	68
	R	6,357	6,689	12,893	8,491	10,102	6,926	4,522	4,879	4,047	4,539
Sheepshead	H	2,357	1,630	2,056	2,658	1,572	2,415	1,885	2,604	1,671	2,140
	R	2,089	2,805	2,288	3,474	3,177	2,944	2,536	3,525	2,511	3,937
Spanish mackerel	H	2,644	2,034	3,764	2,577	1,461	2,866	1,741	2,309	3,288	5,837
	R	1,411	1,164	2,708	1,878	1,060	2,017	1,460	2,944	3,597	4,821
Spotted seatrout	H	2,611	5,115	3,608	2,821	1,805	3,543	3,904	2,804	4,379	4,074
	R	17,352	18,486	13,513	14,324	13,867	15,163	15,380	23,720	16,410	15,396

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] East Florida anglers estimates are not available for the non-coastal category.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

Tables | East Florida



2020 Economic Impacts of the Florida Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	76,685	18,501,239	3,451,325	6,179,998	8,231	863,421	226,859	348,384
Commercial Harvesters	5,361	423,022	131,375	175,246	5,361	423,022	131,375	175,246
Seafood Processors and Dealers	4,466	860,979	166,625	327,569	440	91,060	17,623	34,645
Importers	40,872	13,532,605	2,168,858	4,125,331	NA	NA	NA	NA
Seafood Wholesalers and Distributors	9,853	1,350,774	530,309	659,774	362	49,672	19,501	24,262
Retail	16,134	2,333,859	454,157	892,078	2,067	299,668	58,359	114,231

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[2]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	62,356	61,144	50,464	58,154	52,339	56,962	64,096	58,503	64,502	57,049
Finfish	25,921	25,929	23,897	26,663	23,302	22,818	23,027	23,441	24,854	22,141
Shellfish and Other	36,434	35,215	26,567	31,492	29,037	34,144	41,069	35,062	39,648	34,909
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	4,699	5,172	4,220	3,402	3,641	3,793	4,682	4,325	4,957	4,924
Clams	287	145	46	61	58	32	NA	1	NA	NA
Groupers	631	906	744	799	883	685	674	729	674	638
King mackerel	5,534	4,695	4,348	4,585	4,805	5,314	6,058	5,831	6,097	6,051
Lobsters	3,213	1,891	3,442	5,152	3,736	3,032	1,966	3,580	2,631	2,957
Sharks	355	299	383	508	573	425	529	386	229	165
Shrimp	24,536	21,969	14,354	18,312	16,353	22,601	29,967	23,495	28,167	23,863
Snappers	1,808	1,979	1,898	2,224	1,700	1,381	1,624	1,609	1,973	1,683
Spanish mackerel	2,687	2,463	2,678	2,652	2,171	2,534	2,760	2,918	2,834	2,668
Swordfish	3,785	4,420	3,129	3,819	2,607	2,637	1,917	2,805	3,527	2,524

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	33,399	30,893	24,038	24,973	25,288	28,745	36,749	35,053	45,476	41,272
Finfish	16,050	14,296	12,509	13,581	12,163	12,068	12,027	12,328	12,559	11,135
Shellfish and Other	17,349	16,597	11,529	11,392	13,125	16,678	24,722	22,726	32,917	30,136
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	3,663	3,769	2,491	1,659	1,783	1,901	2,501	2,013	2,311	2,309
Clams	38	18	7	8	8	3	NA	0	NA	NA
Groupers	158	226	178	179	187	142	137	141	129	127
King mackerel	2,633	2,145	1,562	1,812	1,859	2,162	2,438	2,191	2,481	2,284
Lobsters	515	337	486	543	481	394	256	528	344	435
Sharks	698	577	631	463	554	249	442	296	168	204
Shrimp	10,531	9,208	5,316	5,808	7,072	10,601	19,002	17,305	27,733	24,710
Snappers	612	645	623	670	506	407	447	415	506	419
Spanish mackerel	3,433	2,597	2,265	2,585	1,808	2,461	2,673	2,926	3,005	2,571
Swordfish	1,004	1,218	782	778	753	722	521	811	1,016	667

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	1.28	1.37	1.69	2.05	2.04	1.99	1.87	2.15	2.15	2.13
Clams	7.62	7.97	6.35	7.62	7.48	9.83	NA	11.19	NA	NA
Groupers	3.99	4.01	4.18	4.46	4.71	4.80	4.91	5.17	5.22	5.02
King mackerel	2.10	2.19	2.78	2.53	2.58	2.46	2.48	2.66	2.46	2.65
Lobsters	6.24	5.60	7.08	9.48	7.76	7.70	7.68	6.78	7.65	6.79
Sharks	0.51	0.52	0.61	1.10	1.03	1.71	1.20	1.30	1.37	0.81
Shrimp	2.33	2.39	2.70	3.15	2.31	2.13	1.58	1.36	1.02	0.97
Snappers	2.96	3.07	3.04	3.32	3.36	3.40	3.63	3.88	3.90	4.02
Spanish mackerel	0.78	0.95	1.18	1.03	1.20	1.03	1.03	1.00	0.94	1.04
Swordfish	3.77	3.63	4.00	4.91	3.46	3.65	3.68	3.46	3.47	3.78

[1] The information for Florida in this Economic Impacts table is for the entire state. Data for the remaining commercial tables pertain only to East Florida.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of East Florida Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	906	97,791	34,457	58,271
Private Boat	5,189	547,153	181,177	366,729
Shore	8,463	886,843	304,107	600,753
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	14,557	1,531,787	519,740	1,025,753

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
1,313,541	55,719	553,607	704,214

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	1,662	1,695	1,803	2,141	1,821	1,733	1,588	2,140	NA	NA
Coastal	1,109	1,181	1,263	1,334	1,001	1,059	975	1,227	NA	NA
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	553	514	540	807	819	674	613	913	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	45,795	39,678	37,306	43,968	42,395	38,695	40,404	43,987	35,930	40,436
For-Hire	141	160	161	192	229	256	250	216	262	244
Private Boat	14,771	12,325	12,231	13,759	13,029	12,393	11,756	14,728	11,703	13,061
Shore	30,883	27,193	24,914	30,016	29,138	26,046	28,398	29,043	23,965	27,131

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bluefish	H	5,575	2,319	2,037	3,262	2,081	1,492	1,591	2,052	2,366	4,142
	R	8,484	8,079	10,002	6,293	5,361	4,751	1,716	3,161	3,920	3,135
Dolphinfish	H	771	949	806	1,179	1,505	799	1,285	1,170	639	512
	R	869	220	440	694	815	127	626	456	644	134
Florida pompano	H	507	1,602	630	575	486	380	612	557	1,886	386
	R	2,676	2,666	1,261	1,780	984	1,190	827	1,033	1,737	1,127
Gray snapper	H	404	464	2,102	2,556	1,819	3,778	3,355	2,513	2,286	1,953
	R	2,017	6,419	7,167	8,095	6,469	11,947	10,260	8,575	10,086	13,653
King mackerel	H	252	181	179	208	219	409	489	513	531	390
	R	89	83	62	146	122	67	171	152	110	252
Kingfish	H	10,137	9,676	6,043	6,745	3,507	4,762	2,079	5,920	3,992	1,990
	R	8,447	10,159	6,505	7,265	9,140	5,872	1,978	7,340	4,916	4,046
Red drum	H	788	878	1,008	1,028	982	1,310	979	1,070	599	560
	R	4,192	2,615	5,197	5,075	4,132	4,734	4,727	5,375	3,689	3,154
Sheepshead	H	1,420	1,015	1,076	2,248	1,129	1,942	1,240	1,740	1,133	1,508
	R	1,704	2,315	1,467	2,767	2,520	2,272	1,114	2,341	1,453	2,793
Spanish mackerel	H	1,304	777	2,666	1,349	230	1,619	651	957	623	3,617
	R	522	254	1,892	920	219	1,137	454	1,585	653	2,478
Spotted seatrout	H	931	1,683	1,122	1,111	504	963	978	929	620	679
	R	7,839	9,611	5,723	7,280	6,131	4,784	5,846	5,306	4,099	5,306

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Non-coastal data are not available because all of the state's residents are considered coastal county residents.
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] Drum (kingfish) include kingfish genus and Gulf kingfish.

2019 Florida State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	574,512 (7.2%)	8,860,042 (6.7%)	427 (5.7%)	603 (5.3%)	1,116	0.84

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	294	307	300	315	300	316	280	287	NA
	Receipts	14,618	17,557	17,214	22,329	21,841	20,834	19,651	21,888	NA
Seafood sales, retail	Firms	362	383	338	346	355	320	316	349	NA
	Receipts	29,037	30,765	25,332	26,433	29,033	24,296	27,937	30,559	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	24	27	25	27	27	23	23	22	25
	Employees	1,095	1,608	1,374	1,419	1,429	1,535	1,942	1,591	1,946
	Payroll	42,612	51,735	50,003	50,556	58,246	63,039	79,173	69,416	87,532
Seafood Sales, Wholesale	Establishments	250	226	234	233	242	239	230	232	241
	Employees	1,913	1,957	1,878	1,974	2,055	1,849	2,098	2,128	2,081
	Payroll	77,115	75,945	79,266	83,964	90,247	83,818	89,907	101,920	103,464
Seafood sales, retail	Establishments	145	151	165	166	181	191	176	186	170
	Employees	849	945	909	1,037	1,137	1,133	1,140	1,164	1,190
	Payroll	20,158	21,577	23,476	25,844	29,066	26,981	29,146	30,086	31,968

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[4]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	246	258	259	263	278	281	269	284	275
	Employees	7,909	8,621	8,813	9,608	10,913	11,170	11,114	10,767	11,195
	Payroll	325,942	374,831	390,853	448,514	488,050	512,454	516,473	533,913	568,549
Deep Sea Freight Transportation	Establishments	65	75	69	77	76	65	58	64	55
	Employees	2,374	3,345	2,485	2,015	2,154	1,639	2,189	2,362	2,090
	Payroll	177,386	231,887	140,564	131,069	137,786	113,897	193,568	211,165	172,366
Deep Sea Passenger Transportation	Establishments	29	39	31	28	32	33	38	39	41
	Employees	ds	ds	ds	ds	10,510	10,161	9,882	10,714	10,584
	Payroll	ds	ds	ds	ds	967,938	864,475	970,607	1,013,720	1,077,237
Coastal and Great Lakes Freight Transportation	Establishments	54	60	47	62	57	62	64	67	70
	Employees	753	1,381	1,050	1,743	1,815	1,966	2,245	2,176	2,089
	Payroll	53,341	100,402	82,078	175,366	173,004	199,592	242,810	243,498	262,702
Port and Harbor Operations	Establishments	32	66	61	56	55	54	50	50	50
	Employees	377	2,082	555	588	987	1,006	1,560	1,867	1,967
	Payroll	16,879	72,554	25,439	20,647	32,032	32,969	39,956	44,789	66,474
Marine Cargo Handling	Establishments	64	43	58	61	69	63	72	66	62
	Employees	7,484	4,598	6,258	6,992	7,834	7,048	6,269	6,733	7,418
	Payroll	195,458	86,461	188,997	179,024	208,186	191,828	210,284	228,818	234,200
Navigational Services to Shipping	Establishments	150	151	180	190	196	194	226	223	222
	Employees	1,047	853	1,390	878	861	922	1,074	1,017	1,069
	Payroll	75,561	68,366	130,893	74,185	72,483	73,708	81,050	79,333	84,030
Marinas	Establishments	411	432	444	464	466	458	450	450	471
	Employees	4,657	4,918	5,076	5,421	5,472	5,405	5,481	5,738	6,101
	Payroll	142,997	148,573	145,265	168,185	171,354	176,315	184,529	202,187	204,545

[1] All data presented on this page are for the entire state of Florida, not just East Florida.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[3] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[4] ds = Data are suppressed.

Tables | Georgia



2020 Economic Impacts of the Georgia Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	19,321	3,246,416	716,545	1,181,394	2,431	134,384	52,798	71,833
Commercial Harvesters	836	37,658	12,932	18,519	836	37,658	12,932	18,519
Seafood Processors and Dealers	1,639	154,097	59,387	78,392	265	24,916	9,602	12,675
Importers	7,300	2,417,042	387,377	736,820	NA	NA	NA	NA
Seafood Wholesalers and Distributors	1,543	226,563	78,135	109,803	48	7,102	2,449	3,442
Retail	8,002	411,057	178,715	237,860	1,281	64,708	27,815	37,196

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	16,514	16,741	12,733	17,330	17,860	13,951	17,032	17,767	24,271	21,883
Finfish	42	66	90	80	50	56	67	89	97	111
Shellfish and Other	16,472	16,675	12,642	17,250	17,810	13,895	16,966	17,678	24,174	21,773
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	3,345	4,267	3,975	3,774	4,346	4,044	5,062	6,012	5,965	6,251
Clams	831	834	NA	NA	2,284	2,402	2,262	2,247	1,845	NA
Eastern oyster	131	143	127	150	204	148	178	126	136	103
Kingfishes	13	5	3	6	5	0	3	19	21	21
Quahog clams (mercenaria)	831	834	NA	NA	2,284	2,402	2,262	2,247	1,845	NA
Shad	NA	45	71	48	27	8	51	43	48	49
Shrimp	11,337	11,051	5,789	10,474	9,886	6,767	8,615	9,009	13,608	13,566

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	13,031	11,032	18,085	18,836	13,913	7,653	9,691	8,393	10,315	9,829
Finfish	32	58	76	70	36	21	57	59	71	76
Shellfish and Other	12,999	10,973	18,008	18,766	13,877	7,632	9,635	8,334	10,243	9,753
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	3,427	4,265	3,215	2,669	2,940	3,323	3,843	4,523	4,247	3,892
Clams	147	144	NA	NA	371	348	354	338	210	NA
Eastern oyster	26	25	26	26	33	24	29	20	17	7
Kingfishes	10	4	3	4	3	0	2	12	13	13
Quahog clams (mercenaria)	147	144	NA	NA	371	348	354	338	210	NA
Shad	NA	43	62	53	23	6	46	33	42	48
Shrimp	4,375	3,977	1,918	2,780	3,735	2,422	2,878	2,921	4,642	5,096

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	0.98	1.00	1.24	1.41	1.48	1.22	1.32	1.33	1.40	1.61
Clams	5.65	5.78	NA	NA	6.15	6.91	6.39	6.65	8.80	NA
Eastern oyster	5.09	5.73	4.85	5.71	6.26	6.17	6.19	6.46	7.81	15.71
Kingfishes	1.27	1.28	1.30	1.67	1.46	1.40	1.14	1.59	1.62	1.59
Quahog clams (mercenaria)	5.65	5.78	NA	NA	6.15	6.91	6.39	6.65	8.80	NA
Shad	NA	1.06	1.13	0.92	1.13	1.32	1.13	1.32	1.14	1.02
Shrimp	2.59	2.78	3.02	3.77	2.65	2.79	2.99	3.08	2.93	2.66

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Georgia Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	72	7,460	2,517	4,407
Private Boat	849	66,518	21,286	43,837
Shore	2,000	181,863	60,069	112,257
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	2,922	255,841	83,872	160,501

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
206,031	4,359	68,716	132,955

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	355	303	225	310	231	248	241	247	NA	NA
Coastal	146	134	99	125	81	110	110	91	NA	NA
Non-Coastal	131	96	72	115	80	89	73	81	NA	NA
Out-of-State	78	74	53	70	70	49	57	74	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	2,902	2,990	3,320	3,737	4,109	3,880	4,624	4,593	4,021	4,890
For-Hire	16	20	21	31	34	26	28	28	27	23
Private Boat	1,236	1,184	1,228	1,262	1,360	1,375	1,569	1,604	1,455	1,733
Shore	1,650	1,786	2,071	2,444	2,715	2,480	3,028	2,960	2,539	3,135

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	130	105	265	290	790	402	371	241	332	233
	R	749	781	1,362	2,058	1,321	1,179	1,060	1,404	1,893	1,697
Black drum	H	26	43	65	48	48	96	64	129	158	101
	R	20	53	35	22	56	54	85	189	180	239
Black sea bass	H	98	53	234	167	123	19	26	79	45	45
	R	526	425	826	1,925	1,087	314	681	849	1,181	891
Bluefish	H	10	21	17	70	49	12	9	91	26	11
	R	124	148	42	261	427	96	30	295	247	176
Red drum	H	201	96	237	212	201	290	468	607	272	230
	R	370	220	505	751	961	601	1,177	1,046	1,207	393
Sharks	H	11	14	26	< 1	8	19	4	5	5	9
	R	759	1,015	907	1,059	902	1,085	569	681	606	1,039
Sheepshead	H	282	141	129	56	121	187	159	403	152	249
	R	102	58	114	62	128	69	75	237	212	215
Southern flounder	H	55	43	52	58	130	84	101	117	97	149
	R	44	9	22	22	127	34	80	14	42	174
Southern kingfish	H	1,820	1,346	1,732	2,199	3,437	1,505	1,825	3,383	2,507	2,132
	R	1,689	1,778	1,206	984	1,490	1,742	1,283	2,234	1,559	1,771
Spotted seatrout	H	762	1,207	937	724	741	1,290	1,060	1,168	1,008	831
	R	1,348	2,197	1,321	1,688	1,764	2,113	2,437	2,113	2,673	2,632

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

2019 Georgia State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	239,034 (3%)	4,040,559 (3%)	213 (2.9%)	330 (2.9%)	638	0.05

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	61	71	60	62	87	100	96	108	NA
	Receipts	5,540	4,974	4,378	5,471	6,265	7,582	9,137	10,309	NA
Seafood sales, retail	Firms	89	97	77	103	84	75	72	64	NA
	Receipts	8,646	8,233	6,932	9,338	8,379	8,298	9,462	6,533	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	5	6	5	7	6	7	5	6	7
	Employees	1,022	854	945	895	854	917	641	618	595
	Payroll	39,433	32,928	35,987	37,122	37,368	38,634	31,721	24,905	24,589
Seafood Sales, Wholesale	Establishments	28	18	28	24	23	35	24	21	25
	Employees	562	468	469	792	701	731	198	183	207
	Payroll	20,660	15,459	17,326	24,726	26,254	28,745	6,327	6,177	8,093
Seafood sales, retail	Establishments	51	54	60	62	70	70	70	78	73
	Employees	176	214	210	229	248	283	269	306	283
	Payroll	2,566	3,425	3,390	3,745	4,539	4,966	4,863	5,923	6,257

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	15	14	15	16	17	15	15	17	17
	Employees	ds	ds	ds	ds	3,150	2,272	2,384	2,804	2,487
	Payroll	ds	ds	ds	ds	110,951	81,978	86,762	120,915	117,293
Deep Sea Freight Transportation	Establishments	12	12	7	9	9	9	11	10	11
	Employees	51	236	28	63	64	70	39	42	41
	Payroll	4,833	11,238	2,311	3,856	4,421	5,255	2,904	3,463	3,450
Deep Sea Passenger Transportation	Establishments	1	1	1	1	2	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	4	3	4	7	8	8	7	5	4
	Employees	ds	ds	ds	ds	66	84	71	44	36
	Payroll	ds	ds	ds	ds	4,356	5,074	4,661	3,822	3,399
Port and Harbor Operations	Establishments	2	13	7	4	4	5	4	5	6
	Employees	ds	ds	ds	ds	68	47	30	73	138
	Payroll	ds	ds	ds	ds	2,961	3,230	1,200	3,020	3,154
Marine Cargo Handling	Establishments	20	10	19	19	18	17	17	18	17
	Employees	4,655	ds	2,986	3,561	4,956	3,966	4,022	4,778	4,837
	Payroll	108,674	ds	120,985	124,394	117,785	98,105	105,327	125,992	140,006
Navigational Services to Shipping	Establishments	8	10	8	7	9	8	10	10	11
	Employees	ds	ds	ds	ds	203	149	142	151	166
	Payroll	ds	ds	ds	ds	12,202	9,904	10,117	12,053	12,837
Marinas	Establishments	63	63	59	65	67	63	66	68	72
	Employees	580	636	644	586	639	648	747	769	824
	Payroll	16,986	17,921	17,768	18,604	20,210	22,546	25,197	26,155	29,784

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | North Carolina



2020 Economic Impacts of the North Carolina Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	7,604	817,990	222,610	335,853	4,613	270,974	110,649	147,112
Commercial Harvesters	1,945	132,916	52,522	71,928	1,945	132,916	52,522	71,928
Seafood Processors and Dealers	525	42,015	16,336	21,109	373	29,880	11,618	15,013
Importers	1,355	448,530	71,886	136,732	NA	NA	NA	NA
Seafood Wholesalers and Distributors	360	46,557	16,328	21,552	109	14,143	4,960	6,547
Retail	3,418	147,971	65,537	84,532	2,185	94,034	41,549	53,624

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	71,160	72,978	79,127	93,895	105,203	97,326	97,126	78,362	87,463	78,152
Finfish	22,331	23,565	22,731	23,645	20,300	21,604	24,182	21,342	22,774	22,796
Shellfish and Other	48,829	49,413	56,397	70,250	84,903	75,721	72,944	57,020	64,688	55,357
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	3,160	2,132	1,727	1,865	1,651	2,290	1,135	1,635	1,569	672
Black sea bass	627	688	869	1,408	1,354	1,398	1,859	1,517	1,158	746
Blue crab	21,295	22,779	30,001	34,050	33,717	24,303	22,238	19,669	24,673	20,681
Clams	1,862	2,239	2,309	2,912	5,101	2,696	2,151	1,603	1,102	889
Flounders	8,893	7,419	7,066	13,058	12,845	12,057	11,967	10,719	10,374	4,811
Groupers	1,462	1,421	1,247	1,263	1,108	1,126	1,012	1,112	1,469	1,115
King mackerel	1,062	831	878	1,204	786	902	1,265	1,147	1,570	1,472
Shrimp	10,888	13,293	12,945	14,146	16,804	29,751	29,619	20,047	21,933	22,316
Snappers	1,004	900	917	865	797	955	998	1,172	1,568	1,044
Tunas	2,437	4,400	3,208	3,721	3,193	3,337	5,330	4,550	4,001	4,719

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	67,501	56,693	50,198	61,122	65,364	60,729	62,632	54,852	59,015	45,424
Finfish	25,520	19,929	19,209	23,879	18,518	16,679	16,118	14,766	15,793	15,762
Shellfish and Other	41,981	36,764	30,989	37,243	46,846	44,050	46,514	40,086	43,222	29,662
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	5,054	3,107	1,928	2,630	1,819	2,164	1,008	1,644	1,278	570
Black sea bass	272	256	330	527	468	439	631	497	385	272
Blue crab	30,035	26,787	22,203	26,231	32,124	25,645	19,273	17,014	22,989	13,549
Clams	295	396	347	431	414	339	289	211	123	74
Flounders	4,102	2,736	2,728	4,584	4,080	3,021	2,957	2,558	2,825	2,260
Groupers	408	382	311	299	259	261	223	239	302	221
King mackerel	408	297	345	550	391	437	629	507	698	612
Shrimp	5,140	6,141	4,859	4,691	9,077	13,832	13,896	9,730	9,547	9,710
Snappers	326	279	276	251	231	279	281	323	423	278
Tunas	1,056	1,482	1,283	1,460	1,085	1,239	1,802	1,300	1,266	1,583

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	0.63	0.69	0.90	0.71	0.91	1.06	1.13	0.99	1.23	1.18
Black sea bass	2.30	2.69	2.64	2.67	2.89	3.18	2.94	3.05	3.00	2.74
Blue crab	0.71	0.85	1.35	1.30	1.05	0.95	1.15	1.16	1.07	1.53
Clams	6.30	5.65	6.65	6.76	12.31	7.96	7.45	7.60	8.95	11.98
Flounders	2.17	2.71	2.59	2.85	3.15	3.99	4.05	4.19	3.67	2.13
Groupers	3.58	3.72	4.01	4.22	4.28	4.31	4.53	4.65	4.87	5.03
King mackerel	2.60	2.79	2.54	2.19	2.01	2.07	2.01	2.26	2.25	2.40
Shrimp	2.12	2.16	2.66	3.02	1.85	2.15	2.13	2.06	2.30	2.30
Snappers	3.08	3.22	3.32	3.44	3.45	3.42	3.55	3.63	3.71	3.75
Tunas	2.31	2.97	2.50	2.55	2.94	2.69	2.96	3.50	3.16	2.98

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of North Carolina Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	1,609	160,271	54,280	92,262
Private Boat	2,674	284,408	99,233	172,019
Shore	10,931	1,137,411	400,332	691,660
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	15,214	1,582,090	553,845	955,941

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
1,171,227	97,089	268,023	806,114

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	1,499	1,661	1,405	1,656	1,548	1,889	1,512	1,537	NA	NA
Coastal	490	614	564	549	479	541	481	460	NA	NA
Non-Coastal	254	283	240	301	239	281	235	268	NA	NA
Out-of-State	755	764	601	805	830	1,066	795	809	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	19,469	18,555	18,136	18,960	20,357	21,199	22,497	16,624	17,540	16,399
For-Hire	129	159	161	130	148	181	195	148	161	215
Private Boat	5,213	5,055	4,848	4,896	4,993	4,860	5,045	4,279	4,647	5,414
Shore	14,127	13,342	13,127	13,934	15,216	16,158	17,258	12,197	12,733	10,771

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker and spot	H	7,354	3,526	7,422	10,279	4,010	3,038	3,085	2,542	3,474	1,594
	R	11,999	6,875	12,243	14,391	12,617	9,086	6,534	6,374	5,990	7,234
Black sea bass	H	180	134	90	333	320	195	317	86	152	133
	R	2,570	4,650	3,041	5,023	5,036	5,536	6,191	2,224	2,803	2,439
Bluefish	H	3,614	2,684	4,288	4,419	4,123	4,489	3,173	3,305	2,753	2,108
	R	7,150	3,268	7,051	5,863	6,356	6,803	8,256	7,912	7,162	6,558
Dolphinfish	H	639	427	323	403	740	481	280	495	458	262
	R	16	5	5	7	74	3	3	28	35	27
King mackerel	H	32	56	48	72	96	108	110	103	185	146
	R	< 1	6	9	35	17	44	95	76	115	71
Southern flounder and lefteye flounder species	H	291	283	229	443	227	94	227	102	111	76
	R	3,226	4,025	4,012	3,290	2,781	2,877	2,990	1,497	2,055	2,529
Spanish mackerel	H	855	996	995	1,029	835	918	996	1,013	1,479	1,286
	R	480	592	686	814	515	547	688	1,019	1,340	1,267
Spotted seatrout	H	724	1,603	1,108	725	249	979	1,218	449	1,937	2,053
	R	7,421	4,916	4,279	3,949	4,824	6,475	5,148	15,238	7,161	6,156
Striped bass	H	249	24	58	21	41	20	73	161	46	43
	R	808	501	361	374	343	1,089	3,691	1,867	809	928
Yellowfin tuna	H	33	70	53	44	38	80	119	61	45	84
	R	< 1	9	1	7	2	29	18	4	2	33

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 North Carolina State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	238,015 (3%)	3,932,620 (3%)	195 (2.6%)	316 (2.8%)	596	0.04

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	50	46	58	63	72	69	59	52	NA
	Receipts	2,705	1,630	4,605	4,599	4,715	4,204	3,535	2,986	NA
Seafood sales, retail	Firms	144	136	127	137	134	122	149	134	NA
	Receipts	10,386	11,990	12,175	13,430	12,705	12,215	13,921	12,965	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

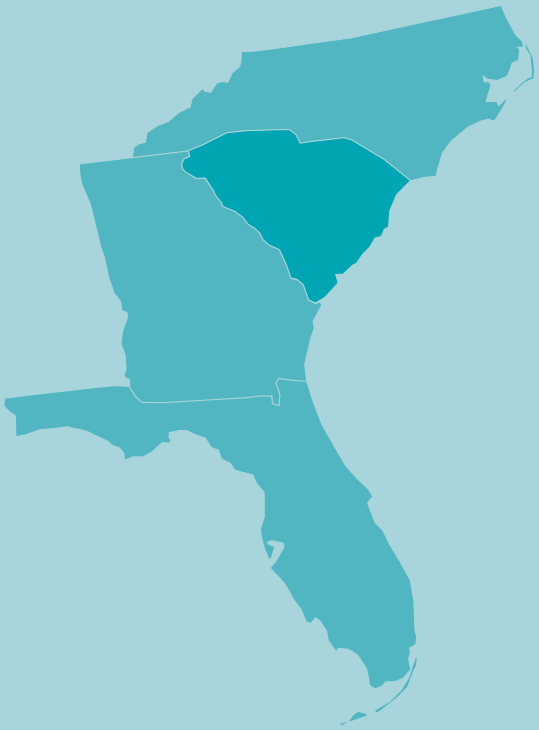
Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	14	12	13	14	16	14	13	14	12
	Employees	ds	ds	135	128	128	128	240	313	353
	Payroll	4,830	5,084	4,563	4,720	6,582	6,366	10,124	12,700	15,148
Seafood Sales, Wholesale	Establishments	64	59	59	56	59	57	51	50	49
	Employees	603	793	849	966	1,187	1,267	739	742	771
	Payroll	19,344	23,949	26,687	30,292	38,462	43,297	27,127	27,873	31,278
Seafood sales, retail	Establishments	84	88	86	93	91	93	93	93	97
	Employees	244	289	254	278	255	282	316	317	352
	Payroll	5,250	5,860	5,872	6,263	6,681	7,207	8,223	8,479	9,024

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	57	60	52	52	62	63	66	65	62
	Employees	1,515	1,760	1,059	1,153	1,422	1,571	1,807	2,028	2,140
	Payroll	66,929	74,843	49,462	50,102	65,388	73,550	89,950	96,174	99,071
Deep Sea Freight Transportation	Establishments	8	7	8	8	6	5	3	3	3
	Employees	ds	25	ds	ds	ds	ds	ds	87	113
	Payroll	ds	1,579	ds	ds	ds	ds	ds	6,229	10,412
Deep Sea Passenger Transportation	Establishments	1	NA	NA	NA	NA	2	NA	NA	NA
	Employees	ds	NA	NA	NA	NA	ds	NA	NA	NA
	Payroll	ds	NA	NA	NA	NA	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	5	6	5	5	6	5	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Port and Harbor Operations	Establishments	3	9	5	2	2	2	4	3	NA
	Employees	ds	ds	46	ds	ds	ds	126	100	NA
	Payroll	ds	ds	1,579	ds	ds	ds	4,437	2,037	NA
Marine Cargo Handling	Establishments	14	6	9	9	9	9	8	9	9
	Employees	ds	ds	ds	ds	797	594	627	618	673
	Payroll	ds	ds	ds	ds	14,767	14,204	26,470	28,482	37,128
Navigational Services to Shipping	Establishments	11	8	10	13	13	12	17	14	12
	Employees	86	90	77	78	78	71	133	120	97
	Payroll	4,041	3,203	3,583	3,844	4,350	4,369	5,941	5,574	4,967
Marinas	Establishments	104	102	99	100	105	109	92	99	96
	Employees	524	531	501	541	579	624	525	679	665
	Payroll	16,187	15,975	16,369	16,774	18,672	21,964	17,773	23,916	23,097

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | South Carolina



2020 Economic Impacts of the South Carolina Seafood Industry (thousands of dollars; number of jobs)[1]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	1,623	139,133	46,090	65,209	1,385	88,717	36,194	48,219
Commercial Harvesters	517	43,460	17,014	23,443	517	43,460	17,014	23,443
Seafood Processors and Dealers	114	10,405	4,070	5,234	105	9,573	3,745	4,815
Importers	130	42,944	6,883	13,091	NA	NA	NA	NA
Seafood Wholesalers and Distributors	64	7,737	2,718	3,570	37	4,472	1,571	2,064
Retail	798	34,587	15,405	19,871	726	31,212	13,864	17,897

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	24,675	25,592	24,625	24,193	24,578	25,065	25,741	22,093	25,113	26,214
Finfish	8,864	7,023	8,325	6,770	7,481	7,044	8,453	6,161	6,645	6,976
Shellfish and Other	15,811	18,570	16,299	17,423	17,097	18,021	17,288	15,932	18,468	19,238
Key Species	-	-	-	-	-	-	-	-	-	-
Black sea bass	181	303	471	341	246	156	251	187	292	65
Blue crab	5,084	5,800	6,368	5,822	4,831	5,538	5,569	5,143	5,158	5,642
Clams	823	583	699	585	570	726	434	580	245	228
Groupers	1,709	1,119	1,394	1,412	1,199	754	1,042	1,094	987	1,167
Oysters	1,975	2,153	2,402	2,243	2,258	2,321	2,612	2,967	3,725	3,077
Sharks	99	108	55	87	18	33	42	38	34	43
Shrimp	7,004	8,689	5,935	8,035	8,525	8,129	8,313	6,324	8,164	8,990
Snappers	1,085	1,334	1,075	948	1,067	1,090	1,116	1,156	1,236	1,422
Swordfish	3,628	2,105	2,370	1,298	1,437	1,785	1,815	1,614	1,724	2,144
Tilefish	8	148	404	538	537	NA	780	326	341	197

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	12,565	12,770	10,919	10,381	10,971	11,007	10,774	8,979	9,838	9,730
Finfish	3,160	2,583	2,586	2,360	3,095	2,660	3,047	1,898	2,199	2,434
Shellfish and Other	9,405	10,187	8,333	8,021	7,876	8,347	7,727	7,081	7,639	7,296
Key Species	-	-	-	-	-	-	-	-	-	-
Black sea bass	100	118	178	131	81	49	81	62	87	24
Blue crab	5,439	5,900	5,134	3,833	3,746	4,382	4,390	3,890	3,971	3,422
Clams	150	102	118	90	94	85	59	60	29	25
Groupers	386	252	298	284	229	133	185	190	168	199
Oysters	337	361	376	339	331	314	327	324	374	297
Sharks	108	103	44	56	13	21	29	23	20	26
Shrimp	2,914	3,433	2,039	2,615	3,406	3,136	2,755	2,159	2,667	3,025
Snappers	358	425	321	270	305	287	305	307	318	347
Swordfish	912	613	625	366	428	528	526	529	661	722
Tilefish	4	51	160	194	171	NA	191	83	85	57

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Black sea bass	1.82	2.57	2.64	2.60	3.03	3.20	3.11	3.00	3.37	2.70
Blue crab	0.93	0.98	1.24	1.52	1.29	1.26	1.27	1.32	1.30	1.65
Clams	5.48	5.71	5.94	6.49	6.08	8.53	7.39	9.69	8.57	9.19
Groupers	4.42	4.45	4.68	4.97	5.24	5.67	5.63	5.75	5.87	5.87
Oysters	5.85	5.96	6.39	6.61	6.81	7.39	7.99	9.15	9.95	10.35
Sharks	0.91	1.04	1.26	1.55	1.34	1.59	1.44	1.61	1.68	1.64
Shrimp	2.40	2.53	2.91	3.07	2.50	2.59	3.02	2.93	3.06	2.97
Snappers	3.03	3.14	3.34	3.52	3.50	3.79	3.66	3.77	3.88	4.09
Swordfish	3.98	3.43	3.79	3.54	3.36	3.38	3.45	3.05	2.61	2.97
Tilefish	1.84	2.87	2.53	2.76	3.15	NA	4.08	3.92	4.02	3.47

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of South Carolina Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	451	41,839	13,894	24,074
Private Boat	1,191	95,945	29,412	62,487
Shore	4,918	466,733	156,544	295,465
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	6,560	604,516	199,851	382,026

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
487,921	26,940	102,851	358,130

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	478	736	852	864	1,033	775	714	861	NA	NA
Coastal	148	207	166	181	192	163	184	176	NA	NA
Non-Coastal	66	123	84	114	157	102	93	116	NA	NA
Out-of-State	264	406	602	569	684	510	437	569	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	8,507	8,111	9,751	8,746	8,962	9,335	9,389	9,897	11,839	8,734
For-Hire	75	24	48	95	97	78	88	131	129	97
Private Boat	2,170	2,223	2,187	2,276	2,371	2,624	3,136	2,279	2,949	2,630
Shore	6,262	5,865	7,515	6,375	6,494	6,634	6,165	7,487	8,760	6,007

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker and spot	H	4,124	5,135	5,041	1,859	8,094	5,243	2,663	1,232	908	1,219
	R	2,477	1,744	9,645	6,651	6,055	8,655	5,125	5,884	4,042	13,305
Black sea bass	H	104	127	53	249	88	56	197	63	76	49
	R	2,366	1,212	1,022	4,286	2,079	2,282	3,266	1,362	2,247	1,157
Bluefish	H	1,439	924	2,106	820	921	1,123	752	765	877	289
	R	2,911	615	1,914	1,470	2,597	1,583	3,105	1,530	5,571	1,898
Red drum	H	373	296	283	393	258	241	456	263	333	240
	R	1,618	1,083	1,865	1,875	1,433	1,267	2,094	1,494	2,912	1,705
Sharks	H	26	22	57	33	13	19	11	6	13	10
	R	1,714	2,489	4,477	2,571	2,921	1,694	1,429	1,867	1,797	1,156
Sheepshead	H	458	128	66	169	141	136	204	118	164	135
	R	203	163	315	421	368	391	436	421	533	411
Southern flounder	H	323	258	191	140	184	187	221	114	114	122
	R	63	120	0	0	0	< 1	0	< 1	0	< 1
Southern kingfish	H	1,731	2,774	3,639	2,207	1,368	1,450	1,783	923	896	2,444
	R	458	712	0	22	11	45	3	4	2	< 1
Spanish mackerel	H	472	258	101	194	390	306	46	289	1,047	861
	R	389	313	130	137	322	334	300	322	1,589	1,060
Spotted seatrout	H	193	622	441	260	311	311	648	257	814	511
	R	744	1,762	2,191	1,407	1,148	1,791	1,950	1,063	2,477	1,302

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 South Carolina State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	111,926 (1.4%)	1,949,406 (1.5%)	83.5 (1.1%)	136 (1.2%)	245	0.1

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	32	35	30	28	26	31	30	37	NA
	Receipts	1,326	1,868	1,657	2,690	2,438	3,782	4,136	4,909	NA
Seafood sales, retail	Firms	87	67	67	73	69	57	72	67	NA
	Receipts	5,535	4,818	3,765	4,845	6,007	5,753	5,869	5,115	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	1	NA	NA	4	2	1	NA	NA	NA
	Employees	ds	NA	NA	ds	ds	ds	NA	NA	NA
	Payroll	ds	NA	NA	ds	ds	ds	NA	NA	NA
Seafood Sales, Wholesale	Establishments	12	15	16	12	16	15	14	15	17
	Employees	101	125	134	148	146	151	157	135	140
	Payroll	3,760	4,506	4,849	5,329	5,327	5,193	4,840	4,732	4,616
Seafood sales, retail	Establishments	61	60	56	56	54	58	48	52	51
	Employees	245	228	222	224	185	200	163	185	229
	Payroll	4,231	3,670	3,713	3,633	3,883	4,006	3,186	3,935	5,630

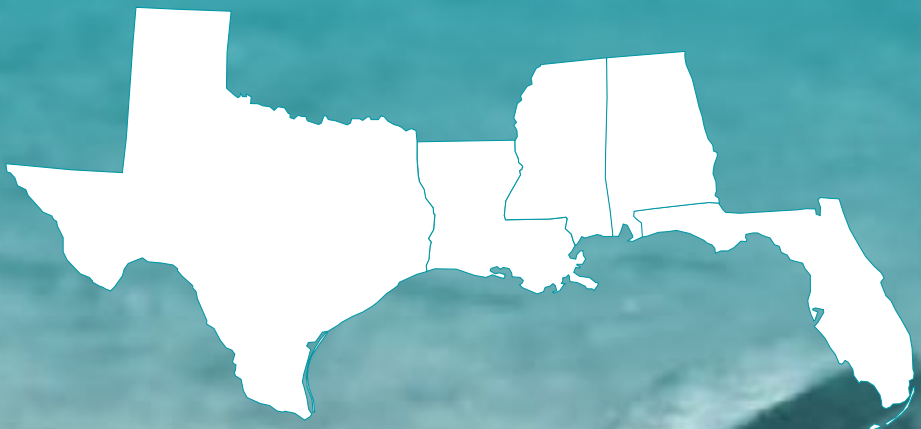
Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	41	39	37	37	34	34	32	32	35
	Employees	1,943	1,980	2,262	2,225	2,690	2,789	3,031	3,307	3,383
	Payroll	85,568	90,942	96,081	98,324	115,262	125,487	141,999	158,443	168,577
Deep Sea Freight Transportation	Establishments	6	6	4	1	1	1	NA	NA	NA
	Employees	ds	ds	21	ds	ds	ds	NA	NA	NA
	Payroll	722	ds	633	ds	ds	ds	NA	NA	NA
Deep Sea Passenger Transportation	Establishments	2	1	NA	NA	NA	1	NA	NA	NA
	Employees	ds	ds	NA	NA	NA	ds	NA	NA	NA
	Payroll	ds	ds	NA	NA	NA	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	4	5	5	5	4	5	7	6	NA
	Employees	ds	40	ds	ds	ds	33	44	40	NA
	Payroll	ds	2,625	ds	ds	ds	1,899	2,777	2,036	NA
Port and Harbor Operations	Establishments	5	7	2	3	4	4	3	3	3
	Employees	ds	676	ds	ds	ds	ds	ds	34	35
	Payroll	ds	29,332	ds	ds	ds	ds	ds	2,303	2,477
Marine Cargo Handling	Establishments	14	10	13	14	15	14	10	9	8
	Employees	1,717	715	ds	1,902	2,467	2,117	1,614	1,814	2,924
	Payroll	49,172	30,381	ds	66,803	59,595	75,187	79,262	84,486	79,405
Navigational Services to Shipping	Establishments	8	10	8	9	9	9	10	10	10
	Employees	217	247	221	219	236	255	320	334	311
	Payroll	11,922	16,625	13,820	14,513	16,311	18,135	21,257	22,025	24,338
Marinas	Establishments	75	70	77	70	70	74	67	66	64
	Employees	543	595	650	661	633	717	684	715	747
	Payroll	15,805	15,408	16,147	17,212	16,996	19,201	18,948	19,885	20,492

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Gulf of Mexico Region

- Alabama
- West Florida
- Louisiana
- Mississippi
- Texas



Recreational fishing.
Photo: Return 'Em Right

MANAGEMENT CONTEXT

The Gulf of Mexico Region includes Alabama, Louisiana, Mississippi, Texas and West Florida. Federal fisheries in this region are managed by the Gulf of Mexico Fishery Management Council (GMFMC) and NOAA Fisheries under seven fishery management plans (FMPs). The coastal migratory pelagic resources and spiny lobster fisheries are managed jointly with the South Atlantic Fishery Management Council (SAFMC).

Gulf of Mexico Region FMPs

- Aquaculture
- Coastal migratory pelagic resources (with SAFMC)
- Corals
- Red drum
- Reef fish
- Shrimp
- Spiny lobster (with SAFMC)

Only one of the stocks/stock complexes covered in these FMPs — greater amberjack — was listed as overfished in 2019.

In 2019, two stocks/complexes, gray triggerfish (Gulf of Mexico stock) and greater amberjack (Gulf of Mexico stock), were added to the overfishing list. No other species managed by the GMFMC were determined to be subject to overfishing in 2019. In addition, gray snapper (Gulf of Mexico stock) and lane snapper (Gulf of Mexico stock) were removed from the overfishing lists in 2019.

Catch Share Programs

Two catch share programs have been implemented in the Gulf of Mexico: the Red Snapper Individual Fishing Quota (IFQ) Program and the Grouper and Tilefish IFQ Program. The landings revenues for these programs totaled $54.6 million in 2019. The following are descriptions of these catch share programs and their performance.

Red Snapper IFQ Program: This program was implemented in 2007 to reduce overcapacity and mitigate derby fishing conditions in the red snapper segment of the commercial reef fish fishery. The 2019 key performance indicators of the program show that relative to the baseline period (the three-year period prior to implementation), the number of active vessels decreased, while quota, landings, inflation-adjusted landings revenue, and inflation-adjusted revenue per active vessel increased.

Grouper and Tilefish IFQ Program: This program was implemented in 2010 to reduce overcapacity, increase harvesting efficiency, and eliminate the race to fish in the grouper–tilefish segment of the commercial reef fish fishery. The 2019 key performance indicators of the program show that relative to the baseline period (the three-year period prior to implementation), quota, landings, the number of active vessels, and inflation-adjusted landings revenue decreased, while inflation-adjusted revenue per active vessel increased.

COMMERCIAL FISHERIES — GULF OF MEXICO REGION

In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Key Gulf of Mexico Commercial Species

- Blue crab
- Crawfish
- Groupers
- Menhaden
- Mullets
- Oysters
- Red snapper
- Shrimp
- Spiny lobster
- Tunas

Economic Impacts

The premise behind economic impact modeling is that every dollar spent in a regional economy (direct impact) is either saved or re-spent on additional goods or services. If those dollars are re-spent on other goods and services in the regional economy, this spending generates additional economic activity in the region.

Four different measures are commonly used to show how commercial fisheries landings affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as commercial fishing. The category includes both the direct sales of fish landed and sales made between businesses and households resulting

from the original sale. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the sales of seafood or purchases of inputs to commercial fishing. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in numbers of jobs. Note that these categories are not additive. The United States seafood industry is defined here as the commercial fishing sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers.[1,2]

This report provides estimates of total economic impacts for the nation and for each of the 23 coastal states. Total economic impacts for each state and the nation represent the sum of direct impacts; indirect impacts (in this case, the impact from suppliers to the seafood industry); and induced impacts (spending by employees on personal and household expenditures, where employees of both the seafood industry and its full supply chain are included). That is, the total economic impact estimates reported here measure jobs, sales, value-added, and income impacts from the seafood industry as well as the economic activity generated throughout each region's broader economy from this industry.

In 2020, the commercial fishing and seafood industry in Florida generated the largest employment impacts in the Gulf of Mexico region with 76,685 full- and part-time jobs. Florida also generated the largest sales impacts ($18.5 billion), value-added impacts ($6.2 billion), and income impacts ($3.5 billion).

Landings Revenue

In 2020, landings revenue in the Gulf of Mexico Region totaled $732.5 million, a 9% decrease from 2011 (a 21% decrease in real terms after adjusting for inflation) and a 10% decrease from 2019. Landings revenue was highest in Louisiana ($263 million), followed by Texas ($195.6 million).

Shellfish and other landings revenue accounted for 73% of all landings revenue. In 2020, shrimp ($341.4 million), menhaden ($105.1 million), and blue crab ($69.7 million) had the highest landings revenue in this region. Together, these top three species accounted for 70% of total landings revenue.

From 2011 to 2020, red snapper (178%, 140% in real terms), blue crab (42%, 23% in real terms), and crawfish (11%, -4% in real terms) had the largest increases, while tunas (-68%, -72% in real terms), mullets (-60%, -65% in real terms), and spiny lobster (-38%, -46% in real terms) had the largest decreases. From 2019 to 2020, menhaden (3%) and blue crab (0.2%) had the largest increases, while oysters (-33%), tunas (-29%), and spiny lobster (-26%) had the largest decreases.

Commercial Revenue: Largest Increases

From 2011:
- Red snapper (178%, 140% in real terms)
- Blue crab (42%, 23% in real terms)
- Crawfish (11%, -4% in real terms)

From 2019:
- Menhaden (3%)
- Blue crab (0.2%)

Commercial Revenue: Largest Decreases

From 2011:
- Tunas (-68%, -72% in real terms)
- Mullets (-60%, -65% in real terms)
- Spiny lobster (-38%, -46% in real terms)

From 2019:
- Oysters (-33%)
- Tunas (-29%)
- Spiny lobster (-26%)

Landings

In 2020, Gulf of Mexico Region commercial fishermen landed over 1.2 billion pounds of finfish and shellfish. This represents a 32% decrease from 2011 and a 14% decrease from 2019. Menhaden contributed the highest landings volume in the region, accounting for 75% of total landing weight.

From 2011 to 2020, red snapper increased 117%, while tunas (-64%), mullets (-61%), and oysters (-52%) had the largest decreases. From 2019 to 2020, groupers (3%) and red snapper (0.5%) had the largest increases, while

[1] The NMFS Commercial Fishing Industry Input/Output Model was used to generate the impact estimates. [Available at: www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf.]
[2] Commercial economic impacts data were not available for West Florida specifically; data for the entire state of Florida are reported here.

oysters (-30%), mullets (-21%), and spiny lobster (-18%) had the largest decreases.

Commercial Landings: Largest Increases

From 2011:
- Red snapper (117%)

From 2019:
- Groupers (3%)
- Red snapper (0.5%)

Commercial Landings: Largest Decreases

From 2011:
- Tunas (-64%)
- Mullets (-61%)
- Oysters (-52%)

From 2019:
- Oysters (-30%)
- Mullets (-21%)
- Spiny lobster (-18%)

Prices

In 2020, spiny lobster ($7.06 per pound) received the highest ex-vessel price in the region. Landings of menhaden ($0.12 per pound) had the lowest ex-vessel price. From 2011 to 2020, oysters (91%, 65% in real terms), blue crab (82%, 57% in real terms), and groupers (56%, 35% in real terms) had the largest increases, while tunas (-12%, -24% in real terms) had the largest decreases. From 2019 to 2020, menhaden (21%), blue crab (13%), and mullets (1%) had the largest increases, while tunas (-17%), spiny lobster (-10%), and groupers (-5%) had the largest decreases.

RECREATIONAL FISHERIES — GULF OF MEXICO REGION

In this report, recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. This recreational fisheries section reports on economic impacts and expenditures, angler participation, fishing trips, and catch of key species/species groups.[3,4,5]

Key Gulf of Mexico Region Recreational Species[6]
- Atlantic croaker
- Gulf and southern kingfish
- Red drum
- Red snapper
- Sand and silver seatrouts
- Sheepshead
- Southern flounder
- Spanish mackerel
- Spotted seatrout
- Striped mullet

Economic Impacts and Expenditures

The economic contribution of recreational fishing activities in the Gulf of Mexico Region is based on spending by recreational anglers.[7] Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusting by the CPI (consumer price index) to the current year. After 2018, state level durable expenditures and durable impacts will no longer be available due to changes in the availability of angler participation data at the state level.

Four different measures are commonly used to show how angler expenditures affect the economy in a region (state or nationwide): sales, income, value-added, and employment. The term sales refers to the gross value of all sales by regional businesses affected by an activity, such as recreational fishing. The category includes both the direct sales made by the angler and sales made between businesses and households resulting from that original sale by the angler. Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region. Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers. The first three measures are calculated in terms of dollars, whereas employment impacts are measured in number of jobs. Note that these categories are not additive. NOAA Fisheries uses a regional impact modeling software, called IMPLAN, to estimate these four types of impacts.

The economic contributions for trip expenditures from recreational fishing in 2020 were estimated using IMPLAN version 3, with base year data from 2017. Models for each

[3] Atlantic and Gulf recreational catch and effort estimates are based upon the MRIP estimates released in 2018.
[4] Louisiana harvest and release totals for 2014-2020 are estimated using data from a state creel survey.
[5] Data collected by the Texas Parks and Wildlife Department (TPWD) is reported in this table. The data collected by the TPWD differs from the data collected and reported in the MRIP. Data on the number of fish released are not reported by TPWD. [For more information: www.tpwd.state.tx.us.]

state and for the nation were created in IMPLAN using trip expenditures (based on 2016/2017 survey data on average trip expenditures and total 2020 trips).

The greatest employment impacts from expenditures on saltwater recreational fishing in the Gulf of Mexico Region were generated in West Florida (26,493 jobs), followed by Alabama (7,681 jobs) and Louisiana (5,607 jobs). The largest sales impacts were observed in West Florida ($2.9 billion), followed by Alabama ($766.9 million) and Louisiana ($662.3 million). The biggest income impacts were generated in West Florida ($988.6 million), followed by Alabama ($223.6 million) and Louisiana ($210.2 million). The greatest value-added impacts were in West Florida ($1.8 billion), followed by Alabama ($452.4 million) and Louisiana ($383 million).

A large portion of the approximately 3.6 billion in trip expenses came from trips in the private boat (43.3%) and shore (42.1%) sectors.

Participation

Due to changes in data availability after 2018, angler participation data is not being reported at the state level for years after 2018.

Fishing Trips

In 2020, recreational fishermen took 56.8 million fishing trips in the Gulf of Mexico Region.[8] This number represented a 9% decrease from 2011 and a 14% increase from 2019. The largest proportions of trips were taken in the shore mode (55%) and private boat (42%). States with the highest number of recorded trips in the Gulf of Mexico Region were West Florida (42.2 million trips) and Alabama (6.6 million trips).

Harvest and Release Trends

Of the Gulf of Mexico Region's key species and species groups, spotted seatrout (26.9 million fish), red drum (10.5 million fish), and Atlantic croaker (10.4 million fish) were most frequently caught by recreational fishermen. The following text box shows the species with the largest percentage increases and decreases in the past 10 years and in the past year.

From 2011 to 2020, there were no increases in the combined total of harvest and released for any of the key species. Southern flounder (-81%), sand and silver seatrouts (-64%), and Gulf and southern kingfish (-44%) had the largest decreases. From 2019 to 2020, sheepshead (21%) and sand and silver seatrouts (0.9%) had the largest increases, while Spanish mackerel (-46%), red snapper (-30%), and Gulf and southern kingfish (-25%) had the largest decreases.

Harvest and Release: Largest Increases

From 2011:
- There were no percent increases.

From 2019:
- Sheepshead (21%)
- Sand and silver seatrouts (0.9%)

Harvest and Release: Largest Decreases

From 2011:
- Southern flounder (-81%)
- Sand and silver seatrouts (-64%)
- Gulf and southern kingfish (-44%)

From 2019:
- Spanish mackerel (-46%)
- Red snapper (-30%)
- Gulf and southern kingfish (-25%)

MARINE ECONOMY — GULF OF MEXICO REGION

For this report, the marine economy refers to the fishing and marine-related industries in a coastal state. The state marine economy consists of two industry sectors: 1) seafood sales and processing (employer establishments and non-employer firms); and 2) transportation support and marine operations (employer establishments). These sectors include several different marine-related industries.[9]

[6] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[7] Trip expenditure estimates were generated from the 2016/2017 National Marine Recreational Fishing Expenditure Survey (Lovell et al., 2020). Durable goods expenditures were generated from the 2019 National Marine Recreational Fishing Expenditure Survey. [For citations: Publications-Recreational Fisheries Economics Research.]
[8] Texas Trip estimates are not available for the shore mode. Shore mode in Louisiana has been included in the private mode since 2014.
[9] Unless otherwise stated, data are from the U.S. Census Bureau. County Business Patterns data and Nonemployer Statistics available at https://www.census.gov. The Census data are only available through 2018. GDP and Compensation of Employees data was obtained from the U.S. Bureau of Economic Analysis, 'Table SAGDP1 Gross Domestic Product' and 'Table SA6N Compensation of Employees by NAICS Industry,' respectively. Percentage changes in inflation-adjusted (real) dollar terms are calculated using the annual Gross Domestic Product implicit price deflator, which was obtained from the Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/USAGDPDEFAISMEI).

Note that when discussing the marine economy in the Gulf of Mexico Region, all statistics include the entire state of Florida and not just West Florida.

The Commercial Fishing Location Quotient (CFLQ) measures the size of the commercial fishing sector in a state's economy relative to the size of the commercial fishing sector in the national economy.[10] The CFLQ is calculated as the ratio of the percentage of regional employment in the commercial fishing sector relative to the percentage of national employment in the commercial fishing sector. The U.S. CFLQ is 1. If a state CFLQ is less than 1, then less commercial fishing occurs in this state than the national average. If a state CFLQ is greater than 1, then more commercial fishing occurs in this state than the national average.

Louisiana had the highest CFLQ at 4.75. Mississippi had a CFLQ value of 4.39.

In 2019, 1.5 million employer establishments operated throughout the entire Gulf of Mexico Region (including marine and non-marine related establishments). These establishments employed 24.4 million workers and had a total annual payroll of $1.2 trillion. The combined gross state product of Alabama, West Florida, Louisiana, Mississippi, and Texas was approximately $3.6 trillion in 2019.

Seafood Sales and Processing[11]

Seafood Product Preparation and Packaging: In 2019, the Gulf of Mexico Region had 125 employer firms in the seafood product preparation and packaging sector (a 9% increase from 2011). The greatest number of establishments in this sector was in Louisiana (34), followed by Texas (30) and West Florida (25).

Retail Seafood Sales: In 2019, the Gulf of Mexico Region had 362 employer firms in the seafood retail sector (a 5% increase from 2011). The greatest number of establishments in this sector was in West Florida (170), followed by Louisiana (96) and Texas (49).

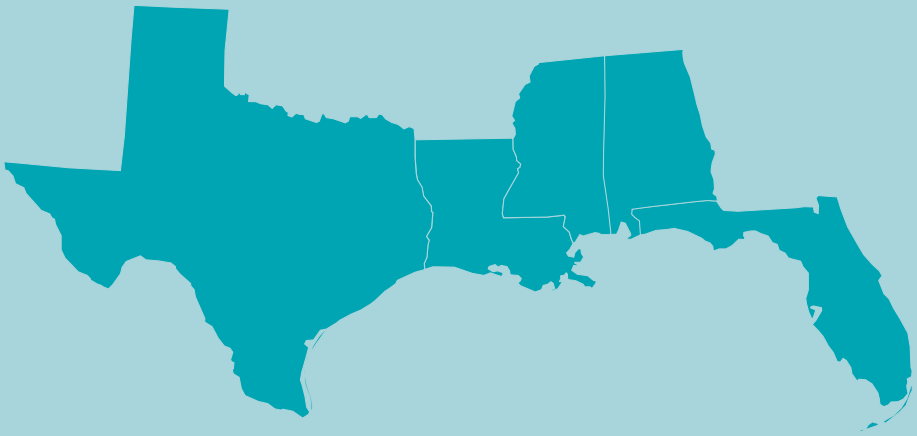
Wholesale Seafood Sales: There were 468 employer firms in the seafood wholesale sector in the Gulf of Mexico Region in 2019 (remains unchanged from 2011). The greatest number of establishments in this sector was in West Florida (241), followed by Louisiana (110) and Texas (89).

Transportation Support and Marine Operations

Data for the transportation support and marine operations sectors of the Gulf of Mexico Region's economy were largely suppressed for confidentiality reasons. It is clear, however, that these sectors play an important role in the regional economy. For example, in 2019, the ship and boat building sector in the Gulf of Mexico Region accounted for $3 billion in payroll.

[10] U.S. Bureau of Labor Statistics, 'Location Quotient Calculator.'
[11] This report has provided economic statistics (number of firms and annual receipts) for non-employer firms in the seafood sales and processing sectors in previous volumes. Currently, this information is not available from the Census Bureau for 2019.

Tables | Gulf of Mexico Region



2020 Economic Impacts of the Gulf of Mexico Seafood Industry (thousands of dollars; number of jobs)

State	Landings Revenue	With Imports				Without Imports			
		Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Alabama	66,572	11,475	560,378	222,965	291,716	11,402	549,999	220,398	287,796
Florida	212,358	76,685	18,501,239	3,451,325	6,179,998	8,231	863,421	226,859	348,384
Louisiana	262,965	22,371	1,353,405	508,582	687,828	21,929	1,256,871	489,056	655,001
Mississippi	51,988	6,459	346,873	136,974	177,125	6,431	342,393	135,868	175,443
Texas	195,628	35,517	4,900,200	1,201,802	1,897,752	15,296	1,078,693	398,152	555,106

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	805,149	781,200	930,359	1,057,002	853,585	888,975	872,931	890,435	816,050	732,461
Finfish	193,664	189,959	200,596	206,767	246,370	258,415	181,177	219,414	205,976	194,196
Shellfish and Other	611,485	591,241	729,762	850,235	607,215	630,560	691,753	671,021	610,075	538,265
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	48,943	52,538	62,042	79,679	74,567	65,569	69,146	76,392	69,605	69,730
Crawfish	9,887	8,291	16,457	16,144	6,852	12,373	12,105	12,550	13,169	10,995
Groupers	19,932	24,672	24,910	30,435	27,693	28,746	22,287	19,692	21,044	20,582
Menhaden	103,523	87,377	90,706	93,267	138,628	143,342	72,202	116,530	102,448	105,097
Mullets	10,395	8,753	13,552	11,715	7,654	8,560	6,668	5,879	5,229	4,169
Oysters	64,908	76,025	75,552	90,240	96,093	86,217	110,900	104,074	87,929	59,026
Red snapper	11,109	13,319	20,253	22,527	26,792	25,843	28,374	28,675	32,161	30,837
Shrimp	421,762	401,797	497,398	577,479	345,569	390,430	434,005	398,359	371,027	341,418
Spiny lobster	35,568	22,249	47,116	53,416	44,059	41,311	31,944	43,629	30,045	22,144
Tunas	5,518	10,726	7,345	5,153	4,585	5,699	5,153	3,711	2,466	1,760

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1,768,543	1,668,976	1,351,768	1,243,777	1,553,491	1,737,033	1,401,776	1,543,219	1,407,081	1,208,955
Finfish	1,442,564	1,350,463	1,041,144	920,611	1,252,979	1,434,021	1,082,782	1,226,477	1,133,853	955,909
Shellfish and Other	325,979	318,513	310,625	323,166	300,512	303,012	318,994	316,743	273,228	253,046
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	55,688	53,747	47,119	51,643	52,623	51,991	54,468	53,191	49,422	43,703
Crawfish	9,582	6,834	19,641	13,055	5,461	13,573	8,575	11,178	9,406	7,971
Groupers	7,026	8,329	7,701	8,991	7,824	7,951	5,871	4,679	4,509	4,637
Menhaden	1,374,285	1,275,789	971,306	848,599	1,188,941	1,364,034	1,016,831	1,166,097	1,074,438	908,750
Mullets	14,256	12,210	13,899	15,163	10,858	11,430	9,317	8,237	7,057	5,568
Oysters	19,092	21,200	19,526	17,513	16,633	15,272	17,705	15,329	12,956	9,070
Red snapper	3,482	3,942	5,198	5,548	6,559	6,284	6,903	6,692	7,501	7,543
Shrimp	216,852	217,589	204,215	217,012	203,613	204,478	223,240	221,546	187,321	175,250
Spiny lobster	5,295	3,770	5,645	5,039	5,451	5,016	3,622	5,821	3,835	3,137
Tunas	1,590	3,084	2,113	1,717	1,342	1,633	1,509	973	666	574

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	0.88	0.98	1.32	1.54	1.42	1.26	1.27	1.44	1.41	1.60
Crawfish	1.03	1.21	0.84	1.24	1.25	0.91	1.41	1.12	1.40	1.38
Groupers	2.84	2.96	3.23	3.39	3.54	3.62	3.80	4.21	4.67	4.44
Menhaden	0.08	0.07	0.09	0.11	0.12	0.11	0.07	0.10	0.10	0.12
Mullets	0.73	0.72	0.98	0.77	0.70	0.75	0.72	0.71	0.74	0.75
Oysters	3.40	3.59	3.87	5.15	5.78	5.65	6.26	6.79	6.79	6.51
Red snapper	3.19	3.38	3.90	4.06	4.08	4.11	4.11	4.29	4.29	4.09
Shrimp	1.94	1.85	2.44	2.66	1.70	1.91	1.94	1.80	1.98	1.95
Spiny lobster	6.72	5.90	8.35	10.60	8.08	8.24	8.82	7.49	7.83	7.06
Tunas	3.47	3.48	3.48	3.00	3.42	3.49	3.41	3.81	3.70	3.06

[1] The information for Florida in this Economic Impacts table is for the entire state. Data for the remaining commercial tables pertain only to West Florida.

2020 Economic Impacts of Gulf of Mexico Recreational Fishing (thousands of dollars; number of jobs)

State	Trips	Jobs	Sales	Income	Value Added
Alabama	6,623	7,681	766,928	223,555	452,350
Louisiana	2,501	5,607	662,289	210,197	382,978
Mississippi	4,298	1,317	117,198	39,034	72,584
Texas	1,201	3,257	434,382	139,159	262,855
West Florida	42,198	26,493	2,910,805	988,644	1,843,038

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
3,594,877	525,153	1,556,954	1,512,770

Recreational Anglers by Residential Area (thousands of anglers)[1,2]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	3,048	3,071	3,373	2,859	2,635	2,704	2,612	1,806	NA	NA
Coastal	2,737	2,803	2,973	2,674	2,437	2,445	2,316	1,572	NA	NA
Non-Coastal	311	268	400	185	199	259	296	234	NA	NA

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

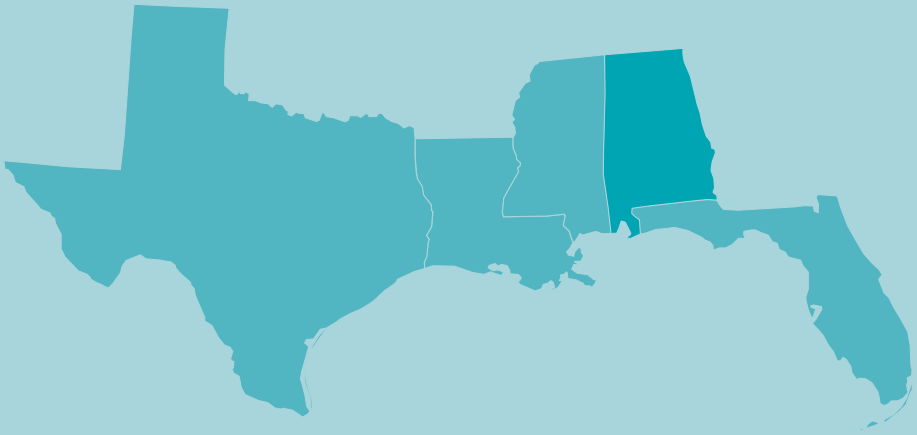
Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	62,732	67,560	69,151	52,602	50,495	54,287	58,514	55,585	49,890	56,821
For-Hire	906	1,115	1,052	1,067	1,211	1,270	1,249	1,421	1,687	1,394
Private Boat	31,334	33,602	31,616	25,297	23,461	24,602	25,137	23,556	21,212	23,914
Shore	30,492	32,843	36,483	26,239	25,823	28,414	32,128	30,607	26,991	31,512

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[4,5]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	4,765	3,100	4,640	5,995	3,323	2,213	3,401	3,875	3,126	3,476
	R	13,084	8,842	7,303	5,307	5,857	5,372	11,053	11,481	9,132	6,920
Gulf and South kingfish	H	2,250	3,378	4,071	1,647	2,530	4,247	3,898	3,634	1,064	1,429
	R	1,300	1,492	1,208	1,120	703	1,936	2,134	1,269	1,594	564
Red drum	H	7,316	5,908	7,615	1,582	1,984	1,845	1,737	1,661	1,791	1,522
	R	14,072	14,547	17,579	7,256	8,064	7,128	7,074	8,203	11,671	8,935
Red snapper	H	1,511	1,516	2,424	977	1,288	1,568	2,950	2,159	2,434	1,884
	R	5,818	4,463	5,630	4,205	3,455	6,650	9,270	6,190	6,713	4,537
Sand and silver seatrouts	H	11,139	11,092	6,368	4,675	5,760	5,810	9,206	5,460	3,760	3,975
	R	5,594	5,597	3,614	1,466	2,567	2,767	6,074	2,805	2,253	2,093
Sheepshead	H	6,100	4,837	3,257	2,465	2,427	2,036	4,203	2,317	1,565	1,972
	R	4,029	3,921	5,081	3,683	3,848	2,320	4,159	5,265	3,393	4,034
Southern flounder	H	1,888	1,529	2,309	480	368	500	294	263	373	275
	R	541	659	639	214	337	203	56	298	115	175
Spanish mackerel	H	4,882	5,482	9,000	4,479	5,491	5,586	6,369	4,748	8,321	4,067
	R	6,370	4,616	11,855	6,157	4,236	2,762	7,935	6,153	9,900	5,805
Spotted seatrout	H	26,973	27,529	23,992	5,089	6,633	9,199	6,924	6,425	5,275	4,125
	R	43,436	47,941	43,650	18,523	19,787	29,400	30,569	19,870	18,928	22,800
Striped mullet	H	4,397	6,239	7,848	6,210	6,987	5,629	4,554	6,112	3,672	3,924
	R	666	536	557	1,416	382	1,195	147	976	596	163

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] West Florida anglers estimates are not available for the non-coastal category.
[3] Texas trip estimates are not available for the shore mode.
[4] Data collected by the Texas Parks and Wildlife Department (TPWD) is reported in this table. The data collected by the TPWD differs from the data collected and reported in the MRIP. Data on the number of fish released are not reported by TPWD. [For more information: www.tpwd.state.tx.us.]
[5] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

Tables | Alabama



2020 Economic Impacts of the Alabama Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	11,475	560,378	222,965	291,716	11,402	549,999	220,398	287,796
Commercial Harvesters	1,901	109,963	32,576	48,539	1,901	109,963	32,576	48,539
Seafood Processors and Dealers	1,907	144,400	56,562	71,878	1,859	140,746	55,131	70,059
Importers	20	6,511	1,044	1,985	NA	NA	NA	NA
Seafood Wholesalers and Distributors	173	9,739	3,414	4,398	172	9,697	3,399	4,379
Retail	7,475	289,765	129,369	164,917	7,470	289,593	129,292	164,819

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	49,995	44,942	50,777	62,843	43,165	50,820	56,222	67,670	57,662	66,572
Finfish	3,883	4,821	4,433	4,376	4,046	4,437	3,978	4,431	4,645	3,147
Shellfish and Other	46,112	40,121	46,344	58,467	39,119	46,383	52,244	63,239	53,017	63,424
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	1,128	1,044	1,037	1,296	1,226	1,785	1,520	1,150	1,404	901
King mackerel	207	220	439	416	344	281	121	143	190	133
Menhaden	58	84	104	147	154	164	158	173	71	69
Mullets	695	1,266	1,181	1,123	761	522	537	591	392	348
Oysters	1,322	1,255	786	433	341	601	557	914	1,543	2,426
Red snapper	314	316	401	697	1,443	1,423	1,852	1,559	2,024	1,511
Sharks	26	6	202	116	NA	0	71	122	NA	NA
Shrimp	43,608	37,720	44,427	56,712	37,533	43,973	50,138	61,038	50,020	59,802
Spanish mackerel	582	1,149	940	471	705	833	439	670	577	288
Vermilion snapper	622	393	88	385	247	242	267	277	482	248

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	25,621	25,553	21,648	23,718	22,773	24,579	26,737	35,353	26,021	29,803
Finfish	4,735	6,095	5,410	5,126	3,754	4,422	4,029	5,773	4,102	2,527
Shellfish and Other	20,886	19,458	16,238	18,592	19,018	20,157	22,709	29,579	21,919	27,276
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	1,617	1,325	1,027	1,161	1,301	1,918	1,425	1,034	1,516	915
King mackerel	119	117	175	184	146	112	53	59	79	51
Menhaden	364	521	496	700	695	804	1,052	1,713	745	332
Mullets	1,270	2,002	1,795	1,907	1,385	952	990	1,250	829	715
Oysters	296	265	133	58	26	37	26	25	141	196
Red snapper	78	78	108	180	356	320	410	360	452	323
Sharks	75	18	312	193	NA	2	153	201	NA	NA
Shrimp	18,840	17,603	14,883	17,339	17,665	18,171	21,224	28,309	20,204	25,215
Spanish mackerel	839	1,377	972	431	617	859	440	948	742	309
Vermilion snapper	224	132	28	124	74	76	80	83	146	74

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	0.70	0.79	1.01	1.12	0.94	0.93	1.07	1.11	0.93	0.98
King mackerel	1.74	1.89	2.51	2.26	2.35	2.50	2.29	2.44	2.42	2.60
Menhaden	0.16	0.16	0.21	0.21	0.22	0.20	0.15	0.10	0.09	0.21
Mullets	0.55	0.63	0.66	0.59	0.55	0.55	0.54	0.47	0.47	0.49
Oysters	4.47	4.73	5.91	7.43	12.96	16.36	21.21	36.13	10.91	12.40
Red snapper	4.04	4.05	3.70	3.86	4.05	4.45	4.52	4.33	4.48	4.68
Sharks	0.35	0.33	0.65	0.60	NA	0.11	0.46	0.61	NA	NA
Shrimp	2.31	2.14	2.99	3.27	2.12	2.42	2.36	2.16	2.48	2.37
Spanish mackerel	0.69	0.83	0.97	1.09	1.14	0.97	1.00	0.71	0.78	0.93
Vermilion snapper	2.78	2.97	3.12	3.11	3.33	3.19	3.34	3.32	3.30	3.35

[1] Confidential data are not included in the economic impacts, landings revenue totals, or landings total for the Gulf of Mexico Region table and all state tables in this region, with the exception of West Florida.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Alabama Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	773	71,489	22,422	39,310
Private Boat	1,291	140,845	35,428	91,024
Shore	5,617	554,594	165,706	322,016
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	7,681	766,928	223,555	452,350

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
608,473	47,085	141,903	419,485

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	907	723	1,052	853	831	915	911	917	NA	NA
Coastal	295	254	279	220	225	274	186	211	NA	NA
Non-Coastal	177	131	224	123	151	176	246	156	NA	NA
Out-of-State	435	339	549	510	455	465	480	551	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	5,738	6,151	6,769	6,482	6,830	7,320	8,493	6,681	6,677	6,623
For-Hire	77	59	90	87	96	104	93	95	136	94
Private Boat	2,288	2,114	2,155	2,037	2,080	2,010	2,540	1,833	1,742	1,999
Shore	3,373	3,978	4,524	4,357	4,653	5,206	5,860	4,753	4,799	4,530

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

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	1,844	544	860	2,844	2,003	559	1,522	1,771	765	727
	R	4,659	2,011	2,016	3,605	3,468	1,393	6,101	4,870	3,813	3,126
Bluefish	H	398	210	362	173	109	690	105	93	373	1,044
	R	688	581	1,554	722	408	3,705	651	559	772	946
Kingfish	H	1,408	646	2,545	850	1,082	916	1,756	2,047	645	524
	R	659	240	691	389	371	734	1,327	1,008	1,325	388
Red drum	H	343	323	451	290	413	386	387	378	358	224
	R	244	808	1,130	861	493	604	989	1,297	751	727
Red snapper	H	604	403	757	364	630	646	1,249	824	967	862
	R	1,434	549	1,477	2,018	1,366	2,834	2,397	1,720	1,878	1,575
Sand seatrout	H	3,379	2,277	1,078	1,431	2,315	1,894	2,639	2,268	1,543	1,319
	R	1,384	828	601	740	715	1,043	3,300	652	1,164	887
Sheepshead	H	1,113	1,065	493	335	845	283	569	310	214	544
	R	372	117	104	41	660	71	43	184	309	363
Southern flounder	H	318	242	194	123	104	139	101	83	25	41
	R	101	121	102	74	110	85	12	49	3	6
Spanish mackerel	H	1,309	1,478	2,921	477	2,240	1,772	2,529	1,601	3,752	596
	R	447	477	2,496	162	1,054	355	1,233	1,362	3,985	168
Spotted seatrout	H	1,455	1,396	1,299	574	1,228	1,464	891	839	285	267
	R	2,572	2,030	2,009	581	2,354	2,711	1,567	1,511	887	1,072

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[3] Kingfish include southern kingfish and Gulf kingfish.

2019 Alabama State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	100,731 (1.3%)	1,758,609 (1.3%)	79.5 (1.1%)	127 (1.1%)	231	0.46

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	67	47	58	57	49	38	44	41	NA
	Receipts	4,354	1,965	3,069	3,446	2,901	3,365	3,362	3,661	NA
Seafood sales, retail	Firms	58	68	66	55	46	43	48	49	NA
	Receipts	4,759	7,073	5,520	4,351	3,274	2,971	3,602	4,164	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

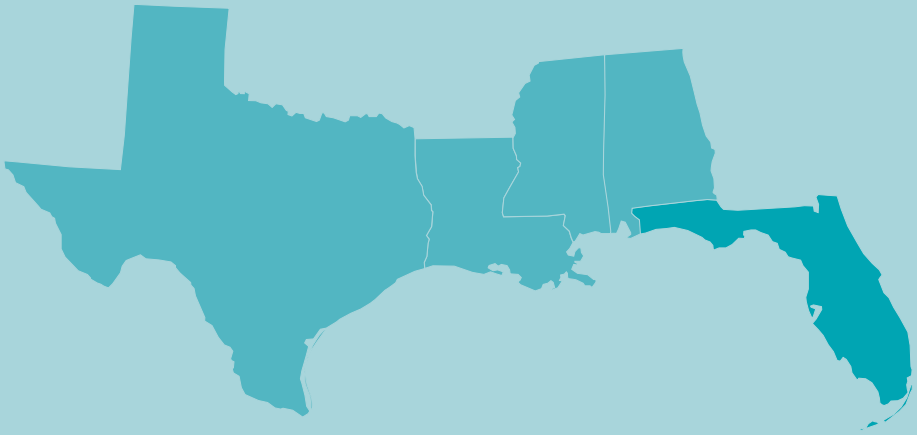
Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	16	17	22	23	20	20	20	19	19
	Employees	882	778	989	963	961	900	892	918	1,105
	Payroll	21,922	19,730	22,641	23,973	25,951	27,924	25,272	29,971	28,441
Seafood Sales, Wholesale	Establishments	25	16	18	18	21	17	16	15	14
	Employees	321	306	281	388	378	412	280	309	244
	Payroll	6,547	6,221	6,861	9,321	10,034	10,487	5,629	6,304	8,312
Seafood sales, retail	Establishments	32	32	28	31	32	32	37	36	38
	Employees	120	189	219	200	234	255	157	178	218
	Payroll	1,888	2,990	3,267	3,330	3,706	4,013	3,040	3,251	3,417

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	35	37	38	37	41	43	35	35	37
	Employees	3,176	4,936	5,948	5,904	6,049	6,025	5,748	5,403	5,958
	Payroll	166,116	251,063	303,016	311,296	342,082	342,073	341,849	337,504	419,519
Deep Sea Freight Transportation	Establishments	6	5	5	2	2	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Deep Sea Passenger Transportation	Establishments	2	1	NA	NA	NA	NA	NA	NA	NA
	Employees	ds	ds	NA	NA	NA	NA	NA	NA	NA
	Payroll	ds	ds	NA	NA	NA	NA	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	5	4	5	5	4	4	8	8	6
	Employees	215	ds	ds	45	ds	ds	56	51	45
	Payroll	13,117	ds	ds	2,617	ds	ds	4,066	4,158	4,957
Port and Harbor Operations	Establishments	3	6	3	2	2	2	7	8	7
	Employees	ds	101	4	ds	ds	ds	62	141	142
	Payroll	ds	5,788	160	ds	ds	ds	3,704	7,965	8,358
Marine Cargo Handling	Establishments	19	10	13	13	14	15	12	13	15
	Employees	536	ds	554	778	666	709	574	1,004	1,028
	Payroll	34,998	ds	34,481	37,273	37,154	47,407	44,177	64,036	68,308
Navigational Services to Shipping	Establishments	16	14	12	16	14	14	22	20	19
	Employees	283	241	208	124	121	113	293	278	173
	Payroll	14,981	8,808	14,761	6,902	6,922	5,911	17,849	21,093	12,003
Marinas	Establishments	53	57	54	54	57	57	56	56	57
	Employees	ds	329	332	343	387	372	482	467	506
	Payroll	12,196	10,253	9,659	9,804	11,182	12,086	15,065	14,633	16,800

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | West Florida



2020 Economic Impacts of the Florida Seafood Industry (thousands of dollars; number of jobs)[1,2,3]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	76,685	18,501,239	3,451,325	6,179,998	8,231	863,421	226,859	348,384
Commercial Harvesters	5,361	423,022	131,375	175,246	5,361	423,022	131,375	175,246
Seafood Processors and Dealers	4,466	860,979	166,625	327,569	440	91,060	17,623	34,645
Importers	40,872	13,532,605	2,168,858	4,125,331	NA	NA	NA	NA
Seafood Wholesalers and Distributors	9,853	1,350,774	530,309	659,774	362	49,672	19,501	24,262
Retail	16,134	2,333,859	454,157	892,078	2,067	299,668	58,359	114,231

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	168,796	153,486	190,811	212,082	196,525	186,321	185,933	190,602	173,129	155,309
Finfish	59,652	62,378	69,868	71,546	65,077	67,970	64,482	58,294	58,622	53,512
Shellfish and Other	109,143	91,107	120,943	140,537	131,448	118,351	121,452	132,307	114,508	101,797
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	7,829	5,490	6,791	7,406	8,508	6,596	7,194	8,884	9,748	8,110
Gag	1,439	2,445	2,846	2,889	2,783	4,671	2,556	2,763	3,205	2,817
Lobsters	35,575	22,257	47,125	53,420	44,062	41,316	31,947	43,632	30,053	22,149
Mullet	8,649	6,192	11,409	9,389	6,181	6,988	5,009	4,499	4,209	3,255
Oyster	8,776	9,887	5,920	4,179	4,722	5,163	5,179	3,169	2,756	2,219
Quahog clam	1,003	805	1,141	221	191	58	117	73	114	120
Red grouper	15,086	16,761	16,428	21,219	18,952	17,881	14,158	11,258	10,691	12,087
Red snapper	5,417	6,142	8,208	8,126	10,011	8,649	9,552	10,166	11,751	12,217
Shrimp	27,255	23,831	30,452	42,790	34,663	31,189	44,136	41,417	34,454	35,010
Stone crab	24,233	24,594	25,172	27,965	35,778	29,926	29,058	32,273	33,957	31,006

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	83,986	76,041	75,134	81,547	74,794	72,931	75,192	71,657	66,575	63,931
Finfish	38,234	40,620	38,284	40,311	34,359	38,946	36,241	30,752	30,386	24,381
Shellfish and Other	45,753	35,421	36,850	41,236	40,435	33,985	38,951	40,905	36,188	39,551
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	6,924	4,463	4,767	4,467	4,880	3,871	4,411	5,465	6,016	4,404
Gag	369	613	687	689	642	1,076	575	576	623	558
Lobsters	5,298	3,772	5,647	5,041	5,451	5,017	3,624	5,824	3,837	3,138
Mullet	11,428	8,632	11,294	11,945	8,647	9,321	7,042	6,054	5,782	4,670
Oyster	3,167	3,368	1,735	758	844	853	786	517	432	361
Quahog clam	154	132	199	36	23	7	13	9	16	9
Red grouper	5,635	6,151	5,479	6,630	5,672	5,304	3,921	2,801	2,386	2,809
Red snapper	1,538	1,699	2,216	2,107	2,646	2,338	2,532	2,565	2,837	3,078
Shrimp	11,930	9,493	11,007	12,877	13,386	12,153	19,429	20,252	16,177	19,037
Stone crab	2,727	2,667	1,946	1,948	2,760	3,006	2,510	2,114	2,195	2,147

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	1.13	1.23	1.42	1.66	1.74	1.70	1.63	1.63	1.62	1.84
Gag	3.90	3.99	4.14	4.19	4.33	4.34	4.45	4.79	5.14	5.04
Lobsters	6.72	5.90	8.34	10.60	8.08	8.24	8.81	7.49	7.83	7.06
Mullet	0.76	0.72	1.01	0.79	0.71	0.75	0.71	0.74	0.73	0.70
Oyster	2.77	2.94	3.41	5.51	5.60	6.05	6.59	6.13	6.38	6.15
Quahog clam	6.51	6.08	5.74	6.20	8.17	7.82	8.65	7.67	7.14	13.01
Red grouper	2.68	2.73	3.00	3.20	3.34	3.37	3.61	4.02	4.48	4.30
Red snapper	3.52	3.62	3.70	3.86	3.78	3.70	3.77	3.96	4.14	3.97
Shrimp	2.28	2.51	2.77	3.32	2.59	2.57	2.27	2.05	2.13	1.84
Stone crab	8.89	9.22	12.94	14.36	12.97	9.96	11.58	15.27	15.47	14.44

[1] Confidential data are not included in the economic impacts, landings revenue totals, or landings total for the Gulf of Mexico Region table and all state tables in this region, with the exception of West Florida.
[2] The information for Florida in this Economic Impacts table is for the entire state. Data for the remaining commercial tables pertain only to West Florida.
[3] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of West Florida Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	5,076	555,584	193,335	330,846
Private Boat	8,753	963,175	326,089	621,424
Shore	12,664	1,392,046	469,220	890,768
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	26,493	2,910,805	988,644	1,843,038

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
2,127,360	313,415	839,530	974,416

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	3,216	3,859	4,351	4,365	3,813	3,699	3,783	3,238	NA	NA
Coastal	1,592	1,718	1,813	1,649	1,414	1,393	1,400	1,193	NA	NA
Non-Coastal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Out-of-State	1,624	2,141	2,538	2,716	2,399	2,306	2,383	2,046	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	40,063	44,998	46,293	38,625	35,730	38,936	41,840	40,996	35,645	42,198
For-Hire	560	715	686	693	769	805	772	825	984	939
Private Boat	20,688	23,306	21,551	18,859	16,775	17,883	18,025	17,326	15,293	17,115
Shore	18,815	20,977	24,056	19,073	18,186	20,249	23,043	22,845	19,367	24,143

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[3,4]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Common snook	H	1	1	39	33	36	48	66	22	20	9
	R	1,687	2,561	3,801	3,622	5,195	7,208	5,824	4,967	6,285	7,981
Gag grouper	H	313	282	466	327	278	214	279	304	250	342
	R	3,597	2,680	2,663	2,057	1,289	2,122	3,354	2,267	2,431	3,139
Gray snapper	H	1,528	3,877	3,561	4,609	3,474	3,787	3,098	3,171	3,502	3,656
	R	7,116	10,027	15,084	17,621	15,712	12,922	13,954	13,778	12,628	21,892
King mackerel	H	350	470	399	563	485	575	476	352	297	289
	R	159	202	182	254	157	405	204	49	134	70
Mullets	H	2,308	4,424	4,394	4,022	3,146	3,931	3,699	9,364	3,252	3,591
	R	266	245	597	1,519	519	1,585	606	977	587	409
Porgies (sheepshead)	H	1,634	2,113	1,500	1,883	1,349	1,546	2,757	1,827	1,122	1,175
	R	3,054	3,108	3,468	3,590	2,130	2,201	4,039	4,956	2,956	3,335
Red drum	H	702	1,110	902	836	1,124	844	805	626	601	733
	R	6,632	6,061	5,576	5,510	6,996	5,755	4,423	5,407	9,582	6,812
Sand and silver seatrouts	H	2,424	4,387	2,139	1,279	959	521	1,463	598	486	501
	R	856	2,309	675	420	1,434	665	1,052	364	217	168
Spanish mackerel	H	3,510	3,796	5,960	3,974	3,184	3,677	3,810	2,964	4,537	3,438
	R	5,865	4,014	9,343	5,986	3,171	2,354	6,589	4,719	5,796	5,616
Spotted seatrout	H	3,821	4,493	3,657	2,714	2,730	3,299	3,680	3,467	2,790	2,317
	R	28,685	29,785	20,134	16,124	15,691	22,996	24,949	16,301	15,212	19,182

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Non-coastal data are not available because all of the state's residents are considered coastal county residents.
[3] Data collected by the Texas Parks and Wildlife Department (TPWD) is reported in this table. The data collected by the TPWD differs from the data collected and reported in the MRIP. Data on the number of fish released are not reported by TPWD. [For more information: www.tpwd.state.tx.us.]
[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.

2019 Florida State Economy (percentage of national total)[1,2,3]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	574,512 (7.2%)	8,860,042 (6.7%)	427 (5.7%)	603 (5.3%)	1,116	0.84

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)[1]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	294	307	300	315	300	316	280	287	NA
	Receipts	14,618	17,557	17,214	22,329	21,841	20,834	19,651	21,888	NA
Seafood sales, retail	Firms	362	383	338	346	355	320	316	349	NA
	Receipts	29,037	30,765	25,332	26,433	29,033	24,296	27,937	30,559	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[1]

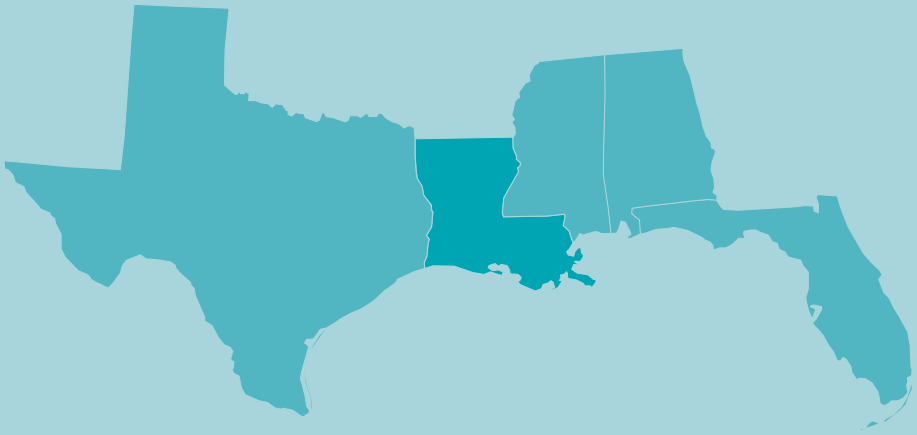
Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	24	27	25	27	27	23	23	22	25
	Employees	1,095	1,608	1,374	1,419	1,429	1,535	1,942	1,591	1,946
	Payroll	42,612	51,735	50,003	50,556	58,246	63,039	79,173	69,416	87,532
Seafood Sales, Wholesale	Establishments	250	226	234	233	242	239	230	232	241
	Employees	1,913	1,957	1,878	1,974	2,055	1,849	2,098	2,128	2,081
	Payroll	77,115	75,945	79,266	83,964	90,247	83,818	89,907	101,920	103,464
Seafood sales, retail	Establishments	145	151	165	166	181	191	176	186	170
	Employees	849	945	909	1,037	1,137	1,133	1,140	1,164	1,190
	Payroll	20,158	21,577	23,476	25,844	29,066	26,981	29,146	30,086	31,968

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[4]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	246	258	259	263	278	281	269	284	275
	Employees	7,909	8,621	8,813	9,608	10,913	11,170	11,114	10,767	11,195
	Payroll	325,942	374,831	390,853	448,514	488,050	512,454	516,473	533,913	568,549
Deep Sea Freight Transportation	Establishments	65	75	69	77	76	65	58	64	55
	Employees	2,374	3,345	2,485	2,015	2,154	1,639	2,189	2,362	2,090
	Payroll	177,386	231,887	140,564	131,069	137,786	113,897	193,568	211,165	172,366
Deep Sea Passenger Transportation	Establishments	29	39	31	28	32	33	38	39	41
	Employees	ds	ds	ds	ds	10,510	10,161	9,882	10,714	10,584
	Payroll	ds	ds	ds	ds	967,938	864,475	970,607	1,013,720	1,077,237
Coastal and Great Lakes Freight Transportation	Establishments	54	60	47	62	57	62	64	67	70
	Employees	753	1,381	1,050	1,743	1,815	1,966	2,245	2,176	2,089
	Payroll	53,341	100,402	82,078	175,366	173,004	199,592	242,810	243,498	262,702
Port and Harbor Operations	Establishments	32	66	61	56	55	54	50	50	50
	Employees	377	2,082	555	588	987	1,006	1,560	1,867	1,967
	Payroll	16,879	72,554	25,439	20,647	32,032	32,969	39,956	44,789	66,474
Marine Cargo Handling	Establishments	64	43	58	61	69	63	72	66	62
	Employees	7,484	4,598	6,258	6,992	7,834	7,048	6,269	6,733	7,418
	Payroll	195,458	86,461	188,997	179,024	208,186	191,828	210,284	228,818	234,200
Navigational Services to Shipping	Establishments	150	151	180	190	196	194	226	223	222
	Employees	1,047	853	1,390	878	861	922	1,074	1,017	1,069
	Payroll	75,561	68,366	130,893	74,185	72,483	73,708	81,050	79,333	84,030
Marinas	Establishments	411	432	444	464	466	458	450	450	471
	Employees	4,657	4,918	5,076	5,421	5,472	5,405	5,481	5,738	6,101
	Payroll	142,997	148,573	145,265	168,185	171,354	176,315	184,529	202,187	204,545

[1] All data presented on this page are for the entire state of Florida, not just West Florida.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[4] ds = Data are suppressed.

Tables | Louisiana



2020 Economic Impacts of the Louisiana Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	22,371	1,353,405	508,582	687,828	21,929	1,256,871	489,056	655,001
Commercial Harvesters	8,383	491,307	166,926	244,489	8,383	491,307	166,926	244,489
Seafood Processors and Dealers	1,892	191,043	74,101	94,519	1,815	183,303	71,100	90,690
Importers	238	78,813	12,631	24,026	NA	NA	NA	NA
Seafood Wholesalers and Distributors	677	88,383	30,109	38,975	631	82,396	28,070	36,335
Retail	11,181	503,860	224,814	285,819	11,099	499,865	222,961	283,487

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	331,054	327,870	396,047	480,068	368,762	417,711	369,069	375,885	317,319	262,965
Finfish	111,468	89,747	102,938	96,566	108,039	157,254	84,623	114,225	81,012	81,562
Shellfish and Other	219,586	238,123	293,108	383,503	260,723	260,457	284,446	261,660	236,307	181,403
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	36,827	42,402	51,467	66,989	58,084	49,487	54,217	60,667	52,232	54,797
Crawfish	9,887	8,291	16,457	16,144	6,852	12,373	12,105	12,550	13,169	10,995
King mackerel	1,570	1,452	1,477	2,379	2,006	2,150	2,073	2,003	2,427	1,452
Menhaden	93,547	64,861	80,325	72,832	85,439	132,105	60,909	90,315	60,347	66,442
Mullets	775	976	626	916	418	720	757	389	132	2
Oysters	41,086	41,981	43,832	64,665	81,806	62,236	84,417	75,973	50,134	23,754
Red snapper	1,936	2,187	4,315	5,836	5,951	5,198	6,716	6,112	5,445	4,568
Shrimp	131,393	145,103	181,053	235,420	113,711	136,128	133,299	112,016	120,385	91,739
Tunas	3,369	7,906	4,594	3,418	2,837	4,290	2,583	2,324	1,813	1,216
Vermilion snapper	505	662	473	688	619	914	821	699	581	254

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1,284,246	1,213,719	991,060	870,175	1,067,089	1,252,400	897,823	1,031,962	898,851	739,194
Finfish	1,128,383	1,050,357	822,014	686,165	915,083	1,090,590	737,231	875,882	761,232	627,769
Shellfish and Other	155,864	163,362	169,046	184,010	152,006	161,811	160,592	156,080	137,619	111,424
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	43,891	44,323	39,064	43,219	41,308	40,099	43,874	42,742	37,404	34,332
Crawfish	9,582	6,834	19,641	13,055	5,461	13,573	8,575	11,178	9,406	7,971
King mackerel	986	954	759	1,144	1,047	994	1,052	1,021	1,108	649
Menhaden	1,106,931	1,026,240	800,101	663,693	893,789	1,068,690	716,056	855,216	741,233	611,966
Mullets	1,385	1,385	609	1,186	692	1,005	1,093	630	258	6
Oysters	11,039	11,324	11,196	12,235	13,994	11,010	13,329	10,924	7,095	3,182
Red snapper	829	928	1,067	1,325	1,405	1,236	1,557	1,414	1,414	1,208
Shrimp	90,552	100,182	98,604	114,794	90,507	96,658	94,226	90,673	83,301	65,636
Tunas	932	2,152	1,241	1,104	664	1,139	679	570	431	298
Vermilion snapper	229	287	173	237	207	331	311	254	206	91

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	0.84	0.96	1.32	1.55	1.41	1.23	1.24	1.42	1.40	1.60
Crawfish	1.03	1.21	0.84	1.24	1.25	0.91	1.41	1.12	1.40	1.38
King mackerel	1.59	1.52	1.95	2.08	1.92	2.16	1.97	1.96	2.19	2.24
Menhaden	0.08	0.06	0.10	0.11	0.10	0.12	0.09	0.11	0.08	0.11
Mullets	0.56	0.70	1.03	0.77	0.60	0.72	0.69	0.62	0.51	0.28
Oysters	3.72	3.71	3.91	5.29	5.85	5.65	6.33	6.95	7.07	7.47
Red snapper	2.33	2.36	4.04	4.40	4.23	4.20	4.31	4.32	3.85	3.78
Shrimp	1.45	1.45	1.84	2.05	1.26	1.41	1.41	1.24	1.45	1.40
Tunas	3.62	3.67	3.70	3.09	4.27	3.77	3.80	4.07	4.21	4.08
Vermilion snapper	2.20	2.30	2.73	2.90	3.00	2.76	2.64	2.75	2.83	2.79

[1] Confidential data are not included in the economic impacts, landings revenue totals, or landings total for the Gulf of Mexico Region table and all state tables in this region, with the exception of West Florida.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Louisiana Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	1,195	103,579	32,504	55,142
Private Boat	3,629	466,449	147,213	272,473
Shore	782	92,261	30,480	55,363
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	5,607	662,289	210,197	382,978

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
490,040	64,567	355,252	70,222

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	959	893	1,080	NA	NA	NA	NA	NA	NA	NA
Coastal	690	651	709	NA	NA	NA	NA	NA	NA	NA
Non-Coastal	86	77	109	NA	NA	NA	NA	NA	NA	NA
Out-of-State	183	165	262	NA	NA	NA	NA	NA	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	11,454	10,889	10,770	2,227	2,425	2,242	2,308	2,276	2,108	2,501
For-Hire	97	108	122	131	160	179	179	183	169	115
Private Boat	5,944	5,730	5,477	2,096	2,266	2,062	2,130	2,093	1,940	2,386
Shore	5,413	5,051	5,172	NA	NA	NA	NA	NA	NA	NA

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4,5,6,7]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	1,123	1,288	2,328	235	209	150	150	134	86	257
	R	5,472	4,122	3,973	0	0	0	0	0	0	0
Black drum	H	1,091	995	1,020	218	220	138	143	148	121	108
	R	2,854	2,421	4,064	0	0	0	0	0	0	0
Red drum	H	5,780	3,941	5,679	1,283	1,244	1,045	1,644	1,977	1,224	1,079
	R	6,809	6,505	10,046	0	0	0	0	0	0	0
Red snapper	H	63	153	113	128	171	145	119	101	123	103
	R	210	216	333	0	0	0	0	0	0	0
Sand seatrout	H	2,513	2,070	1,458	532	370	354	359	426	314	339
	R	2,475	1,397	1,845	0	0	0	0	0	0	0
Sheepshead	H	2,748	1,277	975	262	258	225	553	308	399	660
	R	514	605	1,386	0	0	0	0	0	0	0
Southern flounder	H	988	689	1,531	209	217	222	94	65	103	94
	R	189	207	251	0	0	0	0	0	0	0
Southern kingfish	H	34	316	41	4	20	6	18	25	18	6
	R	72	113	118	0	0	0	0	0	0	0
Spotted seatrout	H	19,035	19,410	16,267	3,231	4,292	5,326	5,142	2,578	3,542	3,834
	R	10,961	14,055	19,153	0	0	0	0	0	0	0
Yellowfin tuna	H	21	47	13	14	23	28	23	6	5	10
	R	8	6	2	0	0	0	0	0	0	0

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Louisiana resident participation is estimated from historical Marine Recreational Information Program (MRIP) data (2010-2013) and a state creel survey (2014-2019).
[3] Effort for 2014-2019 in Louisiana is estimated using data from a state creel survey and does not capture shore-based effort separately from private boat effort.
[4] Data collected by the Texas Parks and Wildlife Department (TPWD) is reported in this table. The data collected by the TPWD differs from the data collected and reported in the MRIP. Data on the number of fish released are not reported by TPWD. [For more information: www.tpwd.state.tx.us.]
[5] Louisiana harvest and release totals for 2014-2019 are estimated using data from a state creel survey.
[6] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[7] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2018 Louisiana State Economy (% of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	106,302 (1.3%)	1,719,561 (1.3%)	82.5 (1.1%)	129 (1.1%)	255	4.75

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	94	78	99	111	115	113	124	110	NA
	Receipts	9,308	8,492	9,136	8,632	10,086	11,917	12,051	10,552	NA
Seafood sales, retail	Firms	192	184	173	177	169	180	174	157	NA
	Receipts	18,758	16,804	17,538	17,383	17,870	18,880	17,009	17,201	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)

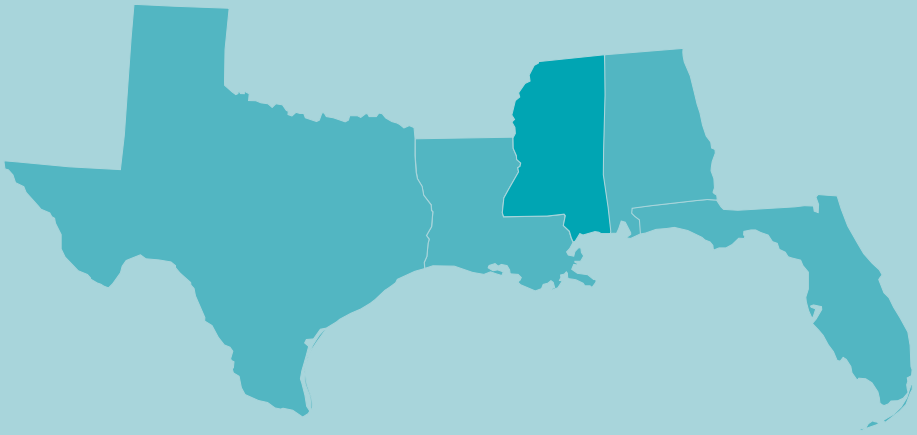
Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	33	35	36	37	38	34	36	34	34
	Employees	1,006	1,117	964	943	1,015	1,069	1,495	1,388	1,409
	Payroll	46,440	51,237	49,339	50,881	63,909	37,506	53,273	59,597	46,850
Seafood Sales, Wholesale	Establishments	94	103	106	109	111	116	114	113	110
	Employees	767	862	846	672	865	805	750	719	796
	Payroll	18,427	22,296	23,235	24,107	25,837	28,013	25,327	26,052	26,417
Seafood sales, retail	Establishments	100	97	94	90	90	90	93	96	96
	Employees	590	704	643	562	612	710	748	772	851
	Payroll	11,090	13,042	11,213	10,421	11,802	13,095	12,844	13,648	14,529

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	109	116	110	117	109	105	105	98	91
	Employees	11,722	10,933	7,413	8,512	8,470	5,629	5,765	5,101	4,583
	Payroll	639,047	631,098	416,319	479,243	401,977	316,927	311,710	287,719	288,882
Deep Sea Freight Transportation	Establishments	17	18	11	19	21	16	13	14	13
	Employees	93	ds	95	ds	451	300	126	358	204
	Payroll	5,608	ds	5,435	ds	21,706	25,246	12,921	23,746	19,439
Deep Sea Passenger Transportation	Establishments	3	2	4	4	3	3	3	3	NA
	Employees	ds	ds	3	ds	ds	ds	ds	82	NA
	Payroll	ds	ds	363	ds	ds	ds	ds	5,115	NA
Coastal and Great Lakes Freight Transportation	Establishments	125	105	102	124	116	104	94	77	75
	Employees	5,834	6,422	5,317	6,275	5,212	3,919	4,686	4,522	4,611
	Payroll	417,362	497,165	458,589	556,693	396,625	273,575	351,229	346,765	383,333
Port and Harbor Operations	Establishments	20	46	18	14	15	15	24	31	30
	Employees	461	1,205	443	ds	399	421	806	1,130	1,144
	Payroll	38,745	80,780	37,122	ds	37,866	39,772	68,059	92,753	95,424
Marine Cargo Handling	Establishments	42	37	44	49	45	43	42	38	39
	Employees	2,526	2,016	2,834	3,106	3,418	2,955	2,324	2,133	4,143
	Payroll	108,491	93,896	174,054	212,786	175,092	156,891	116,330	91,315	223,474
Navigational Services to Shipping	Establishments	138	136	133	137	142	144	167	163	161
	Employees	3,396	2,545	2,533	2,816	2,862	2,780	3,079	3,064	3,008
	Payroll	208,306	162,094	169,795	206,318	218,379	203,905	223,344	225,309	239,022
Marinas	Establishments	45	44	41	39	36	38	38	34	37
	Employees	329	257	250	229	194	204	227	255	232
	Payroll	10,771	9,209	8,693	7,276	4,683	4,521	6,790	7,026	6,988

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Mississippi



2020 Economic Impacts of the Mississippi Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	6,459	346,873	136,974	177,125	6,431	342,393	135,868	175,443
Commercial Harvesters	1,432	82,765	25,901	37,278	1,432	82,765	25,901	37,278
Seafood Processors and Dealers	1,201	107,813	42,653	53,445	1,184	106,269	42,042	52,680
Importers	9	2,846	456	868	NA	NA	NA	NA
Seafood Wholesalers and Distributors	127	14,060	4,961	6,251	127	14,042	4,955	6,243
Retail	3,691	139,390	63,003	79,283	3,689	139,317	62,970	79,242

Total Landings Revenue and Landings Revenue of Key Species/Species Groups (thousands of dollars)[2]

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	30,163	49,142	34,600	38,394	64,713	28,994	31,073	44,431	58,661	51,988
Finfish	10,400	23,058	10,571	20,707	53,261	11,342	11,947	26,441	42,743	39,130
Shellfish and Other	19,763	26,084	24,029	17,686	11,452	17,652	19,126	17,990	15,918	12,858
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	321	724	416	931	1,209	913	793	806	692	899
Eastern oyster	928	1,596	1,544	1,742	969	1,088	344	19	NA	NA
Menhaden	9,871	22,394	10,230	20,234	52,962	10,973	11,086	25,992	41,992	38,527
Mullets	56	63	61	14	12	22	39	72	18	12
Oysters	928	1,596	1,544	1,742	969	1,088	344	19	NA	NA
Red drum	58	69	75	93	155	150	140	116	155	132
Shrimp	18,515	23,765	22,069	14,969	9,197	15,576	17,956	17,117	15,128	11,940

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	277,769	263,504	180,343	190,309	304,607	307,757	311,351	319,863	340,716	303,509
Finfish	267,107	249,291	170,745	184,213	294,413	294,381	300,080	309,426	332,753	296,667
Shellfish and Other	10,662	14,213	9,598	6,095	10,195	13,376	11,271	10,436	7,963	6,841
Key Species	-	-	-	-	-	-	-	-	-	-
Blue crab	370	782	359	559	798	780	626	519	573	645
Eastern oyster	247	425	336	333	182	245	60	3	NA	NA
Menhaden	266,756	248,846	170,495	183,950	294,189	294,189	299,630	309,058	332,372	296,364
Mullets	93	99	95	22	21	40	68	176	35	23
Oysters	247	425	336	333	182	245	60	3	NA	NA
Red drum	28	35	37	43	61	61	57	48	62	51
Shrimp	10,045	13,006	8,903	5,187	9,185	12,324	10,566	9,896	7,359	6,190

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Blue crab	0.87	0.93	1.16	1.66	1.51	1.17	1.27	1.55	1.21	1.39
Eastern oyster	3.75	3.75	4.59	5.23	5.32	4.44	5.78	7.46	NA	NA
Menhaden	0.04	0.09	0.06	0.11	0.18	0.04	0.04	0.08	0.13	0.13
Mullets	0.61	0.64	0.64	0.63	0.56	0.55	0.58	0.41	0.50	0.50
Oysters	3.75	3.75	4.59	5.23	5.32	4.44	5.78	7.46	NA	NA
Red drum	2.04	1.99	2.04	2.15	2.53	2.48	2.47	2.42	2.51	2.57
Shrimp	1.84	1.83	2.48	2.89	1.00	1.26	1.70	1.73	2.06	1.93

[1] Confidential data are not included in the economic impacts, landings revenue totals, or landings total for the Gulf of Mexico Region table and all state tables in this region, with the exception of West Florida.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Mississippi Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	89	7,656	2,333	4,054
Private Boat	529	52,919	16,770	31,878
Shore	699	56,622	19,932	36,651
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	1,317	117,198	39,034	72,584

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
103,375	5,018	49,708	48,648

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	268	331	339	328	357	345	300	423	NA	NA
Coastal	160	179	171	171	195	156	153	169	NA	NA
Non-Coastal	48	60	67	62	48	83	50	78	NA	NA
Out-of-State	60	91	101	94	114	106	97	176	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	4,503	4,493	4,342	4,312	4,594	4,718	4,848	4,555	4,227	4,298
For-Hire	11	11	11	17	42	25	16	19	20	9
Private Boat	1,600	1,643	1,599	1,486	1,568	1,733	1,606	1,527	1,382	1,450
Shore	2,892	2,838	2,731	2,808	2,984	2,960	3,225	3,009	2,825	2,839

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4,5]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	1,358	752	819	2,120	957	1,241	1,262	1,270	1,986	2,072
	R	1,842	1,673	630	704	1,690	3,292	4,239	4,503	4,776	2,800
Kingfish	H	395	546	976	437	1,066	1,713	798	698	226	545
	R	90	326	195	298	122	409	391	130	254	73
Red drum	H	153	210	320	201	203	329	246	384	502	240
	R	387	1,173	828	885	575	769	1,662	1,500	1,339	1,396
Red snapper	H	40	109	48	13	20	91	121	101	177	51
	R	< 1	10	134	127	472	333	750	246	639	188
Sand and silver seatrouts	H	2,599	2,145	1,589	1,797	2,391	3,242	4,924	2,540	1,612	2,055
	R	879	1,063	494	305	418	1,059	1,513	1,790	872	1,038
Sharks	H	56	19	109	12	11	6	12	4	3	2
	R	82	207	147	65	27	134	28	94	34	111
Sheepshead	H	557	235	207	198	185	107	815	98	100	203
	R	89	91	122	52	1,059	48	77	124	128	336
Southern flounder	H	421	401	448	255	172	225	96	126	181	95
	R	246	319	279	138	225	110	39	249	102	153
Spotted seatrout	H	1,563	1,395	1,985	1,183	1,838	3,410	1,390	1,383	1,132	681
	R	1,218	2,071	2,354	1,818	1,741	3,693	4,053	2,059	2,828	2,546
Striped mullet	H	1,291	660	1,883	869	2,664	1,254	615	1,631	283	823
	R	165	204	57	17	323	18	5	133	291	29

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] Data collected by the Texas Parks and Wildlife Department (TPWD) is reported in this table. The data collected by the TPWD differs from the data collected and reported in the MRIP. Data on the number of fish released are not reported by TPWD. [For more information: www.tpwd.state.tx.us.]
[3] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[4] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.
[5] Kingfish include southern kingfish and Gulf kingfish.

2019 Mississippi State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	59,130 (0.7%)	958,126 (0.7%)	37.7 (0.5%)	63.7 (0.6%)	115	4.39

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)[2]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	25	27	ds	21	12	20	19	22	NA
	Receipts	2,108	930	ds	1,932	1,539	2,879	2,852	3,844	NA
Seafood sales, retail	Firms	51	50	54	42	53	58	54	48	NA
	Receipts	3,505	3,957	3,855	3,129	4,053	4,836	4,397	3,602	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[2]

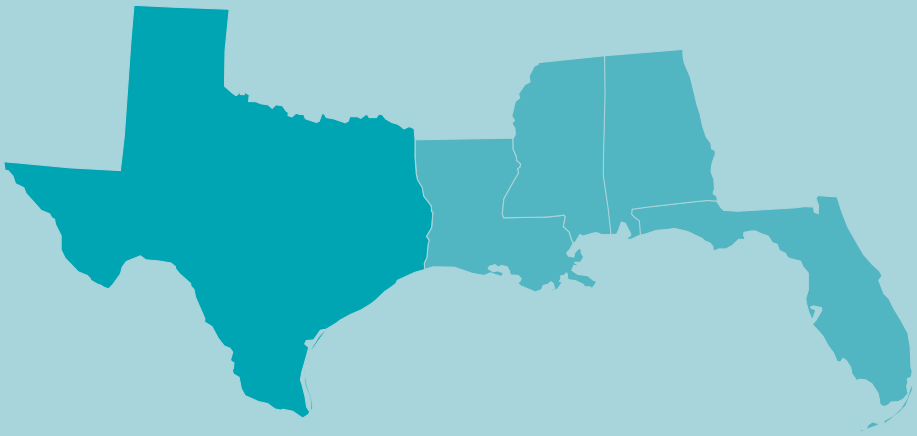
Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	18	18	19	19	18	18	19	18	17
	Employees	2,464	2,368	2,284	2,289	2,370	2,589	2,686	2,404	2,462
	Payroll	52,502	55,407	59,212	57,324	60,906	65,003	79,080	77,378	67,316
Seafood Sales, Wholesale	Establishments	18	17	14	14	14	15	13	13	14
	Employees	64	102	ds	ds	39	46	37	28	22
	Payroll	2,532	4,412	1,546	1,587	1,800	2,038	1,819	1,682	1,915
Seafood sales, retail	Establishments	17	13	13	10	8	9	12	10	9
	Employees	58	ds	ds	ds	96	228	128	91	104
	Payroll	838	1,902	ds	ds	2,672	3,092	3,029	2,805	3,097

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	20	18	19	18	18	16	14	15	15
	Employees	ds	ds	ds	ds	14,722	14,066	13,602	13,928	13,244
	Payroll	ds	ds	ds	ds	892,317	899,814	875,851	944,237	864,241
Deep Sea Freight Transportation	Establishments	1	2	1	1	1	1	NA	NA	NA
	Employees	ds	ds	ds	ds	ds	ds	NA	NA	NA
	Payroll	ds	ds	ds	ds	ds	ds	NA	NA	NA
Coastal and Great Lakes Freight Transportation	Establishments	4	4	6	4	4	4	3	3	NA
	Employees	127	ds	230	277	259	ds	1	10	NA
	Payroll	7,233	ds	17,080	16,365	17,353	ds	242	430	NA
Port and Harbor Operations	Establishments	1	3	2	1	1	1	3	3	NA
	Employees	ds	ds	ds	ds	ds	ds	ds	31	NA
	Payroll	ds	ds	ds	ds	ds	ds	ds	1,917	NA
Marine Cargo Handling	Establishments	7	2	4	5	5	6	6	6	5
	Employees	ds	ds	ds	ds	241	173	ds	458	460
	Payroll	ds	ds	ds	ds	10,390	7,562	ds	13,061	14,238
Navigational Services to Shipping	Establishments	6	7	6	7	7	7	9	9	8
	Employees	ds	ds	ds	ds	57	42	130	106	112
	Payroll	ds	ds	ds	ds	2,698	2,748	8,406	7,739	8,446
Marinas	Establishments	19	16	16	18	17	18	17	18	17
	Employees	189	204	154	193	197	199	201	223	233
	Payroll	5,137	5,361	3,972	4,960	5,047	5,517	5,215	5,503	5,700

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Tables | Texas



2020 Economic Impacts of the Texas Seafood Industry (thousands of dollars; number of jobs)[1,2]

Sector	With Imports				Without Imports			
	Jobs	Sales	Income	Value Added	Jobs	Sales	Income	Value Added
Total Impacts	35,517	4,900,200	1,201,802	1,897,752	15,296	1,078,693	398,152	555,106
Commercial Harvesters	4,260	407,824	125,040	195,515	4,260	407,824	125,040	195,515
Seafood Processors and Dealers	3,083	303,630	114,223	150,435	1,430	140,856	52,989	69,788
Importers	9,038	2,992,621	479,625	912,282	NA	NA	NA	NA
Seafood Wholesalers and Distributors	1,990	316,349	105,553	146,171	412	65,499	21,854	30,264
Retail	17,146	879,776	377,361	493,349	9,194	464,514	198,268	259,538

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	225,141	205,760	258,124	263,614	180,421	205,129	230,633	211,848	209,279	195,628
Finfish	8,261	9,955	12,787	13,572	15,947	17,411	16,147	16,023	18,954	16,845
Shellfish and Other	216,881	195,805	245,337	250,043	164,474	187,718	214,486	195,824	190,325	178,783
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	621	743	819	690	725	856	767	1,276	1,320	1,343
Black drum	1,443	1,492	1,706	1,981	2,074	2,341	2,458	1,840	2,288	1,471
Blue crab	2,838	2,878	2,331	3,057	5,539	6,789	5,423	4,886	5,529	5,022
Flounders	204	175	73	99	187	239	164	73	107	112
Groupers	560	760	1,149	1,154	1,481	1,593	1,154	755	1,302	559
Oysters	12,796	21,306	23,471	19,222	8,254	17,129	20,404	23,999	33,496	30,626
Red snapper	3,274	4,448	7,329	7,617	9,387	10,573	9,881	10,838	12,548	12,176
Shrimp	200,992	171,379	219,396	227,588	150,466	163,564	188,477	166,771	151,041	142,927
Tunas	2	5	7	27	3	3	1	1	1	NA
Vermilion snapper	1,274	1,434	659	604	920	584	443	333	323	276

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

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	96,920	90,159	83,583	78,027	84,228	79,366	90,673	84,385	74,918	72,517
Finfish	4,106	4,101	4,691	4,795	5,370	5,683	5,201	4,643	5,379	4,565
Shellfish and Other	92,814	86,058	78,893	73,232	78,859	73,683	85,472	79,741	69,539	67,953
Key Species	-	-	-	-	-	-	-	-	-	-
Atlantic croaker	79	89	96	79	88	101	88	131	129	123
Black drum	1,789	1,624	1,698	1,747	1,879	2,055	1,926	1,469	1,795	1,070
Blue crab	2,886	2,854	1,902	2,238	4,336	5,323	4,132	3,431	3,913	3,406
Flounders	75	60	21	25	51	64	40	18	26	25
Groupers	194	220	300	280	354	372	271	169	267	127
Oysters	4,342	5,818	6,126	4,129	1,587	3,127	3,504	3,859	5,288	5,331
Red snapper	952	1,123	1,807	1,797	2,152	2,390	2,213	2,353	2,603	2,755
Shrimp	85,485	77,304	70,818	66,815	72,871	65,171	77,795	72,415	60,281	59,171
Tunas	1	3	3	9	1	2	1	1	1	NA
Vermilion snapper	466	511	234	203	307	192	149	107	104	92

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

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	7.84	8.31	8.55	8.68	8.20	8.51	8.73	9.78	10.23	10.88
Black drum	0.81	0.92	1.00	1.13	1.10	1.14	1.28	1.25	1.27	1.38
Blue crab	0.98	1.01	1.23	1.37	1.28	1.28	1.31	1.42	1.41	1.47
Flounders	2.74	2.94	3.55	3.91	3.65	3.72	4.10	3.98	4.15	4.59
Groupers	2.89	3.45	3.84	4.12	4.18	4.28	4.25	4.47	4.87	4.42
Oysters	2.95	3.66	3.83	4.66	5.20	5.48	5.82	6.22	6.33	5.74
Red snapper	3.44	3.96	4.06	4.24	4.36	4.42	4.47	4.61	4.82	4.42
Shrimp	2.35	2.22	3.10	3.41	2.06	2.51	2.42	2.30	2.51	2.42
Tunas	1.82	1.83	2.10	2.94	2.43	1.41	1.53	2.11	2.43	NA
Vermilion snapper	2.73	2.80	2.81	2.98	3.00	3.04	2.97	3.12	3.10	2.99

[1] Confidential data are not included in the economic impacts, landings revenue totals, or landings total for the Gulf of Mexico Region table and all state tables in this region, with the exception of West Florida.
[2] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.

2020 Economic Impacts of Texas Recreational Fishing (thousands of dollars; number of jobs)[1]

Fishing Mode	Jobs	Sales	Income	Value Added
For-Hire	1,360	160,682	54,223	96,762
Private Boat	1,897	273,700	84,935	166,093
Shore	NA	NA	NA	NA
Total Durable Expenditures	NA	NA	NA	NA
Total State Economic Impacts	3,257	434,382	139,159	262,855

2020 Angler Trip Expenditures (thousands of dollars)

Total Trip	For-Hire	Private Boat	Shore
265,629	95,068	170,561	NA

Recreational Anglers by Residential Area (thousands of anglers)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Anglers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Recreational Fishing Effort by Mode (thousands of angler trips)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Trips	974	1,029	977	956	916	1,071	1,024	1,077	1,233	1,201
For-Hire	161	221	143	139	144	157	189	299	378	237
Private Boat	813	808	834	818	772	913	836	778	855	963
Shore	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Harvest (H) and Release (R) of Key Species/Species Groups (thousands of fish)[2,3,4,5]

Species	Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic croaker	H	156	160	146	118	213	126	67	64	56	110
Black drum	H	124	256	147	138	131	140	167	129	189	165
King mackerel	H	9	9	10	13	9	12	15	24	18	11
Red drum	H	338	324	263	255	244	286	300	274	330	325
Red snapper	H	36	34	49	40	50	29	46	54	80	45
Sand seatrout	H	225	208	105	168	95	154	79	52	118	100
Sheepshead	H	48	146	82	49	48	100	61	83	129	50
Southern flounder	H	102	116	61	84	85	111	70	33	77	75
Spanish mackerel	H	8	5	2	2	2	5	6	6	2	1
Spotted seatrout	H	1,098	836	784	619	837	1,027	963	737	1,067	861

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] 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 2018 data provided by the Texas Parks and Wildlife Department (TPWD). [For more information: www.tpwd.state.tx.us.]
[3] Data collected by the Texas Parks and Wildlife Department (TPWD) is reported in this table. Data collected by TPWD differs from the data collected and reported in MRIP. Data on the number of fish released are not reported by TPWD. [For more information: www.tpwd.state.tx.us.]
[4] Key species/species groups were chosen to represent those most frequently caught or highly prized by recreational anglers, or important for management. It is not a comprehensive list nor ranked by the total number of fish caught/released.
[5] In this table, '<1' = 0-999 fish, and '1' = 1,000-1,499 fish.

2019 Texas State Economy (percentage of national total)[1,2]

Non-Employer Firms (number in millions)	Establishments (number in millions)	Employees (number in millions)	Annual Payroll (billions of dollars)	Employee Compensation (billions of dollars)	Gross State Product (billions of dollars)	Commercial Fishing Location Quotient
NA	609,476 (7.7%)	11,104,054 (8.3%)	611 (8.2%)	952 (8.3%)	1,864	0.27

Seafood Sales and Processing — Non-Employer Firms (thousands of dollars)

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Firms	119	123	123	128	178	165	131	125	NA
	Receipts	5,734	6,675	7,484	6,706	11,051	10,057	8,187	7,504	NA
Seafood sales, retail	Firms	171	194	173	199	178	167	174	179	NA
	Receipts	13,433	14,891	15,094	15,160	15,660	13,072	13,935	14,582	NA

Seafood Sales and Processing — Employer Establishments (thousands of dollars)[2]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seafood product preparation and packaging	Establishments	24	22	30	32	29	34	35	31	30
	Employees	1,273	1,248	1,026	1,062	1,006	975	1,023	954	985
	Payroll	26,425	27,737	27,638	28,643	29,729	27,765	33,479	35,529	35,656
Seafood Sales, Wholesale	Establishments	82	71	75	89	90	86	81	95	89
	Employees	723	603	729	816	874	928	971	795	873
	Payroll	26,356	25,309	30,370	35,553	37,315	37,519	34,972	28,744	31,916
Seafood sales, retail	Establishments	50	60	60	59	62	57	52	50	49
	Employees	ds	ds	331	395	415	439	279	247	267
	Payroll	4,090	6,102	6,891	8,201	9,319	9,097	5,750	5,805	6,424

Transportation Support and Marine Operations — Employer Establishments (thousands of dollars)[3]

Sector	Statistic	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ship and Boat Building	Establishments	91	89	87	88	84	81	82	83	78
	Employees	2,773	5,601	5,686	5,178	4,956	5,098	4,936	4,903	5,274
	Payroll	153,077	310,230	297,248	306,571	283,838	270,717	261,783	313,380	305,193
Deep Sea Freight Transportation	Establishments	39	40	33	33	35	36	32	33	38
	Employees	860	742	ds	790	639	607	615	713	776
	Payroll	71,515	65,818	44,902	55,106	47,119	47,952	59,864	77,406	80,651
Deep Sea Passenger Transportation	Establishments	1	NA	2	2	2	2	NA	NA	3
	Employees	ds	NA	ds	ds	ds	ds	NA	NA	8
	Payroll	ds	NA	ds	ds	ds	ds	NA	NA	518
Coastal and Great Lakes Freight Transportation	Establishments	48	39	42	48	48	49	45	46	54
	Employees	1,764	1,814	2,253	2,227	2,058	2,115	1,574	1,803	2,023
	Payroll	177,549	174,686	207,831	215,950	208,286	199,415	129,590	204,370	191,427
Port and Harbor Operations	Establishments	26	37	27	25	25	26	29	31	31
	Employees	439	1,381	630	387	395	572	688	780	1,029
	Payroll	18,842	55,470	25,229	13,544	16,436	17,603	29,801	34,558	37,480
Marine Cargo Handling	Establishments	55	42	48	53	56	57	56	53	60
	Employees	5,259	4,373	6,390	7,451	8,179	6,687	5,030	6,608	7,252
	Payroll	153,360	130,817	272,286	327,690	324,552	280,303	210,606	219,894	274,192
Navigational Services to Shipping	Establishments	91	91	89	93	91	80	81	85	89
	Employees	1,448	1,676	1,485	1,588	1,415	1,430	1,187	1,573	1,615
	Payroll	113,444	124,500	130,572	139,259	144,090	135,341	110,529	131,360	138,007
Marinas	Establishments	144	132	124	128	138	137	134	133	144
	Employees	1,233	1,169	1,258	1,222	1,209	1,226	1,289	2,022	1,389
	Payroll	34,928	34,711	36,461	36,776	37,054	39,658	38,913	74,614	47,870

[1] NA = Indicates Not Applicable or these data are confidential and therefore not disclosable.
[2] The U.S. Commercial Fishing Location Quotient (CFLQ) is 1. A CFLQ greater than 1 indicates that more commercial fishing occurs in this state than the national average. A CFLQ less than 1 indicates that less commercial fishing occurs in this state than the national average.
[3] ds = Data are suppressed.

Data Sources



Seafood signs in Solomon's Island, Maryland.
Photo: NOAA Fisheries/Jacqui Fenner

MANAGEMENT CONTEXT

- Terry, J., J. Walden, and J. Kirkley. 2008. National Assessment of Excess Harvesting Capacity in Federally Managed Commercial Fisheries. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-F/SPO-93, 368 p. https://spo.nmfs.noaa.gov/content/tech-memo/national-assessment-excess-harvesting-capacity-federally-managed-commercial
- "Status of U.S. Fisheries." Office of Sustainable Fisheries, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). https://www.fisheries.noaa.gov/national/population-assessments/status-us-fisheries
- "Endangered Species Act (ESA)." Office of Protected Resources, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). https://www.fisheries.noaa.gov/national/endangered-species-conservation/endangered-species-act
- "Certified Fisheries." Marine Stewardship Council. www.msc.org/
- "Catch Shares." Office of Sustainable Fisheries, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares

Fishery Management Councils and 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/
- New England Fishery Management Council. www.nefmc.org/
- North Pacific Fishery Management Council. www.npfmc.org/
- 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 North Pacific, Pacific, Western Pacific, New England, Mid-Atlantic, South Atlantic, and Gulf of Mexico Regions

- Commercial Landings Database. Obtained March 15, 2022. Office of Science and Technology, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). https://www.fisheries.noaa.gov/national/sustainable-fisheries/commercial-fisheries-landings

Economic Impacts of the U.S. Commercial Seafood Industry

- A User's Guide to the National and Coastal State I/O Model. http://www.st.nmfs.noaa.gov/documents/commercial_seafood_impacts_2007-2009.pdf

Additional information

- "NOAA Fisheries Economics and Social Sciences Program." Office of Science and Technology, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). https://www.fisheries.noaa.gov/topic/socioeconomics
- "Data Caveats." Office of Science and Technology, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). https://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/data-caveats/index

RECREATIONAL FISHERIES

Consumer Price Index (CPI) Inflation Calculator

- CPI Inflation Calculator. Obtained August 3, 2022. Bureau of Labor Statistics. https://data.bls.gov/cgi-bin/cpicalc.pl

Data for North Pacific, Pacific, Western Pacific, New England, Mid-Atlantic, South Atlantic, and Gulf of Mexico Regions

- Office of Science and Technology, Fisheries Statistics Division, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA Fisheries). Obtained August 3, 2022. https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-and-statistics-queries#run-a-data-query

Recreational Fishing Expenditures and Impacts

- Lovell, Sabrina, James Hilger, Emily Rollins, Noelle A. Olsen, and Scott Steinback. 2020. The Economic Contribution of Marine Angler Expenditures on Fishing Trips in the United States, 2017. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-F/SPO-201, 80 p. https://spo.nmfs.noaa.gov/sites/default/files/TM201.pdf
- Lovell, J. Sabrina, James Hilger, Scott Steinback, and Clifford Hutt. 2016. The Economic Contribution of Marine Angler Expenditures on Durable Goods in the United States, 2014. U.S. Dept. of Commerce. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-165, 72 p. https://spo.nmfs.noaa.gov/content/tech-memo/economic-contribution-marine-angler-expenditures-durable-goods-united-states-2014
- Lovell, Sabrina, Scott Steinback, and James Hilger. 2013. The Economic Contribution of Marine Angler Expenditures in the United States, 2011. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-134, 188 p. https://spo.nmfs.noaa.gov/content/tech-memo/economic-contribution-marine-angler-expenditures-united-states-2011

MARINE ECONOMY

- "County Business Patterns Data Series." Obtained March 14, 2022. U.S. Census Bureau. https://www.census.gov/programs-surveys/cbp.html
- "Gross Domestic Product by State." Obtained March 14, 2022. Bureau of Economic Analysis. https://www.bea.gov/data/gdp/gdp-state
- "Location Quotient Calculator." Obtained March 14, 2022. Bureau of Labor Statistics. https://data.bls.gov/cew/doc/info/location_quotients.htm
- "Nonemployer Statistics." Obtained June 21, 2022. U.S. Census Bureau. https://www.census.gov/programs-surveys/nonemployer-statistics.html

Publications



Birds on pilings.
Photo: NOAA Fisheries/Jacqui Fenner

Selected publications by NOAA Fisheries Economics and Social Sciences Program staff are grouped by geographic region of focus and then organized under the following categories:

- Climate Change Research
- Coastal and Marine Recreation Research
- Commercial Fisheries Economics Research
- Spatial Analysis and Marine Protected Areas Research
- Ocean Governance, Policy and Management Research
- Marine Protected Areas Research
- Other Marine Environmental Research
- Ecosystem-Based Management Research
- Recreational Fisheries Economics Research
- Habitat Economics Research
- Seafood Marketing and Trade Research
- Sociocultural Fisheries Research
- U.S. Territories and International Fisheries Research
- Protected Resources Economics Research

UNITED STATES

Climate Change Research

Foster, T., N. Brozovic, and *C. Speir*. 2017. The buffer value of groundwater when well yield is limited. J. Hydrol., 547:638-649. https://doi.org/10.1016/j.jhydrol.2017.02.034.

Busch, D., R. Griffis, J. Link, K. Abrams, J. Baker, R. Brainard, M. Ford, J. Hare, A. Himes-Cornell, A. Hollowed, N. Mantua, S. McClatchie, M. McClure, M. Nelson, K. Osgood, J. Peterson, M. Rust, V. Saba, M. Sigler, S. Sykora-Bodie, C. Toole, E. Thunberg, R. Waples, and *R. Merrick*. 2016. Climate science strategy of the US National Marine Fisheries Service. Mar. Policy, 74:58-67. https://doi.org/10.1016/j.marpol.2016.09.001.

Commercial Fisheries Economics Research

Holland, D., D. Lambert, E. Schnettler, R. Methot, M. Karp, K. Brewster-Geisz, J. Brodziak, S. Crosson, N. Farmer, K. Frens, *J. Gasper, J. Hastie, P. Lynch, S. Matson*, and *E. Thunberg*. 2020. National Standard 1 technical guidance for designing, evaluating, and Iimplementing carry-over and phase-in provisions. NOAA Tech. Memo. NMFS-F/SPO-203, 41 p.

Pfeiffer, L. 2020. How storms affect fishers' decisions about going to sea. ICES J. Mar. Sci., 77(7-8):2753-2762. https://doi.org/10.1093/icesjms/fsaa145.

Lipton, D., M. Parker, J. DuBerg, and *M. Rubino*. 2019. An approach to determining economic impacts of U.S. aquaculture. NOAA Tech. Memo. NMFS-F/SPO-197, 26 p.

Walden, J., and J. Atwood. 2019. Measuring technical efficiency and capacity with data envelopment analysis: A foundational approach using the R programming language. Montana State University, Department of Agricultural Economics and Economics. In MSU Staff Papers. 298454.

Dalton, M., and *B. Fissel*. 2018. A unified framework for calculating aggregate commodity prices from a census dataset. J. Econ. Soc. Meas., 43:85-104. https://doi.org/10.3233/JEM-180453.

Holland, D., C. Speir, J. Agar, S. Crosson, G. DePiper, S. Kasperski, A. Kitts, and *L. Perruso*. 2017. Impact of catch shares on diversification of fishers' income and risk. Proc. Natl. Acad. Sci., 114(35):9302-9307. https://doi.org/10.1073/pnas.1702382114.

Brinson, A., and *E. Thunberg*. 2016. Performance of federally managed catch share fisheries in the United States. Fish. Res., 179:213-223. https://doi.org/10.1016/j.fishres.2016.03.008.

Knapp, G., and *M. Rubino*. 2016. The political economics of marine aquaculture in the United States. Rev. Fish. Sci. Aquac., 24(3):213-229. https://doi.org/10.1080/23308249.2015.1121202.

Pfeiffer, L., and T. Gratz. 2016. The effect of rights-based fisheries management on risk taking and fishing safety. Proc. Natl. Acad. Sci., 113(10):2615-2620. https://doi.org/10.1073/pnas.1509456113.

Squires, D. 2016. Firm behavior under quantity controls: The theory of virtual quantities. J. Environ. Econ. Manage., 79:70-86. https://doi.org/10.1016/j.jeem.2015.04.005.

Anderson, J., C. Anderson, J. Chu, J. Meredith, F. Asche, G. Sylvia, M. Smith, D. Anggraeni, R. Arthur, A. Guttormsen, J. McCluney, T. Ward, W. Akpalu, H. Eggert, J. Flores, M. Freeman, *D. Holland*, G. Knapp, M. Kobayashi, S. Larkin, K. MacLauchlin, K. Schnier, M. Soboil, S. Tveteras, H. Uchida, and D. Valderrama. 2015. The fishery performance indicators: A management tool for triple bottom line outcomes. PLOS One, 10(5):1-20. https://doi.org/10.1371/journal.pone.0122809.

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. Mar. Policy, 57:103-110. https://doi.org/10.1016/j.marpol.2015.03.027.

Kasperski, S. 2015. Optimal multi-species harvesting in ecologically and economically interdependent fisheries. Environ. Resource Econ., 61(4):517-557. https://doi.org/10.1007/s10640-014-9805-9.

Kroetz, K., J. Sanchirico, and *D. Lew*. 2015. Efficiency costs of social objectives in tradable permit programs. J. Assoc. Environ. Resour. Economists, 2(3):339-366. https://doi.org/10.1086/681646.

Lambert, D., E. Thunberg, R. Felthoven, J. Lincoln, and *W. Patrick*. 2015. Guidance on fishing vessel risk assessments and accounting for safety at sea in fishery management design. NOAA Tech. Memo. NMFS-OSF-2, 56 p. https://doi.org/10.7289/V58P5XJQ.

Squires, D., and N. Vestergaard. 2015. Productivity growth, catchability, stock assessments, and optimum renewable resource use. Mar. Policy, 62:309-317. https://doi.org/10.1016/j.marpol.2015.07.006.

Thunberg, E., J. Walden, J. Agar, R. Felthoven, A. Harley, S. Kasperski, J. Lee, T. Lee, A. Mamula, J. Stephen, and *A. Strelcheck*. 2015. Measuring changes in multi-factor productivity in U.S. catch share fisheries. Mar. Policy, 62:294-301. https://doi.org/10.1016/j.marpol.2015.05.008.

Walden, J., B. Fissel, D. Squires, and N. Vestergaard. 2015. Productivity change in commercial fisheries: An introduction to the special issue. Mar. Policy, 62:289-293. https://doi.org/10.1016/j.marpol.2015.06.019.

Ocean Governance, Policy and Management Research

Dalton, M., D. Holland, D. Squires, J. Terry, and *D. Tomberlin*. 2018. An economic perspective on National Standard 1. NOAA Tech. Memo. NMFS-F/SPO-180, 70 p.

Szymkowiak, M., and *A. Himes-Cornell*. 2017. Do active participation measures help fishermen retain fishing privileges? Coast. Manage., 45(1):56-72. https://doi.org/10.1080/08920753.2017.1237243.

Breslow, S. J., M. Allen, D. Holstein, B. Sojka, R. Barnea, X. Basurto, C. Carothers, S. Charnley, S. Coulthard, N. Dolšak, J. Donatuto, C. García-Quijano, C. Hicks, A. Levine, M. Mascia, *K. Norman, M. Poe*, T. Satterfield, K. St. Martin, and *P. Levin*. 2017. Evaluating indicators of human well-being for ecosystem-based management. Ecosyst. Health Sustainability, 3(12):1-18. https://doi.org/10.1080/20964129.2017.1411767.

Charnley, S., C. Carothers, T. Satterfield, A. Levine, *M. Poe*, *K. Norman*, J. Donatuto, *S. J. Breslow*, M. Mascia, *P. Levin*, X. Basurto, C. Hicks, C. García-Quijano, and K. St. Martin. 2017. Evaluating the best available social science for natural resource management decision-making. Environ. Sci. Policy, 73:80-88. https://doi.org/10.1016/j.envsci.2017.04.002.

Squires, D., and N. Vestergaard. 2016. Putting economics into maximum economic yield. Mar. Resour. Econ., 31(1):101-116. https://doi.org/10.1086/683670.

Bibb, S., S. Bloom, A. Brinson, M. Chandler, G. Davenport, K. Denit, G. Dinardo, J. Gange, S. Giordano, A. Gutierrez, J. Hoey, S. Ignell, R. Kosaka, C. Park, T. Rankin, H. Sagar, and *R. Silva*. 2015. Cooperative research and cooperative management: A review with recommendations. NOAA Tech. Memo. NMFS-F/SPO-156, 78 p.

Ecosystem-Based Management Research

Levin, P., T. Essington, *K. Marshall*, L. Koehn, L. Anderson, A. Bundy, C. Carothers, F. Coleman, L. Gerber, J. Grabowski, E. Houde, O. Jensen, C. Mollmann, K. Rose, J. Sanchirico, and A. Smith. 2018. Building effective fishery ecosystem plans. Mar. Policy, 92:48-57. https://doi.org/10.1016/j.marpol.2018.01.019.

Holsman, K., J. Samhouri, G. Cook, *E. Hazen, E. Olsen, M. Dillard, S. Kasperski, S. Gaichas*, C. Kelble, *M. Fogarty*, and *K. Andrews*. 2017. An ecosystem-based approach to marine risk assessment. Ecosyst. Health Sustainability, 3(1):e01256. https://doi.org/10.1002/ehs2.1256.

Slater, W., *G. DePiper, J. Gove, C. Harvey, E. Hazen, S. Lucey, M. Karnauskas, S. Regan, E. Siddon, E. Yasumiishi, S. Zador, M. Brady, M. Ford, R. Griffis, R. Shuford, H. Townsend, T. O'Brien, J. Peterson, K. Osgood*, and *J. Link*. 2017. Challenges, opportunities, and future directions to advance NOAA Fisheries ecosystem status reports (ESRs): Report of the National ESR Workshop. NOAA Tech. Memo. NMFS-F/SPO-174, 66 p.

Recreational Fisheries Economics Research

Lovell, S., J. Hilger, E. Rollins, N. Olsen, and *S. Steinback*. 2020. The economic contribution of marine angler expenditures on fishing trips in the United States, 2017. NOAA Tech. Memo. NMFS-F/SPO-201, 80 p.

Kosaka, R., and *S. Steinback*. 2018. 2012 National Ocean Recreation Expenditure Survey, National Report. NOAA Tech. Memo. NMFS-F/SPO-185, 102 p.

Lovell, S., J. Hilger, S. Steinback, and *C. Hutt*. 2016. The economic contribution of marine angler expenditures on durable goods in the United States, 2014. NOAA Tech. Memo. NMFS-F/SPO-165, 72 p.

Hutt, C., S. Lovell, and *S. Steinback*. 2015. The economics of independent marine recreational fishing bait and tackle retail stores in the United States, 2013. NOAA Tech. Memo. NMFS-F/SPO-151, 110 p.

Hutt, C., and *G. Silva*. 2015. The economics of Atlantic highly migratory species for-hire fishing trips, July-November 2013. NOAA Tech. Memo. NMFS-OSF-4, 34 p. https://doi.org/10.7289/V5154F2X.

Habitat Economics Research

Samonte, G., P. Edwards, *J. Royster*, V. Ramenzoni, and S. Morlock. 2017. Socioeconomic benefits of habitat restoration. NOAA Tech. Memo. NMFS-OHC-1, 66 p.

Speir, C., J. Han, and N. Brozovic. 2016. Spatial dynamic optimization of groundwater use with ecological standards for instream flow. Water Econ. Policy, 2(3):1650013. https://doi.org/10.1142/s2382624x16500132.

Speir, C., S. Pittman, and *D. Tomberlin*. 2015. Uncertainty, irreversibility and the optimal timing of large-scale investments in protected species habitat restoration. Front. Mar. Sci., 2:101. https://doi.org/10.3389/fmars.2015.00101.

Seafood Marketing and Trade Research

Hilger, J., E. Hallstein, A. Stevens, and S. Villas-Boas. 2019. Measuring willingness to pay for environmental attributes in seafood. Environ. Resource Econ., 73(1):307–332. https://doi.org/10.1007/s10640-018-0264-6.

Helvey, M., C. Pomeroy, N. Pradhan, *D. Squires*, and *S. Stohs*. 2017. Can the United States have its fish and eat it too? Mar. Policy, 75:62-67. https://doi.org/10.1016/j.marpol.2016.10.013.

Jenny Sun, C.-H. J., F.-S. Chiang, M. Owens, and *D. Squires.* 2017. Will American consumers pay more for eco-friendly labeled canned tuna? Estimating US consumer demand for canned tuna varieties using scanner data. Mar. Policy, 79:62-69. https://doi.org/10.1016/j.marpol.2017.02.006.

Sociocultural Fisheries Research

Olson, J., and *P. Pinto da Silva*. 2018. Taking stock of fisheries science through oral history: Voices from NOAA's fishery science centers. ICES J. Mar. Sci., 76(2):370-383. https://doi.org/10.1093/icesjms/fsy187.

Colburn, L., M. Jepson, A. Himes-Cornell, S. Kasperski, K. Norman, C. Weng, and *P. Clay*. 2017. Community participation in U.S. catch share programs. NOAA Tech. Memo. NMFS-F/SPO-179, 136 p.

Cutler, M., *T. Murphy*, and M. Vasta. 2017. An overview of the survey on the socioeconomic aspects of commercial fishing vessel owners in the Northeast and Mid-Atlantic. NOAA Tech. Memo. NMFS-NE-240, 29 p. https://doi.org/10.13140/RG.2.2.28727.83360.

Love, D., *P. Pinto da Silva*, *J. Olson*, J. Fry, and *P. Clay*. 2017. Fisheries, food, and health in the USA: The importance of aligning fisheries and health policies. Agric. Food Security, 6(1). https://doi.org/10.1186/s40066-017-0093-9.

Pollnac, R., *T. Seara, L. Colburn*, and *M. Jepson*. 2015. Taxonomy of USA east coast fishing communities in terms of social vulnerability and resilience. Environ. Impact Assess. Rev., 55:136-143. 3. https://doi.org/10.1016/j.eiar.2015.08.006.

Protected Resources Economics Research

Lew, D., and *K. Wallmo*. 2017. Temporal stability of stated preferences for endangered species protection from choice experiments. Ecolog. Econ., 131:87-97. https://doi.org/10.1016/j.ecolecon.2016.08.009.

Pienaar, E., *D. Lew*, and *K. Wallmo*. 2017. Intention to pay for the protection of threatened and endangered marine species: Implications for conservation program design. Ocean Coast. Manage., 138:170-180. https://doi.org/10.1016/j.ocecoaman.2017.01.019.

Bisack, K., and G. Magnusson. 2016. Measuring management success for protected species: Looking beyond biological outcomes. Front. Mar. Sci., 3(61):1-7. https://doi.org/10.3389/fmars.2016.00061.

*Wallmo, K., K. Bisack, D. Le*w, and *D. Squires*. 2016. Editorial: The economics of protected marine species: Concepts in research and management. Front. Mar. Sci., 3:183. https://doi.org/10.3389/fmars.2016.00183.

Wallmo, K., and *D. Lew*. 2016. A comparison of regional and national values for recovering threatened and endangered marine species in the United States. J. Environ. Manage., 179:38-46. https://doi.org/10.1016/j.jenvman.2016.04.053.

Bisack, K., *D. Squires, D. Lipton, J. Hilger, D. Holland, D. Johnson, M.-Y. Lee, R. Lent, D. Lew,* G. Magnusson, *M. Pan, L. Queirolo, S. Stohs, C. Speir*, and *K. Wallmo*. 2015. Proceedings of the 2014 NOAA economics of protected resources workshop, September 9-11, 2014, La Jolla, California. NOAA Tech. Memo. NMFS NE-233, 179 p. https://doi.org/10.7289/V5QR4V3D.

Johnston, R., *D. Jarvis*, *K. Wallmo*, and *D. Lew*. 2015. Multiscale spatial pattern in nonuse willingness to pay: Applications to threatened and endangered marine species. Land Econ., 91(4):739-761. https://doi.org/10.3368/le.91.4.739.

Pienaar, E., *D. Lew*, and *K. Wallmo*. 2015. The importance of survey content: Testing for the context dependency of the New Ecological Paradigm Scale. Soc. Sci. Res., 51:338-349. https://doi.org/10.1016/j.ssresearch.2014.09.005.

NORTH PACIFIC

Climate Change Research

Seung, C., and *J. Ianelli*. 2019. Evaluating alternative policies for managing an Alaska pollock fishery with climate change. Ocean Coast. Manage., 178:104837. https://doi.org/10.1016/j.ocecoaman.2019.104837.

Haynie, A., and H. Huntington. 2016. Strong connections, loose coupling: The influence of the Bering Sea ecosystem on commercial fisheries and subsistence harvests in Alaska. Ecol. Soc., 21(4):6. https://doi.org/10.5751/ES-08729-210406.

Seung, C., and *J. Ianelli*. 2016. Regional economic impacts of climate change: A computable general equilibrium analysis for an Alaska fishery. Nat. Resour. Model., 29(2):289-333. https://doi.org/10.1111/nrm.12092.

Commercial Fisheries Economics Research

Seung, C. 2020. Key sector analysis for a subnational region with leakages. Ann. Reg. Sci., 65(3):619-644. https://doi.org/10.1007/s00168-020-00997-1.

Seung, C., E. Waters, and M. Taylor. 2020. Developing a Multi-Regional Social Accounting Matrix (MRSAM) for Southwest Alaska Fisheries. NOAA Tech. Memo. NMFS-AFSC-399, 33 p. https://doi.org/10.25923/3yz5-y179.

Addicott, E., K. Kroetz, M. Reimer, J. Sanchirico, *D. Lew*, and J. Huetteman. 2019. Identifying the potential for cross-fishery spillovers: a network analysis of Alaskan permitting patterns. Can. J. Fish. Aquat. Sci., 76(1):56-68. https://doi.org/10.1139/cjfas-2017-0550.

Petesch, T., and *L. Pfeiffer*. 2019. Impacts of rationalization on exposure to high winds in Alaska's crab fisheries. J. Agromed., 24(4):364-373. https://doi.org/10.1080/1059924X.2019.1646683.

Fissel, B. 2018. Economic status of the groundfish fisheries off Alaska data visualizations. Pac. States E-J. Sci. Visualization. https://doi.org/10.28966/PSESV.2018.002.

Hsueh, L., and *S. Kasperski*. 2018. The impact of catch shares on multiregional fishery participation and effort: The case of West Coast harvesters in the Alaska fisheries. Mar. Policy, 95:123-132. https://doi.org/10.1016/j.marpol.2018.02.008.

Seung, C., and *S. Miller*. 2018. Regional economic analysis for North Pacific fisheries. NOAA Tech. Memo. NMFS-AFSC-380, 86 p.

Ward, E., S. Anderson, *A. Shelton*, R. Brenner, M. Adkison, A. Beaudreau, *J. Watson*, J. Shriver, *A. Haynie*, and B. Williams. 2018. Effects of increased specialization on revenue of Alaskan salmon fishers over four decades. J. Appl. Ecol., 55(3):1082-1091. https://doi.org/10.1111/1365-2664.13058.

Watson, J., and *A. Haynie*. 2018. Paths to resilience: The walleye pollock fleet uses multiple fishing strategies to buffer against environmental change in the Bering Sea. Can. J. Fish. Aquat. Sci., 75(11):1977-1989. https://doi.org/10.1139/cjfas-2017-0315.

Anderson, S., *E. Ward, A. Shelton*, M. Adkison, A. Beaudreau, R. Brenner, *A. Haynie*, J. Shriver, *J. Watson*, and B. Williams. 2017. Benefits and risks of diversification for individual fishers. Proc. Natl. Acad. Sci., 114(40):10797-10802. https://doi.org/10.1073/pnas.1702506114.

Ono, K., *A. Haynie, A. B. Hollowed, J. Ianelli, C. McGilliard*, and A. Punt. 2017. Management strategy analysis for multispecies fisheries, including technical interactions and human behavior in modelling management decisions and fishing. Can. J. Fish. Aquat. Sci., 75(8):1185-1202. https://doi.org/10.1139/cjfas-2017-0135.

Reimer, M., J. Abbott, and A. Haynie. 2017. Empirical models of fisheries production: Conflating technology with incentives? Mar. Resour. Econ., 32(2):169-190. https://doi.org/10.1086/690677.

Seung, C. 2017. A multi-regional economic impact analysis of Alaska salmon fishery failures. Ecolog. Econ., 138:22-30. https://doi.org/10.1016/j.ecolecon.2017.03.020.

Kasperski, S. 2016. Optimal multispecies harvesting in the presence of a nuisance species. Mar. Policy, 64:55-63. https://doi.org/10.1016/j.marpol.2015.11.009.

Seung, C. 2016. Identifying channels of economic impacts: An inter-regional structural path analysis for Alaska fisheries. Mar. Policy, 66:39-49. https://doi.org/10.1016/j.marpol.2016.01.015.

Seung, C., *B. Muse*, and E. Waters. 2016. Net economic impacts of recent Alaska salmon fishery failures and federal relief. North Am. J. Fish. Manage., 36(2):351-362. https://doi.org/10.1080/02755947.2015.1120831.

Szymkowiak, M., and *R. Felthoven*. 2016. Understanding the determinants of hired skipper use in the Alaska halibut individual fishing quota fishery. North Am. J. Fish. Manage., 36(5):1139-1148. https://doi.org/10.1080/02755947.2016.1184201.

Abbott, J., *A. Haynie*, and M. Reimer. 2015. Hidden flexibility: Institutions, incentives, and the margins of selectivity in fishing. Land Econ., 91(1):169-195. https://doi.org/10.3368/le.91.1.169.

Call, I., and *D. Lew*. 2015. Tradable permit programs: What are the lessons for the new Alaska halibut catch sharing plan? Mar. Policy, 52:125-137. https://doi.org/10.1016/j.marpol.2014.10.014.

Fissel, B. 2015. Methods for the Alaska groundfish first-wholesale price projections: Section 6 of the economic status of the groundfish fisheries off Alaska. NOAA Tech. Memo. NMFS-AFSC-305, 39 p. https://doi.org/10.7289/V58K772W.

Fissel, B., *R. Felthoven, S. Kasperski*, and C. O'Donnell. 2015. Decomposing productivity and efficiency changes in the Alaska head and gut factory trawl fleet. Mar. Policy, 62:337-346. https://doi.org/10.1016/j.marpol.2015.06.018.

Glass, J., G. Kruse, and *S. Miller*. 2015. Socioeconomic considerations of the commercial weathervane scallop fishery off Alaska using SWOT analysis. Ocean Coast. Manage., 105:154-165. https://doi.org/10.1016/j.ocecoaman.2015.01.005.

Lew, D., A. Himes-Cornell, and *J. Lee*. 2015. Weighting and imputation for missing data in a cost and earnings fishery survey. Mar. Resour. Econ., 30(2):219-230. https://doi.org/10.1086/679975.

Seung, C. 2015. Untangling economic impacts for Alaska fisheries: A structural path analysis. Mar. Resour. Econ., 30(3):331-347. https://doi.org/10.1086/680444.

Marine Protected Areas Research

Reimer, M., and *A. Haynie*. 2018. Mechanisms matter for evaluating the economic impacts of marine reserves. J. Environ. Econ. Manage., 88:427-446. https://doi.org/10.1016/j.jeem.2018.01.009.

Ecosystem-Based Management Research

Kroetz, K., M. Reimer, J. Sanchirico, *D. Lew*, and J. Huetteman. 2019. Defining the economic scope for ecosystem-based fishery management. Proc. Natl. Acad. Sci. U.S.A., 116(10):4188-4193. https://doi.org/10.1073/pnas.1816545116.

Zador, S., S. Gaichas, S. Kasperski, C. Ward, R. Blake, N. Ban, A. Himes-Cornell, and J. Koehn. 2017. Linking ecosystem processes to communities of practice through commercially fished species in the Gulf of Alaska. ICES J. Mar. Sci., 74(7):2024-2033. https://doi.org/10.1093/icesjms/fsx054.

Recreational Fisheries Economics Research

Whitehead, J., and *D. Lew*. 2020. Estimating recreation benefits through joint estimation of revealed and stated preference discrete choice data. Empirical Econ., 58(4):2009-2029. https://doi.org/10.1007/s00181-019-01646-z.

Lew, D., and *C. Seung*. 2019. Measuring economic contributions of the marine recreational charter fishing sector using a resampling approach. ICES J. Mar. Sci., fsz027. https://doi.org/10.1093/icesjms/fsz027.

Lew, D., and D. Larson. 2017. Stated preferences of Alaska resident saltwater anglers for contemporary regulatory policies. Mar. Fish. Rev., 79(3-4):12-25. https://doi.org/10.7755/MFR.79.3-4.2.

Seung, C., and *D. Lew*. 2017. A multiregional approach for estimating the economic impact of harvest restrictions on saltwater sportfishing. North Am. J. Fish. Manage., 37(5):1112-1129. https://doi.org/10.1080/02755947.2017.1345808.

Lew, D., D. Putman, and D. Larson. 2016. Attitudes and preferences toward Pacific halibut management alternatives in the saltwater sport fishing charter sector in Alaska: Results from a survey. NOAA Tech. Memo. NMFS-AFSC-326, 58 p. https://doi.org/10.7289/V5/TM-AFSC-326.

Lew, D., and D. Larson. 2015. Stated preferences for size and bag limits of Alaska charter boat anglers. Mar. Policy, 61:66-76. https://doi.org/10.1016/j.marpol.2015.07.007.

Lew, D., G. Sampson, *A. Himes-Cornell, J. Lee,* and *B. Garber-Yonts.* 2015. Costs, earnings, and employment in the Alaska saltwater sport fishing charter sector, 2011-2013. NOAA Tech. Memo. NMFS-AFSC-299, 134 p. https://doi.org/10.7289/V5KP803N.

Seafood Marketing and Trade Research

Fissel, B., B. Garber-Yonts, J. Calvin, D. Lesh, G. Evridge, J. Jacobson, P. Strickler, B. Ryznar, and *J. Lee*. 2020. Wholesale market profiles for Alaska groundfish and crab fisheries. Alaska Fisheries Science Center. 170 p. https://doi.org/10.25923/k6pc-g237.

Sociocultural Fisheries Research

Lavoie, A., and A. Himes-Cornell. 2019. Social networks of Alaska fishing communities. Coast. Manage., 47(1):1-22. https://doi.org/10.1080/08920753.2019.1525259.

Lavoie, A., *K. Sparks*, *S. Kasperski*, *A. Himes-Cornell*, K. Hoelting, and C. Maguire. 2018. Ground-truthing social vulnerability indices of Alaska fishing communities. Coast. Manage., 46(5):359-387. https://doi.org/10.1080/08920753.2018.1498710.

Szymkowiak, M., and *A. Himes-Cornell*. 2018. Fisheries allocations for socioeconomic development: Lessons learned from the Western Alaska Community Development Quota (CDQ) program. Ocean Coast. Manage., 155:40-49. https://doi.org/10.1016/j.ocecoaman.2018.01.014.

Himes-Cornell, A., and *A. Santos.* 2017. Involving fishing communities in data collection: A summary and description of the Alaska community survey, 2013. NOAA Tech. Memo. NMFS-AFSC-340, 195 p. https://doi.org/10.7289/V5/TM-AFSC-340.

Himes-Cornell, A., and *S. Kasperski.* 2016. Using socioeconomic and fisheries involvement indices to understand Alaska fishing community well-being. Coast. Manage., 44(1):36-70. https://doi.org/10.1080/08920753.2016.1116671.

Himes-Cornell, A., C. Maguire, S. Kasperski, K. Hoelting, and R. Pollnac. 2016. Understanding vulnerability in Alaska fishing communities: A validation methodology for rapid assessment of indices related to well-being. Ocean Coast. Manage., 124:53-65. https://doi.org/10.1016/j.ocecoaman.2016.02.004.

Kent, K., and *A. Himes-Cornell.* 2016. Making landfall: Linkages between fishing communities and support services. Coast. Manage., 44(4):279-294. https://doi.org/10.1080/08920753.2016.1135276.

Himes-Cornell, A., and K. Hoelting. 2015. Resilience strategies in the face of short and long-term change: Out-migration and fisheries regulation in Alaskan fishing communities. Ecol. Soc., 20(2):9. https://doi.org/10.5751/ES-07074-200209.

Himes-Cornell, A., and *S. Kasperski.* 2015. Assessing climate change vulnerability in Alaska's fishing communities. Fish. Res., 162:1-11. https://doi.org/10.1016/j.fishres.2014.09.010.

PACIFIC

Commercial Fisheries Economics Research

Hicks, R., *D. Holland*, P. Kuriyama, and K. Schnier. 2020. Choice sets for spatial discrete choice models in data rich environments. Resource Energy Econ., 60:101148. https://doi.org/10.1016/j.reseneeco.2019.101148.

Holland, D. 2020. An analysis of the Pacific groundfish trawl individual fishing quota (IFQ) quota pound (QP) market through 2019. NOAA Tech. Memo. NMFS-NWFSC-157. https://doi.org/10.25923/sxdw-kb49.

Holland, D., and J. Leonard. 2020. Is a delay a disaster? Economic impacts of the delay of the California Dungeness crab fishery due to a harmful algal bloom. Harmful Algae, 98:101904. https://doi.org/10.1016/j.hal.2020.101904.

Mamula, A., A. Thomas-Smyth, C. Speir, R. Kosaka, and *D. Pearson*. 2020. Matching Vessel Monitoring System data to trawl logbook and fish ticket data for the Pacific groundfish fishery. NOAA Tech. Memo., 76 p. https://doi.org/10.25923/7ag1-af45.

Richerson, K., A. Punt, and *D. Holland*. 2020. Nearly a half century of high but sustainable exploitation in the Dungeness crab (*Cancer magister*) fishery. Fish. Res., 226:105528. https://doi.org/10.1016/j.fishres.2020.105528.

Haskell, N., *A. Mamula*, and T. Collier. 2019. Competition or cooperation: Peer effects in the Pacific Coast groundfish fishery. Land Econ., 95(2):258-278. https://doi.org/10.3368/le.95.2.258.

Cramer, L., C. Flathers, D. Caracciolo, *S. Russell*, and F. Conway. 2018. Graying of the fleet: Perceived impacts on coastal resilience and local policy. Mar. Policy, 96:27-35. https://doi.org/10.1016/j.marpol.2018.07.012.

Errend, M., *L. Pfeiffer*, *E. Steiner*, *M. Guldin*, and *A. Warlick*. 2018. Economic outcomes for harvesters under the West Coast groundfish trawl catch share program: Have goals and objectives been met? Coast. Manage., 46(6):564-586. https://doi.org/10.1080/08920753.2018.1522489.

Guldin, M., and C. Anderson. 2018. Catch shares and shoreside processors: A costs and earnings exploration into the downstream sector. Mar. Resour. Econ., 33(3):289-307. https://doi.org/10.1086/698200.

Guldin, M., *A. Warlick*, *M. Errend*, *L. Pfeiffer*, and *E. Steiner*. 2018. Shorebased processor outcomes under catch shares. Coast. Manage., 46(6):587-602. https://doi.org/10.1080/08920753.2018.1522490.

Harsch, M., *L. Pfeiffer*, *E. Steiner*, and *M. Guldin*. 2018. Economic performance metrics: An overview of metrics and the use of web applications to disseminate outcomes in the U.S. West Coast groundfish trawl catch share program. NOAA Tech. Memo. NMFS-NWFSC-143, 22 p. https://doi.org/10.25923/a4g5-cq83.

Hodgson, E., *I. Kaplan*, *K. Marshall*, *J. Leonard*, T. Essington, *D. Busch*, E. Fulton, *C. Harvey*, *A. Hermann*, and *P. McElhany*. 2018. Consequences of spatially variable ocean acidification in the California Current: Lower pH drives strongest declines in benthic species in southern regions while greatest economic impacts occur in northern regions. Ecol. Model., 383:106-117. https://doi.org/10.1016/j.ecolmodel.2018.05.018.

Pfeiffer, L. 2018. Outcomes of the West Coast groundfish trawl catch share program: The first five years. Coast. Manage., 46(6):557-563. https://doi.org/10.1080/08920753.2018.1522488.

Richerson, K., *J. Leonard*, and *D. Holland*. 2018. Predicting the economic impacts of the 2017 West Coast salmon troll ocean fishery closure. Mar. Policy, 95:142-152. https://doi.org/10.1016/j.marpol.2018.03.005.

Somers, K., L. Pfeiffer, S. Miller, and *W. Morrison*. 2018. Using incentives to reduce bycatch and discarding: results under the West Coast catch share program. Coast. Manage., 46(6):621-637. https://doi.org/10.1080/08920753.2018.1522492.

Steiner, E., S. Russell, A. Vizek, and *A. Warlick*. 2018. Crew in the West Coast groundfish catch share program: Changes in compensation and job satisfaction. Coast. Manage., 46(6):656-676. https://doi.org/10.1080/08920753.2018.1522495.

Warlick, A., *E. Steiner*, and *M. Guldin*. 2018. History of the West Coast groundfish trawl fishery: Tracking socioeconomic characteristics across different management policies in a multispecies fishery. Mar. Policy, 93:9-21. https://doi.org/10.1016/j.marpol.2018.03.014.

Watson, J., E. Fuller, F. Castrucci, and *J. Samhouri*. 2018. Fishermen follow fine-scale physical ocean features for finance. Front. Mar. Sci., 5:46. https://doi.org/10.3389/fmars.2018.00046.

Holland, D., E. Steiner, and *A. Warlick.* 2017. Can vessel buybacks pay off: An evaluation of an industry funded fishing vessel buyback. Mar. Policy, 82:8-15. https://doi.org/10.1016/j.marpol.2017.05.002.

Leonard, J., and *E. Steiner.* 2017. Initial economic impacts of the U.S. Pacific Coast groundfish fishery individual fishing quota program. North Am. J. Fish. Manage., 37(4):862-881. https://doi.org/10.1080/02755947.2017.1330784.

Thorson, J., R. Fonner, *M. Haltuch,* K. Ono, and H. Winker. 2017. Accounting for spatiotemporal variation and fisher targeting when estimating abundance from multispecies fishery data. Can. J. Fish. Aquat. Sci., 74(11):1794-1807. https://doi.org/10.1139/cjfas-2015-0598.

Holland, D. 2016. Development of the Pacific groundfish trawl IFQ market. Mar. Resour. Econ., 31(4):453-464. https://doi.org/10.1086/687829.

Holland, D., and *S. Kasperski.* 2016. The impact of access restrictions on fishery income diversification of US West Coast fishermen. Coast. Manage., 44(5):452-463. https://doi.org/10.1080/08920753.2016.1208883.

Pfeiffer, L. 2016. Safety incidents in the West Coast catch shares fisheries. NOAA Tech. Memo. NMFS-F/SPO-160, 33 p.

Mamula, A., and T. Collier. 2015. Multifactor productivity, environmental change, and regulatory impacts in the US West Coast groundfish trawl fishery, 1994-2013. Mar. Policy, 62:326-336. https://doi.org/10.1016/j.marpol.2015.06.002.

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. Prog. Oceanogr., 138:348-380. https://doi.org/10.1016/j.pocean.2015.01.012.

Ocean Governance, Policy & Management Research

Chan, H. L. 2020. Economic impacts of Papahanaumokuakea Marine National Monument expansion on the Hawaii longline fishery. Mar. Policy, 115:103869. https://doi.org/10.1016/j.marpol.2020.103869.

Francis, T., P. Levin, A. Punt, *I. Kaplan*, *A. Varney*, and *K. Norman*. 2018. Linking knowledge to action in ocean ecosystem management: The ocean modeling forum. Elementa-Sci. Anthropocene, 6(1):83. https://doi.org/10.1525/elementa.338.

Breslow, S., B. Sojka, R. Barnea, X. Basurto, C. Carothers, S. Charnley, S. Coulthard, N. Dolsak, J. Donatuto, C. Garcia-Quijano, C. Hicks, A. Levine, M. Mascia, *K. Norman, M. Poe,* T. Satterfield, K. St. Martin, and *P. Levin.* 2016. Conceptualizing and operationalizing human wellbeing for ecosystem assessment and management. Environ. Sci. Policy, 66:250-259. https://doi.org/10.1016/j.envsci.2016.06.023.

Levin, P., G. Williams, A. Rehr, K. Norman, and *C. Harvey.* 2015. Developing conservation targets in social-ecological systems. Ecol. Soc., 20(4):6. https://doi.org/10.5751/es-07866-200406.

Marine Protected Areas Research

Wallmo, K., and *R. Kosaka.* 2017. Using choice models to inform large marine protected area design. Mar. Policy, 83:111-117. https://doi.org/10.1016/j.marpol.2017.05.034.

Other Marine Environmental Research

Moore, T., *J. Redfern*, M. Carver, S. Hastings, *J. Adams*, and *G. Silber*. 2018. Exploring ship traffic variability off California. Ocean Coast. Manage., 163:515-527. https://doi.org/10.1016/j.ocecoaman.2018.03.010.

Fuller, E., *J. Samhouri,* J. Stoll, S. Levin, and J. Watson. 2017. Characterizing fisheries connectivity in marine social-ecological systems. ICES J. Mar. Sci., 74(8):2087-2096. https://doi.org/10.1093/icesjms/fsx128.

Otto, S., S. Simons, J. Stoll, and *P. Lawson.* 2016. Making progress on bycatch avoidance in the ocean salmon fishery using a transdisciplinary approach. ICES J. Mar. Sci., 73(9):2380-2394. https://doi.org/10.1093/icesjms/fsw061.

Ecosystem-Based Management Research

Samhouri, J., E. Ramanujam, *J. Bizzarro*, H. Carter, K. Sayce, and S. Shen. 2019. An ecosystem-based risk assessment for California fisheries co-developed by scientists, managers, and stakeholders. Biol. Conserv., 231:103-121. https://doi.org/10.1016/j.biocon.2018.12.027.

Harvey, C., N. Garfield, G. Williams, K. Andrews, C. Barcelo´, *K. Barnas, S. Bograd, R. Brodeur, B. Burke, J. Cope, L. deWitt, J. Field, J. Fisher, C. Greene, T. Good, E. Hazen, D. Holland, M. Jacox, S. Kasperski, S. Kim, A. Leising, S. Melin, C. Morgan, S. Munsch, K. Norman,* W. Peterson, *M. Poe, J. Samhouri, I. Schroeder,* W. Sydeman, J. Thayer, *A. Thompson, N. Tolimieri, A. Varney, B. Wells, T. Williams,* and J. Zamon. 2017. Ecosystem status report of the California Current for 2017: A summary of ecosystem indicators compiled by the California Current Integrated Ecosystem Assessment Team (CCIEA). NOAA Tech. Memo. NMFS-NWFSC-139, 61 p. https://doi.org/10.7289/V5/TM-NWFSC-139.

Miller, R., J. Field, J. Santora, *M. Monk, R. Kosaka,* and *C. Thomson.* 2017. Spatial valuation of California marine fisheries as an ecosystem service. Can. J. Fish. Aquat. Sci., 74(11):1732-1748. https://doi.org/10.1139/cjfas-2016-0228.

Recreational Fisheries Economics Research

Hilger, J., *R. Mahler*, *S. Lovell*, and *C. Villafana*. 2019. Marine angler expenditures for Southern California based trip to non-US waters, 2016. NOAA Tech. Memo. NMFS-SWFSC-611, 13 p. https://doi.org/10.25923/fw5z-pe53.

Anderson, L., and *M. Plummer.* 2017. Recreational demand for shellfish harvesting under environmental closures. Mar. Resour. Econ., 32(1):43-57. https://doi.org/10.1086/688975.

Bellquist, L., B. Semmens, *S. Stohs,* and A. Siddall. 2017. Impacts of recently implemented recreational fisheries regulations on the Commercial Passenger Fishing Vessel fishery for Paralabrax sp. in California. Mar. Policy, 86:134-143. https://doi.org/10.1016/j.marpol.2017.09.017.

Hilger, J., and *S. Lovell.* 2017. An economic profile of the charter fishing fleet in California. Mar. Fish. Rev., 79(3-4):26-33. https://doi.org/10.7755/MFR.79.3-4.3.

Habitat Economics Research

Elbakidze, L., B. Fa'anunu, *A. Mamula,* and R. Taylor. 2017. Evaluating economic efficiency of a water buyback program: The Klamath irrigation project. Resource Energy Econ., 48:68-82. https://doi.org/10.1016/j.reseneeco.2017.02.001.

Speir, C., *A. Mamula,* and D. Ladd. 2015. Effects of water supply on labor demand and agricultural production in California's San Joaquin Valley. Water Econ. Policy, 1(2):1550003. https://doi.org/10.1142/s2382624x15500034.

Sociocultural Fisheries Research

Holland, D., J. Abbott, and *K. Norman*. 2020. Fishing to live or living to fish: Job satisfaction and identity of west coast fishermen. Ambio, 49(2):628-639. https://doi.org/10.1007/s13280-019-01206-w.

Moore, K., E. Allison, S. Dreyer, S. Jardine, T. Klinger, *S. Moore*, and *K. Norman*. 2020. Harmful algal blooms: Identifying effective adaptive actions used in fishery-dependent communities in response to a protracted event. Front. Mar. Sci., 6(803). https://doi.org/10.3389/fmars.2019.00803.

Moore, S., S. Dreyer, J. Ekstrom, K. Moore, *K. Norman*, T. Klinger, E. Allison, and S. Jardine. 2020. Harmful algal blooms and coastal communities: Socioeconomic impacts and actions taken to cope with the 2015 U.S. West Coast domoic acid event. Harmful Algae, 96:101799. https://doi.org/10.1016/j.hal.2020.101799.

Speir, C., C. Ridings, J. Marcum, M. Drexler, and *K. Norman*. 2020. Measuring health conditions and behaviours in fishing industry participants and fishing communities using the Behavioral Risk Factor Surveillance Survey (BRFSS). ICES J. Mar. Sci., 77(5):1830-1840. https://doi.org/10.1093/icesjms/fsaa032.

Vizek, A., M. Van Oostenburg, and *S. Russell*. 2020. The transition to catch shares management in the West Coast groundfish trawl fishery: Changing job attitudes and adjusting fishing participation plans. Soc. Nat. Resour., 33(10):1175-1193. https://doi.org/10.1080/08941920.2020.1777491.

Ritzman, J., A. Brodbeck, S. Brostrom, S. McGrew, S. Dreyer, T. Klinger, and *S. Moore*. 2018. Economic and sociocultural impacts of fisheries closures in two fishing-dependent communities following the massive 2015 US West Coast harmful algal bloom. Harmful Algae, 80:35-45. https://doi.org/10.1016/j.hal.2018.09.002.

Calhoun, S., F. Conway, and *S. Russell.* 2016. Acknowledging the voice of women: Implications for fisheries management and policy. Mar. Policy, 74:292-299. https://doi.org/10.1016/j.marpol.2016.04.033.

Norman, K., T. Safford, *B. Feist*, and M. Henly. 2016. At the confluence of data streams: Mapping paired social and biophysical landscapes on the Puget Sound's edge. Coast. Manage., 44(5):427-440. https://doi.org/10.1080/08920753.2016.1208038.

Poe, M., J. Donatuto, and T. Satterfield. 2016. "Sense of place": Human wellbeing considerations for ecological restoration in Puget Sound. Coast. Manage., 44(5):409-426. https://doi.org/10.1080/08920753.2016.1208037.

Russell, S., A. Arias-Arthur, K. Sparks, and *A. Varney.* 2016. West Coast communities and catch shares: The early years of social change. Coast. Manage., 44(5):441-451. https://doi.org/10.1080/08920753.2016.1208864.

Poe, M., P. Levin, N. Tolimieri, and *K. Norman.* 2015. Subsistence fishing in a 21st century capitalist society: From commodity to gift. Ecolog. Econ., 116:241-250. https://doi.org/10.1016/j.ecolecon.2015.05.003.

Sawchuk, J., A. Beaudreau, *D. Tonnes*, and D. Fluharty. 2015. Using stakeholder engagement to inform endangered species management and improve conservation. Mar. Policy, 54:98-107. https://doi.org/10.1016/j.marpol.2014.12.014.

Protected Resources Economics Research

Richerson, K., and *D. Holland.* 2017. Quantifying and predicting responses to a US West Coast salmon fishery closure. ICES J. Mar. Sci., 74(9):2364-2378. https://doi.org/10.1093/icesjms/fsx093.

WESTERN PACIFIC

Commercial Fisheries Economics Research

Ayers, A., and *H. Chan*. 2020. Rights-based management, competition, and distributional equity in Hawai'i's largest commercial fishery. Int. J. Commons, 14(1):262–277. https://doi.org/10.5334/ijc.996.

Ayers, *A.*, *J. Hospital*, and *C. Boggs*. 2018. Bigeye tuna catch limits lead to differential impacts for Hawai'i longliners. Mar. Policy, 94:93-105. https://doi.org/10.1016/j.marpol.2018.04.032.

Chan, H., and *M. Pan.* 2017. Economic and social characteristics of the Hawaii small boat fishery 2014. NOAA Tech. Memo. NMFS-PIFSC-63, 107 p. https://doi.org/10.7289/V5/TM-PIFSC-63.

Pan, M., S. Arita, and *K. Bigelow.* 2017. Cost-earnings study of the American Samoa longline fishery based on vessel operations in 2009 and recent trend of economic performance. National Marine Fisheries Services, Pacific Islands Fisheries Science Center. Administration Report H-17-01, 32 p. https://doi.org/10.7289/V5/AR-PIFSC-H-17-01.

Sweeney, J., R. Howitt, H. Chan, *M. Pan,* and *P. Leung.* 2017. How do fishery policies affect Hawaii's longline fishing industry? Calibrating a positive mathematical programming model. Nat. Resour. Model., 30(2):e12127. https://doi.org/10.1111/nrm.12127.

Kalberg, K., and *M. Pan.* 2016. 2012 economic cost earnings of pelagic longline fishing in Hawaii. NOAA Tech. Memo. NMFS-PIFSC-56, 60 p. https://doi.org/10.7289/V5/TM-PIFSC-56.

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 Coast. Manage., 106:87-96. https://doi.org/10.1016/j.ocecoaman.2015.01.015.

Ocean Governance, Policy and Management Research

Ayers, A., and *H. L. Chan*. 2020. Rights-based management, competition, and distributional equity in Hawai'i's largest commercial fishery. Int. J. Commons, 14(1):262–277. https://doi.org/10.5334/ijc.996.

Ayers, A., and *K. Leong*. 2020. Examining the seascape of compliance in U.S. Pacific island fisheries. Mar. Policy, 115:103820. https://doi.org/10.1016/j.marpol.2020.103820.

Chung, A., *T. Oliver*, J. Gove, K. Gorospe, D. White, *K. Davidson*, and W. Walsh. 2019. Translating resilience-based management theory to practice for coral bleaching recovery in Hawai'i. Mar. Policy, 99:58-68. https://doi.org/10.1016/j.marpol.2018.10.013.

Ecosystem-Based Management Research

Weijerman, M., Z. Oyafuso, K. Leong, K. Oleson, and *M. Winston*. 2020. Supporting ecosystem-based fisheries management in meeting multiple objectives for sustainable use of coral reef ecosystems. ICES J. Mar. Sci. https://doi.org/10.1093/icesjms/fsaa194.

Weijerman, M., C. Grace-McCaskey, S. Grafeld, D. Kotowicz, K. Oleson, and I. van Putten. 2016. Towards an ecosystem-based approach of Guam's coral reefs: The human dimension. Mar. Policy, 63:8-17. https://doi.org/10.1016/j.marpol.2015.09.028.

Recreational Fisheries Economics Research

Rollins, E., and *S. Lovell*. 2019. Charter fishing in Hawaii: A multi-region analysis of the economic linkages and contributions within and outside Hawaii. Mar. Policy, 100:277-287. https://doi.org/10.1016/j.marpol.2018.11.032.

Grafeld, S., K. Oleson, M. Barnes, M. Peng, C. Chan, and *M. Weijerman.* 2016. Divers' willingness to pay for improved coral reef conditions in Guam: An untapped source of funding for management and conservation? Ecolog. Econ., 128:202-213. https://doi.org/10.1016/j.ecolecon.2016.05.005.

Madge, L., *J. Hospital,* and E. Williams. 2016. Attitudes and preferences of Hawaii non-commercial fishermen. Volume 1: Report from the 2015 Hawaii saltwater recreational fishing survey. NOAA Tech. Memo. NMFS-PIFSC-58, 85 p. https://doi.org/10.7289/V5/TM-PIFSC-58.

Sociocultural Fisheries Research

Leong, K., A. Gramza, and C. Lepczyk. 2020. Understanding conflicting cultural models of outdoor cats to overcome conservation impasse. Conserv. Biol., 34(5):1190-1199. https://doi.org/10.1111/cobi.13530.

Leong, K., *S. Wongbusarakum*, *R. Ingram*, A. Mawyer, and M. Poe. 2019. Improving representation of human well-being and cultural importance in conceptualizing the West Hawai'i ecosystem. Front. Mar. Sci., 6:231. https://doi.org/10.3389/fmars.2019.00231.

Kotowicz, D., L. Richmond, and *J. Hospital.* 2017. Exploring public knowledge, attitudes, and perceptions of the Marianas Trench Marine National Monument. Coast. Manage., 45(6):452-469. https://doi.org/10.1080/08920753.2017.1373451.

Barnes, M., K. Kalberg, *M. Pan*, and *P. Leung.* 2016. When is brokerage negatively associated with economic benefits? Ethnic diversity, competition, and common-pool resources. Social Netwks., 45:55-65. https://doi.org/10.1016/j.socnet.2015.11.004.

Protected Resources Economics Research

Chan, H., and *M. Pan.* 2016. Spillover effects of environmental regulation for sea turtle protection in the Hawaii longline swordfish fishery. Mar. Resour. Econ., 31(3):259-279. https://doi.org/10.1086/686672.

NEW ENGLAND

Climate Change Research

Bisack, K., and *P. Clay*. 2020. Compliance with marine mammal protection: Focus groups reveal factors in commercial fishermen's decisions. Mar. Policy, 115:103789. https://doi.org/10.1016/j.marpol.2019.103789.

Clay, P., L. Colburn, and T. Seara. 2016. Social bonds and recovery: An analysis of Hurricane Sandy in the first year after landfall. Mar. Policy, 74:334-340. https://doi.org/10.1016/j.marpol.2016.04.049.

Colburn, L., M. Jepson, C. Weng, T. Seara, J. Weiss, and *J. Hare.* 2016. Indicators of climate change and social vulnerability in fishing dependent communities along the Eastern and Gulf Coasts of the United States. Mar. Policy, 74:323-333. https://doi.org/10.1016/j.marpol.2016.04.030.

Seara, T., P. Clay, and *L. Colburn.* 2016. Perceived adaptive capacity and natural disasters: A fisheries case study. Global Environ. Change (A Hum. Policy Dimens.), 38:49-57. https://doi.org/10.1016/j.gloenvcha.2016.01.006.

Commercial Fisheries Economics Research

Holzer, J., and *G. DePiper*. 2019. Intertemporal quota arbitrage in multispecies fisheries. J. Environ. Econ. Manage., 93:185-207. https://doi.org/10.1016/j.jeem.2018.12.002.

Jin, D., *M.-Y. Lee*, and *E. Thunberg*. 2019. An empirical analysis of individual fishing quota market trading. Mar. Resour. Econ., 34(1):39-57. https://doi.org/10.1086/701971.

Ardini, *G.*, and *M.-Y. Lee*. 2018. Do IFQs in the US Atlantic sea scallop fishery impact price and size? Mar. Resour. Econ., 33(3):263-288. https://doi.org/10.1086/698199.

Huang, L., S. Ray, K. Segerson, and *J. Walden*. 2018. Impact of collective rights-based fisheries management: Evidence from the New England groundfish fishery. Mar. Resour. Econ., 33(2):177-201. https://doi.org/10.1086/697478.

Hutniczak, B., and *A. Munch*. 2018. Fishermen's location choice under spatio-temporal update of expectations. J. Choice Model, 28:124-136. https://doi.org/10.1016/j.jocm.2018.05.002.

Murphy, T., *G. Ardini*, M. Vasta, *A. Kitts*, *C. Demarest*, *J. Walden*, and *D. Caless*. 2018. 2015 Final report on the performance of the northeast multispecies (groundfish) fishery (May 2007 – April 2016). National Marine Fisheries Service, Northeast Fisheries Science Center. Reference Document 18-13, 128 p.

Scheld, A., and *J. Walden*. 2018. An analysis of fishing selectivity for Northeast US multispecies bottom trawlers. Mar. Resour. Econ., 33(4):331-350. https://doi.org/10.1086/699712.

Färe, R., S. Grosskopf, and *J. Walden.* 2017. Measuring capital value in a commercial fishery: A distance function approach. Mar. Policy, 81:109-115. https://doi.org/10.1016/j.marpol.2017.02.014.

Georgianna, D., *M.-Y. Lee,* and *J. Walden.* 2017. Contrasting trends in the Northeast United States groundfish and scallop processing industries. Mar. Policy, 85:100-106. https://doi.org/10.1016/j.marpol.2017.08.025.

Muench, A., G. DePiper, and *C. Demarest.* 2017. On the precision of predicting fishing location using data from the vessel monitoring system (VMS). Can. J. Fish. Aquat. Sci., 75(7):1036-1047. https://doi.org/10.1139/cjfas-2016-0446.

Oliveira, M., A. Camanho, *J. Walden,* V. Miguéis, N. Ferreira, and M. Gaspar. 2017. Forecasting bivalve landings with multiple regression and data mining techniques: The case of the Portuguese artisanal dredge fleet. Mar. Policy, 84:110-118. https://doi.org/10.1016/j.marpol.2017.07.013.

Walden, J., R. Färe, and S. Grosskopf. 2017. Measuring change in productivity of a fishery with the Bennet–Bowley indicator. Fish. Bull., 115(3):273-283. https://doi.org/10.7755/FB.115.3.1.

Das, C. 2016. Fisheries annual fixed cost data collection and estimation methodology: An application in the Northeast, US. Mar. Policy, 71:184-193. https://doi.org/10.1016/j.marpol.2016.05.030.

Palmer, M., J. Deroba, C. Legault, and *E. Brooks.* 2016. Comment on "Slow adaptation in the face of rapid warming leads to collapse of the Gulf of Maine cod fishery'. Science, 352(6284):423. https://doi.org/10.1126/science.aad9674.

Holland, D., P. Pinto da Silva, and *A. Kitts.* 2015. Evolution of social capital and economic performance in New England harvest cooperatives. Mar. Resour. Econ., 30(4):371-392. https://doi.org/10.1086/682153.

Murphy, T., A. Kitts, C. Demarest, and *J. Walden.* 2015. 2013 Final report on the performance of the northeast multispecies (groundfish) fishery (May 2013 -April 2014). National Marine Fisheries Science, Northeast Fisheries Science Center. Reference Document 15-02, 106 p. https://doi.org/10.7289/V5XS5SB9.

Thunberg, E., and S. Correia. 2015. Measures of fishing fleet diversity in the New England groundfish fishery. Mar. Policy, 58:6-14. https://doi.org/10.1016/j.marpol.2015.04.005.

Thunberg, E., and *M.-Y. Lee.* 2015. The effort control program in the Northeast United States groundfish fishery. In Effort rights in fisheries management: General principles and case studies from around the world. 17–20 September 2012, Bilbao, Spain (D. Squires, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, S. Herrick, R. Hannesson, I. del Valle, and P. Anderson, eds.), p. 215-234. Food and Agriculture Organization of the United Nations, Rome.

Other Marine Environmental Research

Benjamin, S., *M.-Y. Lee*, and *G. DePiper*. 2018. Visualizing fishing data as rasters. National Marine Fisheries Service, Northeast Fisheries Science Center. Reference Document 18-12, 24 p.

Ecosystem-Based Management Research

DePiper, G., S. Gaichas, S. Lucey, P. Pinto da Silva, M. Anderson, H. Breeze, A. Bundy, *P. Clay,* G. Fay, *R. Gamble,* R. Gregory, *P. Fratantoni,* C. Johnson, M. Koen-Alonso, K. Kleisner, *J. Olson, C. Perretti,* P. Pepin, F. Phelan, *V. Saba, L. Smith, J. Tam,* N. Templeman, and R. Wildermuth. 2017. Operationalizing integrated ecosystem assessments within a multidisciplinary team: Lessons learned from a worked example. ICES J. Mar. Sci., 74(8):2076-2086. https://doi.org/10.1093/icesjms/fsx038.

Jin, D., G. DePiper, and P. Hoagland. 2016. Applying portfolio management to implement ecosystem-based fishery management (EBFM). North Am. J. Fish. Manage., 36(3):652-669. https://doi.org/10.1080/02755947.2016.1146180.

Wiedenmann, J., J. Wilen, P. Levin, M. Plummer, and M. Mangel. 2016. A framework for exploring the role of bioeconomics on observed fishing patterns and ecosystem dynamics. Coast. Manage., 44(5):529-546. https://doi.org/10.1080/08920753.2016.1208886.

Recreational Fisheries Economics Research

Carr-Harris, A., and S. Steinback. 2020. Expected economic and biological impacts of recreational Atlantic striped bass fishing policy. Front. Mar. Sci., 6(814). https://doi.org/10.3389/fmars.2019.00814.

Hutt, C., and *G. Silva*. 2019. Economic contributions of Atlantic highly migratory species anglers and tournaments, 2016. NOAA Tech. Memo. NMFS-OSF-8, 44 p.

Lee, M.-Y., S. Steinback, and *K. Wallmo.* 2017. Applying a bioeconomic model to recreational fisheries management: Groundfish in the northeast United States. Mar. Resour. Econ., 32(2):191-216. https://doi.org/10.1086/690676.

Sociocultural Fisheries Research

Stoll, J., *P. Pinto da Silva, J. Olson,* and S. Benjamin. 2015. Expanding the 'geography' of resilience in fisheries by bringing focus to seafood distribution systems. Ocean Coast. Manage., 116:185-192. https://doi.org/10.1016/j.ocecoaman.2015.07.019.

Protected Resources Economics Research

Bisack, K., and C. Das. 2015. Understanding non-compliance with protected species regulations in the Northeast USA gillnet fishery. Front. Mar. Sci., 2(91):1-11. https://doi.org/10.3389/fmars.2015.00091.

MID-ATLANTIC

Commercial Fisheries Economics Research

Holzer, J., *G. DePiper*, and *D. Lipton.* 2017. Buybacks with costly participation. J. Environ. Econ. Manage., 85:130-145. https://doi.org/10.1016/j.jeem.2017.05.001.

DePiper, G. 2015. To bid or not to bid: The role of participation rates in conservation auction outcomes. Am. J. Agric. Econ., 97(4):1157-1174. https://doi.org/10.1093/ajae/aav017.

Färe, R., S. Grosskopf, and *J. Walden.* 2015. Productivity change and fleet restructuring after transition to individual transferable quota management. Mar. Policy, 62:318-325. https://doi.org/10.1016/j.marpol.2015.05.015.

Huang, P., R. Woodward, M. Wilberg, and *D. Tomberlin.* 2015. Management evaluation for the Chesapeake Bay blue crab fishery: An integrated bioeconomic approach. North Am. J. Fish. Manage., 35(2):216-228. https://doi.org/10.1080/02755947.2014.986342.

Ecosystem-Based Management Research

Gaichas, S., *G. DePiper*, R. Seagraves, B. Muffley, M. Sabo, *L. Colburn*, and A. Loftus. 2018. Implementing ecosystem approaches to fishery management: Risk assessment in the US Mid-Atlantic. Front. Mar. Sci., 5:442. https://doi.org/10.3389/fmars.2018.00442.

DePiper, G., D. Lipton, and R. Lipcius. 2017. Valuing ecosystem services: Oysters, denitrification, and nutrient trading programs. Mar. Resour. Econ., 32(1):1-20. https://doi.org/10.1086/688976.

Gaichas, S., R. Seagraves, J. Coakley, *G. DePiper, V. Guida, J. Hare, P. Rago,* and M. Wilberg. 2016. A framework for incorporating species, fleet, habitat, and climate interactions into fishery management. Front. Mar. Sci., 3:105. https://doi.org/10.3389/fmars.2016.00105.

Sociocultural Fisheries Research

Freitag, A., J. Vasslides, and *H. Townsend*. 2019. Are you thinking what I'm thinking? A conceptual modeling approach to understand stakeholders' assessments of the fate of chesapeake oysters. Mar. Policy, 99:99-110. https://doi.org/10.1016/j.marpol.2018.10.011.

Freitag, A., *B. Vogt*, and T. Hartley. 2018. Breaking stereotypes through network analysis of the Chesapeake oyster community. Mar. Policy, 90:146-151. https://doi.org/10.1016/j.marpol.2017.12.023.

SOUTH ATLANTIC

Commercial Fisheries Economics Research

Crosson, S. 2016. The Affordable Care Act and opportunities for change in North Carolina's commercial fisheries. Mar. Resour. Econ., 31(2):121-129. https://doi.org/10.1086/685099.

Crosson, S. 2015. Anticipating exit from North Carolina's commercial fisheries. Soc. Nat. Resour., 28(7):797-806. https://doi.org/10.1080/08941920.2014.970737.

Yandle, T., and *S. Crosson.* 2015. Whatever happened to the wreckfish fishery? An evaluation of the oldest finfish ITQ program in the United States. Mar. Resour. Econ., 30(2):193-217. https://doi.org/10.1086/679974.

Recreational Fisheries Economics Research

Carter, D., A. Marvasti, C. Liese, and *S. Crosson.* 2016. Valuing sportfishing harvest with the demand for boat fuel. Mar. Resour. Econ., 31(3):323-338. https://doi.org/10.1086/686580.

Shideler, G., *D. Carter, C. Liese,* and *J. Serafy.* 2015. Lifting the goliath grouper harvest ban: Angler perspectives and willingness to pay. Fish. Res., 161:156-165. https://doi.org/10.1016/j.fishres.2014.07.009.

GULF OF MEXICO

Commercial Fisheries Economics Research

Chancellor, E., S. Murawski, C. Paris, *L. Perruso*, and N. Perlin. 2020. Comparative environmental sensitivity of offshore Gulf of Mexico waters potentially impacted by ultra-deep oil well blowouts. In Scenarios and responses to future deep oil spills: Fighting the next war (S. Murawski, C. Ainsworth, S. Gilbert, D. Hollander, C. Paris, M. Schlüter, and D. Wetzel, eds.), p. 443-466. Springer International Publishing, Cham.

Dakhlia, S., and *A. Marvasti*. 2020. Regulatory change, market structure, and fatalities: The case of the Gulf of Mexico reef fish fishery. Rev. Ind. Organ., 57(1):1-26. https://doi.org/10.1007/s11151-019-09712-7.

Marvasti, A. 2020. Value of life and injury: Evidence from a U.S. Fishery Contemporary Econ. Pol., 38(4):711-722. https://doi.org/10.1111/coep.12472.

Solís, D., *J. Agar*, and J. del Corral. 2020. Diversification, efficiency and productivity in catch share fisheries. Fish. Res., 226:105532. https://doi.org/10.1016/j.fishres.2020.105532.

Halmo, D., D. Griffith, and *B. Stoffle*. 2019. "Out of sight, out of mind": Rapid ethnographic assessment of commercial fishermen's perspectives on corporate/state response to the Deepwater Horizon disaster. Hum. Org., 78(1):1-11.

Marvasti, A. 2019. Effect of government regulations on the severity of injuries in fisheries. Appl. Econ., 51(38):4164-4175. https://doi.org/10.1080/00036846.2019.1590525.

Watson, J., *A. Haynie*, P. Sullivan, *L. Perruso*, S. O'Farrell, J. Sanchirico, and F. Mueter. 2018. Vessel monitoring systems (VMS) reveal an increase in fishing efficiency following regulatory changes in a demersal longline fishery. Fish. Res., 207:85-94. https://doi.org/10.1016/j.fishres.2018.06.006.

Marvasti, A. 2017. Determinants of the risk of accidents in the Gulf of Mexico commercial fisheries. Ocean Coast. Manage., 148:282-287. https://doi.org/10.1016/j.ocecoaman.2017.08.018.

Marvasti, A., and S. Dakhlia. 2017. Occupational safety and the shift from common to individual fishing quotas in the Gulf of Mexico. Southern Econ. J., 83(3):705-720. https://doi.org/10.1002/soej.12154.

O'Farrell, S., J. Sanchirico, I. Chollett, *M. Cockrell, S. Murawski, J. Watson, A. Haynie, A. Strelcheck,* and *L. Perruso.* 2017. Improving detection of short-duration fishing behaviour in vessel tracks by feature engineering of training data. ICES J. Mar. Sci., 74(5):1428-1436. https://doi.org/10.1093/icesjms/fsw244.

Purcell, K., J. Craig, J. Nance, M. Smith, and L. Bennear. 2017. Fleet behavior is responsive to a large-scale environmental disturbance: Hypoxia effects on the spatial dynamics of the northern Gulf of Mexico shrimp fishery. PLOS One, 12(8):e0183032. https://doi.org/10.1371/journal.pone.0183032.

Marvasti, A., and A. Lamberte. 2016. Commodity price volatility under regulatory changes and disaster. J. Empirical Finance, 38:355-361. https://doi.org/10.1016/j.jempfin.2016.07.008.

Karnauskas, 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. Glob. Change. Biol., 21(7):2554-2568. https://doi.org/10.1111/gcb.12894.

Solis, D., *J. Agar,* and J. del Corral. 2015. IFQs and total factor productivity changes: The case of the Gulf of Mexico red snapper fishery. Mar. Policy, 62:347-357. https://doi.org/10.1016/j.marpol.2015.06.001.

Solís, D., J. del Corral, *L. Perruso,* and *J. Agar.* 2015. Individual fishing quotas and fishing capacity in the US Gulf of Mexico red snapper fishery. Australian J. Agr. Resource Econ., 59(2):288-307. https://doi.org/10.1111/1467-8489.12061.

Other Marine Environmental Research

Farrow, K., A. Brinson, K. Wallmo, and *D. Lew.* 2016. Environmental attitudes in the aftermath of the Gulf Oil Spill. Ocean Coast. Manage., 119:128-134. https://doi.org/10.1016/j.ocecoaman.2015.10.001.

Ecosystem-Based Management Research

Gruss, A., K. Rose, J. Simons, C. Ainsworth, E. Babcock, D. Chagaris, K. De Mutsert, J. Froeschke, P. Himchak, *I. Kaplan,* H. O'Farrell, and M. Rejon. 2017. Recommendations on the use of ecosystem modeling for informing ecosystem-based fisheries management and restoration outcomes in the Gulf of Mexico. Mar. Coast. Fish., 9(1):281-295. https://doi.org/10.1080/19425120.2017.1330786.

Karnauskas, M., C. Kelble, S. Regan, C. Quenée, R. Allee, *M. Jepson,* A. Freitag, *J. Craig,* C. Carollo, L. Barbero, N. Trifonova, *D. Hanisko,* and *G. Zapfe.* 2017. 2017 Ecosystem status report update for the Gulf of Mexico. NOAA Tech. Memo. NMFS-SEFSC-706, 51 p.

Recreational Fisheries Economics Research

Carter, D., *S. Lovell*, and *C. Liese*. 2020. Does angler willingness-to-pay for changes in harvest regulations vary by state? Results from a choice experiment in the Gulf of Mexico. Mar. Policy, 121:104196. https://doi.org/10.1016/j.marpol.2020.104196.

Carter, D., *S. Crosson*, and *C. Liese.* 2015. Nowcasting intraseasonal recreational fishing harvest with internet search volume. PLOS One, 10(9):e0137752. https://doi.org/10.1371/journal.pone.0137752.

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. Hum. Org., 74(1):1-15. https://doi.org/10.17730/humo.74.1.665ww120082h561l.

CARIBBEAN

Commercial Fisheries Economics Research

Stoffle, B., A. Stoltz, *S. Crosson*, and J. Sweeney Tookes. 2020. In the wake of two storms: an impact assessment of hurricanes Irma and Maria on the St. Croix and St. Thomas fisheries, USVI. Appl. Anthropol., 40(2):23-33.

Agar, J., M. Shivlani, and D. Solis. 2017. The commercial trap fishery in the Commonwealth of Puerto Rico: An economic, social, and technological profile. North Am. J. Fish. Manage., 37(4):778-788. https://doi.org/10.1080/02755947.2017.1317678.

Ocean Governance, Policy and Management Research

Agar, J., C. Fleming, and F. Tonioli. 2019. The net buyback and ban in St. Croix, US Virgin Islands. Ocean Coast. Manage., 167:262-270. https://doi.org/10.1016/j.ocecoaman.2018.10.019.

Habitat Economics Research

Fitzpatrick, L., C. Parmeter, and *J. Agar.* 2017. Threshold effects in meta-analyses with application to benefit transfer for coral reef valuation. Ecolog. Econ., 133:74-85. https://doi.org/10.1016/j.ecolecon.2016.11.015.

U.S. Territories and International Fisheries Research

Agar, J., M. Shivlani, and D. Matos-Caraballo. 2020. The aftermath of Hurricane María on Puerto Rican small-scale fisheries. Coast. Manage., 48(5):378-397. https://doi.org/10.1080/08920753.2020.1795967.

INTERNATIONAL

Climate Change Research

Melnikov, N., B. O'Neill, *M. Dalton*, and B. van Ruijven. 2017. Downscaling heterogeneous household outcomes in dynamic CGE models for energy-economic analysis. Energy Econ., 65:87-97. https://doi.org/10.1016/j.eneco.2017.04.023.

McLeod, E., B. Szuster, J. Hinkel, E. Tompkins, N. Marshall, T. Downing, *S. Wongbusarakum,* A. Patwardhan, M. Hamza, C. Anderson, S. Bharwani, L. Hansen, and P. Rubinoff. 2016. Conservation organizations need to consider adaptive capacity: Why local input matters. Conserv. Lett., 9(5):351-360. https://doi.org/10.1111/conl.12210.

McLeod, E., B. Szuster, E. Tompkins, N. Marshall, T. Downing, *S. Wongbusarakum,* A. Patwardhan, M. Hamza, C. Anderson, S. Bharwani, L. Hansen, and P. Rubinoff. 2015. Using expert knowledge to develop a vulnerability and adaptation framework and methodology for application in tropical island communities. Coast. Manage., 43(4):365-382. https://doi.org/10.1080/08920753.2015.1046803.

Wongbusarakum, S., M. Gombos, *B. Parker*, C. Courtney, S. Atkinson, and W. Kostka. 2015. The Local Early Action Planning (LEAP) tool: Enhancing community-based planning for a changing climate. Coast. Manage., 43(4):383-393. https://doi.org/10.1080/08920753.2015.1046805.

Commercial Fisheries Economics Research

Kitts, A., R. Van Anrooy, S. Van Eijs, J. Pino Shibata, R. Pallalever Pérez, A. A. Gonçalves, *G. Ardini, C. Liese, M. Pan*, and *E. Steiner*. 2020. Techno-economic performance review of selected fishing fleets in North and South America. In FAO Fisheries and Aquaculture Technical Paper No. 653/2. https://doi.org/10.4060/ca9543en.

Seung, C., and *D.-H. Kim*. 2020. Examining supply chain for seafood industries using structural path analysis. Sustainability, 12(5):2061. https://doi.org/10.3390/su12052061.

Geronimo, R., E. Franklin, *R. Brainard*, *C. Elvidge*, M. Santos, *R. Venegas*, and C. Mora. 2018. Mapping fishing activities and suitable fishing grounds using nighttime satellite images and maximum entropy modelling. Remote Sens., 10(10):1604. https://doi.org/10.3390/rs10101604.

Guillotreau, P., *D. Squires*, J. Sun, and G. Compeán. 2017. Local, regional and global markets: What drives the tuna fisheries? Rev. Fish Biol. Fish., 27(4):909-929. https://doi.org/10.1007/s11160-016-9456-8.

Gutierrez, A., and S. Morgan. 2017. Impediments to fisheries sustainability - coordination between public and private fisheries governance systems. Ocean Coast. Manage., 135:79-92. https://doi.org/10.1016/j.ocecoaman.2016.10.016.

Pons, M., T. Branch, M. Melnychuk, O. Jensen, *J. Brodziak,* J. Fromentin, S. Harley, *A. Haynie,* L. Kell, M. Maunder, A. Parma, V. Restrepo, R. Sharma, R. Ahrens, and R. Hilborn. 2017. Effects of biological, economic and management factors on tuna and billfish stock status. Fish Fish., 18(1):1-21. https://doi.org/10.1111/faf.12163.

Smith, M., A. Oglend, A. Kirkpatrick, F. Asche, L. Bennear, *J. Craig,* and *J. Nance.* 2017. Seafood prices reveal impacts of a major ecological disturbance. Proc. Natl. Acad. Sci. U. S. A, 114(7):1512-1517. https://doi.org/10.1073/pnas.1617948114.

Sun, C., F. Chiang, P. Guillotreau, *D. Squires*, D. Webster, and M. Owens. 2017. Fewer fish for higher profits? Price response and economic incentives in global tuna fisheries management. Environ. Resour. Econ., 66(4):749-764. https://doi.org/10.1007/s10640-015-9971-4.

Kuriyama, P., T. Branch, *M. Bellman*, and K. Rutherford. 2016. Catch shares have not led to catch-quota balancing in two North American multispecies trawl fisheries. Mar. Policy, 71:60-70. https://doi.org/10.1016/j.marpol.2016.05.010.

Melnychuk, M., T. Essington, T. Branch, S. Heppell, O. Jensen, *J. Link,* S. Martell, A. Parma, and A. Smith. 2016. Which design elements of individual quota fisheries help to achieve management objectives? Fish Fish., 17(1):126-142. https://doi.org/10.1111/faf.12094.

Oliveira, M., A. Camanho, *J. Walden,* and M. Gaspar. 2016. Evaluating the influence of skipper skills in the performance of Portuguese artisanal dredge vessels. ICES J. Mar. Sci., 73(10):2721-2728. https://doi.org/10.1093/icesjms/fsw103.

Squires, D., and *N. Vestergaard.* 2016. Economics of Fisheries. In Oxford bibliographies in environmental science (E. Wohl, ed.). Oxford University Press.

Stemle, A., H. Uchida, and C. Roheim. 2016. Have dockside prices improved after MSC certification? Analysis of multiple fisheries. Fish. Res., 182:116-123. https://doi.org/10.1016/j.fishres.2015.07.022.

Woods, P., *D. Holland,* and A. Punt. 2016. Evaluating the benefits and risks of species-transformation provisions in multispecies IFQ fisheries with joint production. ICES J. Mar. Sci., 73(7):1764-1773. https://doi.org/10.1093/icesjms/fsw031.

Grafton, R., K. Segerson, and *D. Squires.* 2015. Promoting green growth in fisheries. In Protecting the environment privately (J. Bennett, ed.), p. 63-87. World Scientific Publishing Company, Singapore.

Squires, D., and M. Maunder. 2015. Synthesis of workshop results: Pros and cons of effort based management. In Effort rights in fisheries management: General principles and case studies from around the World. 17–20 September 2012, Bilbao, Spain (D. Squires, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, S. Herrick, R. Hannesson, I. del Valle, and P. Anderson, eds.), p. 11-28. Food and Agriculture Organization of the United Nations, Rome.

Woods, P., C. Bouchard, *D. Holland,* A. Punt, and G. Marteinsdóttir. 2015. Catch-quota balancing mechanisms in the Icelandic multi-species demersal fishery: Are all species equal? Mar. Policy, 55:1-10. https://doi.org/10.1016/j.marpol.2015.01.004.

Woods, P., *D. Holland,* G. Marteinsdóttir, and A. Punt. 2015. How a catch–quota balancing system can go wrong: An evaluation of the species quota transformation provisions in the Icelandic multispecies demersal fishery. ICES J. Mar. Sci., 72(5):1257-1277. https://doi.org/10.1093/icesjms/fsv001.

Ocean Governance, Policy and Management Research

Bellanger, M., *C. Speir*, F. Blanchard, K. Brooks, J. Butler, *S. Crosson*, *R. Fonner*, S. Gourguet, *D. Holland*, S. Kuikka, B. Le Gallic, R. Lent, G. Libecap, *D. Lipton*, P. Nayak, D. Reid, P. Scemama, R. Stephenson, O. Thébaud, and J. Young. 2020. Addressing marine and coastal governance conflicts at the interface of multiple sectors and jurisdictions. Front. Mar. Sci., 7:544440. https://doi.org/10.3389/fmars.2020.544440.

Hutniczak, B., N. Vestergaard, and *D. Squires*. 2019. Policy change anticipation in the buyback context. Environ. Resource Econ., 73(1):111-132. https://doi.org/10.1007/s10640-018-0252-x.

Fulton, E., A. Punt, C. Dichmont, *C. Harvey*, and R. Gorton. 2019. Ecosystems say good management pays off. Fish Fish., 20(1):66-96. https://doi.org/10.1111/faf.12324.

Lodge, M., K. Segerson, and *D. Squires*. 2019. Environmental policy for deep seabed mining. In Environmental issues of deep-sea mining: Impacts, consequences and policy perspectives (R. Sharma, ed.), p. 347-379. Springer International Publishing, Cham.

Cinner, J., E. Maire, C. Huchery, M. MacNeil, N. Graham, C. Mora, M. Barnes, J. Kittinger, C. Hicks, S. D'Agata, A. Hoey, G. Gurney, D. Feary, *I. Williams*, M. Kulbicki, L. Vigliola, L. Wantiez, G. Edgar, R. Stuart-Smith, S. Sandin, A. Green, M. Hardt, M. Beger, A. Friedlander, S. Wilson, E. Brokovich, A. Brooks, J. Cruz-Motta, D. Booth, P. Chabanet, C. Gough, M. Tupper, S. Ferse, U. Sumaila, S. Pardede, and D. Mouillot. 2018. Gravity of human impacts mediates coral reef conservation gains. Proc. Natl. Acad. Sci. U. S. A, 115(27):E6116-E6125. https://doi.org/10.1073/pnas.1708001115.

Squires, D., and N. Vestergaard. 2018. Rethinking the commons problem: Technical change, knowledge spillovers, and social learning. J. Environ. Econ. Manage., 91:1-25. https://doi.org/10.1016/j.jeem.2018.06.011.

Van Nijen, K., S. Van Passel, and *D. Squires*. 2018. A stochastic techno-economic assessment of seabed mining of polymetallic nodules in the Clarion Clipperton Fracture Zone. Mar. Policy, 95:133-141. https://doi.org/10.1016/j.

marpol.2018.02.027.

Lodge, M., K. Segerson, and *D. Squires.* 2017. Sharing and preserving the resources in the deep sea: Challenges for the international seabed authority. Int. J. Mar. Coast. Law, 32(3):427 to 457. https://doi.org/10.1163/15718085-12323047.

Mumby, P., J. Sanchirico, K. Broad, M. Beck, P. Tyedmers, M. Morikawa, T. Okey, L. Crowder, E. Fulton, D. Kelso, J. Kleypas, *S. Munch,* P. Glynn, K. Matthews, and J. Lubchenco. 2017. Avoiding a crisis of motivation for ocean management under global environmental change. Glob. Change. Biol., 23(11):4483-4496. https://doi.org/10.1111/gcb.13698.

Rindorf, A., C. Dichmont, *J. Thorson,* A. Charles, L. Clausen, P. Degnbol, D. Garcia, N. Hintzen, A. Kempf, *P. Levin,* P. Mace, C. Maravelias, C. Minto, J. Mumford, S. Pascoe, R. Prellezo, A. Punt, D. Reid, C. Rockmann, R. Stephenson, O. Thebaud, G. Tserpes, and R. Voss. 2017. Inclusion of ecological, economic, social, and institutional considerations when setting targets and limits for multispecies fisheries. ICES J. Mar. Sci., 74(2):453-463. https://doi.org/10.1093/icesjms/fsw226.

Squires, D., M. Maunder, R. Allen, P. Andersen, K. Astorkiza, D. Butterworth, G. Caballero, *R. Clarke,* H. Ellefsen, P. Guillotreau, J. Hampton, R. Hannesson, E. Havice, *M. Helvey, S. Herrick Jr.,* K. Hoydal, V. Maharaj, R. Metzner, I. Mosqueira, A. Parma, I. Prieto-Bowen, V. Restrepo, S. F. Sidique, S. Steinsham, *E. Thunberg,* I. del Valle, and N. Vestergaard. 2017. Effort rights-based management. Fish Fish., 18(3):440-465. https://doi.org/10.1111/faf.12185.

Yun, S.D., *B. Hutniczak,* J. Abbott, and E. Fenichel. 2017. Ecosystem-based management and the wealth of ecosystems. Proc. Natl. Acad. Sci. U. S. A, 114(25):6539-6544. https://doi.org/10.1073/pnas.1617666114.

Hicks, C., A. Levine, A. Agrawal, X. Basurto, *S. Breslow,* C. Carothers, S. Charnley, S. Coulthard, N. Dolsak, J. Donatuto, C. Garcia-Quijano, M. Mascia, *K. Norman, M. Poe,* T. Satterfield, K. Martin, and *P. Levin.* 2016. Engage key social concepts for sustainability. Science, 352(6281):38-40. https://doi.org/10.1126/science.aad4977.

Moore, S., and *D. Squires.* 2016. Governing the depths: Conceptualizing the politics of deep sea resources. Global Environ. Politics, 16(2):101-109. https://doi.org/10.1162/GLEP_a_00347.

Squires, D., M. Maunder, *S. Herrick, M. Helvey,* and *R. Clarke.* 2016. Effort rights-based management. In Effort rights in fisheries management: General principles and case studies from around the world. 17–20 September 2012, Bilbao, Spain (D. Squires, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, S. Herrick, R. Hannesson, I. del Valle, and P. Anderson, eds.), p. 37-78. Food and Agriculture Organization of the United Nations, Rome.

Squires, D., M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, *S. Herrick,* R. Hannesson, I. del Valle, and P. Anderson. 2016. Effort rights in fisheries management: General principles and case studies from around the world. In Effort rights in fisheries management: General principles and case studies from around the world. 17–20 September 2012, Bilbao, Spain (D. Squires, M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, S. Herrick, R. Hannesson, I. del Valle, and P. Anderson, eds.), p. 1-10. Food and Agriculture Organization of the United Nations, Rome.

Squires, D., M. Maunder, N. Vestergaard, V. Restrepo, R. Metzner, *S. Herrick,* R. Hannesson, I. del Valle, and P. Anderson, eds. 2016. Effort rights in fisheries management: General principles and case studies from around the world. 17–20 September 2012, Bilbao, Spain. 260 p. Food and Agriculture Organization of the United Nations, Rome.

Grafton, R., and *D. Squires.* 2015. The economic sustainability paradigm and freshwater and marine fisheries governance. In Handbook of water economics (A. Dinar, and K. Schwabe, eds.), p. 199–218. Edward Elgar, Cheltenham, UK.

Squires, D., L. Ballance, R. Deriso, *J. Ianelli,* M. Maunder, and K. Schaefer. 2015. Comment on 'Scope and compatibility of measures in international fisheries agreements' by Finus and Schneider. Oxford Econ. Pap., 67(4):889-894. https://doi.org/10.1093/oep/gpv041.

Marine Protected Areas Research

McDermott, S., L. Buhl-Mortensen, G. Dahle, *D. Hart, A. Haynie,* T. Johannessen, E. Moksness, E. Olsen, E. Olsen, *J. Olson, P. Spencer,* and *W. Stockhausen.* 2017. Lessons on marine protected area management in northern boreal regions from the United States and Norway. Mar. Fish. Rev., 79(1):28 to 51. https://doi.org/10.7755/MFR.79.1.2.

Other Marine Environmental Research

Olsen, E., *I. Kaplan*, C. Ainsworth, G. Fay, *S. Gaichas*, *R. Gamble*, *R. Girardin*, C. Eide, T. Ihde, *H. Morzaria-Lun*a, *K. Johnson*, M. Savina-Rolland, *H. Townsend*, *M. Weijerman*, E. Fulton, and *J. Link*. 2018. Ocean futures under ocean acidification, marine protection, and changing fishing pressures explored using a worldwide suite of ecosystem models. Front. Mar. Sci., 5:64. https://doi.org/10.3389/fmars.2018.00064.

Higham, J., L. Bejder, S. Allen, *P. Corkeron,* and D. Lusseau. 2016. Managing whale-watching as a non-lethal consumptive activity. J. Sustainable Tourism, 24(1):73-90. https://www.tandfonline.com/doi/abs/10.1080/09669582.2015.1062020?journalCode=rsus20#.VcQtO_mqpBc.

Ecosystem-Based Management Research

Holland, D. 2018. Collective rights–based fishery management: A path to ecosystem-based fishery management. Annu. Rev. Resour. Econ., 10(1):469-485. https://doi.org/10.1146/annurev-resource-100517-023110.

Milner-Gulland, E., S. Garcia, W. Arlidge, J. Bull, A. Charles, L. Dagorn, S. Fordham, J. Graff Zivin, M. Hall, J. Shrader, N. Vestergaard, C. Wilcox, and *D. Squires*. 2018. Translating the terrestrial mitigation hierarchy to marine megafauna by-catch. Fish Fish., 19(3):547-561. https://doi.org/10.1111/faf.12273.

Squires, D., and S. Garcia. 2018. The least-cost biodiversity impact mitigation hierarchy with a focus on marine fisheries and bycatch issues. Conserv. Biol., 32(5):989-997. https://doi.org/10.1111/cobi.13155.

Link, J., O. Thebaud, D. Smith, A. Smith, J. Schmidt, J. Rice, J. Poos, C. Pita, *D. Lipton,* M. Kraan, S. Frusher, L. Doyen, A. Cudennec, K. Criddle, and D. Bailly. 2017. Keeping humans in the ecosystem. ICES J. Mar. Sci., 74(7):1947-1956. https://doi.org/10.1093/icesjms/fsx130.

Maury, O., L. Campling, H. Arrizabalaga, O. Aumont, L. Bopp, G. Merino, *D. Squires,* W. Cheung, M. Goujon, C. Guivarch, S. Lefort, F. Marsac, P. Monteagudo, R. Murtugudde, H. Österblom, J. Pulvenis, Y. Ye, and B. van Ruijven. 2017. From shared socio-economic pathways (SSPs) to oceanic system pathways (OSPs): Building policy-relevant scenarios for global oceanic ecosystems and fisheries. Global Environ. Change, 45:203-216. https://doi.org/10.1016/j.gloenvcha.2017.06.007.

Payne, M., A. Hobday, B. MacKenzie, D. Tommasi, D. Dempsey, S. Fässler, *A. Haynie,* R. Ji, G. Liu, *P. Lynch,* D. Matei, A. Miesner, K. Mills, K. Strand, and E. Villarino. 2017. Lessons from the first generation of marine ecological forecast products. Front. Mar. Sci., 4:289. https://doi.org/10.3389/fmars.2017.00289.

Rindorf, A., C. Dichmont, *P. Levin,* P. Mace, S. Pascoe, R. Prellezo, A. Punt, D. Reid, R. Stephenson, C. Ulrich, M. Vinther, and L. Clausen. 2017. Food for thought: Pretty good multispecies yield. ICES J. Mar. Sci., 74(2):475-486. https://doi.org/10.1093/icesjms/fsw071.

Recreational Fisheries Economics Research

Seung, C., and D. Kim. 2018. Developing confidence intervals for economic impacts: A multi-regional analysis of a recreational fishery in Korea. Mar. Policy, 94:20-27. https://doi.org/10.1016/j.marpol.2018.04.031.

Kim, D.-H., *C. Seung,* and Y.-I. Seo. 2017. Multi-regional economic impacts of recreational fisheries: Analysis of Small Sea Ranch in Gyeong-Nam Province, Korea. Mar. Policy, 84:90-98. https://doi.org/10.1016/j.marpol.2017.07.011.

Seafood Marketing and Trade Research

Béné, C., R. Arthur, H. Norbury, E. Allison, M. Beveridge, S. Bush, L. Campling, W. Leschen, D. Little, *D. Squires,* S. Thilsted, M. Troell, and M. Williams. 2016. Contribution of fisheries and aquaculture to food security and poverty reduction: Assessing the current evidence. World Devel., 79:177-196. https://doi.org/10.1016/j.worlddev.2015.11.007.

Crona, B., X. Basurto, *D. Squires,* S. Gelcich, T. Daw, A. Khan, E. Havice, V. Chomo, M. Troell, E. Buchary, and E. Allison. 2016. Towards a typology of interactions between small-scale fisheries and global seafood trade. Mar. Policy, 65:1-10. https://doi.org/10.1016/j.marpol.2015.11.016.

Sociocultural Fisheries Research

Froehlich, H., R. Gentry, *M. Rust*, D. Grimm, and B. Halpern. 2017. Public perceptions of aquaculture: Evaluating spatiotemporal patterns of sentiment around the world. PLOS One, 12(1):e0169281. https://doi.org/10.1371/journal.pone.0169281.

Protected Resources Economics Research

Squires, D., V. Restrepo, S. Garcia, and *P. Dutton*. 2018. Fisheries bycatch reduction within the least-cost biodiversity mitigation hierarchy: Conservatory offsets with an application to sea turtles. Mar. Policy, 93:55-61. https://doi.org/10.1016/j.marpol.2018.03.018.

Lent, R., and *D. Squires.* 2017. Reducing marine mammal bycatch in global fisheries: An economics approach. Deep Sea Res. (II Top. Stud. Oceanogr.), 140:268-277. https://doi.org/10.1016/j.dsr2.2017.03.005.

Cárdenas, S., and *D. Lew.* 2016. Factors influencing willingness to donate to marine endangered species recovery in the Galapagos National Park, Ecuador. Front. Mar. Sci., 3:60. https://doi.org/10.3389/fmars.2016.00060.

THEORETICAL

Climate Change Reserach

Clay, P., J. Howard, *D. S. Busch*, *L. Colburn*, A. Himes-Cornell, S. Rumrill, *S. Zador*, and *R. Griffis*. 2020. Ocean and coastal indicators: Understanding and coping with climate change at the land-sea interface. Clim. Chang., 163(4):1773-1793. https://doi.org/10.1007/s10584-020-02940-x.

Commercial Fisheries Economics Research

Wiedenmann, J., and *D. Holland*. 2020. Trade-offs in fishery management objectives when allowing catch limit carry-over between years. ICES J. Mar. Sci., 77(7-8):2825-2839. https://doi.org/10.1093/icesjms/fsaa154.

Other Marine Research

Lew, D., and J. Whitehead. 2020. Attribute non-attendance as an information processing strategy in stated preference choice experiments: origins, current practices, and future directions. Mar. Resour. Econ., 35(3):285-317. https://doi.org/10.1086/709440.

Lew, D., and J. Whitehead. 2020. Attribute non-attendance in choice experiments of marine ecosystem goods and services: special issue introduction. Mar. Resour. Econ., 35(3):195-200. https://doi.org/10.1086/709439.

Sociocultural Fisheries Research

Clay, P., and *L. Colburn*. 2020. A practitioner's handbook for fisheries social impact assessment. NOAA Tech. Memo. NMFS-F/SPO-212, 80 p.

Jones, K., S. Alexander, N. Bennett, L. Bishop, A. Budden, M. Cox, M. Crosas, E. Game, J. Geary, C. Hahn, D. Hardy, J. Johnson, S. Karcher, M. LaFevor, N. Motzer, *P. Pinto da Silva*, J. Pittman, H. Randell, J. Silva, J. Smith, M. Smorul, C. Strasser, C. Strawhacker, A. Stuhl, N. Weber, and D. Winslow. 2018. Qualitative data sharing and re-use for socio-environmental systems research: A synthesis of opportunities, challenges, resources and approaches. National Socio-Environmental Synthesis Center. SESYNC White Paper, 34 p. https://doi.org/10.13016/M2WH2DG59.

Protected Resources Economics Research

Lew, D. 2018. Discounting future payments in stated preference choice experiments. Resource Energy Econ., 54:150-164. https://doi.org/10.1016/j.reseneeco.2018.09.003.

Wallmo, K., K. Bisack, D. Lew, and *D. Squires*, eds. 2016. Protected species economics: Concepts in research and management. Vol. 2, 133 p. Frontiers in Marine Science, Lausanne, Switzerland.

Resources



False albacore fun.
Photo: Paula Prior

UNITED STATES

Federal Agencies

- Office of Science and Technology, NOAA Fisheries | www.fisheries.noaa.gov/about/office-science-and-technology
- Marine Recreational Information Program | www.fisheries.noaa.gov/topic/recreational-fishing-data
- Office of Marine Conservation, Bureau of Oceans and International Environmental and Scientific Affairs, U.S. Department of State | www.state.gov/bureaus-offices/under-secretary-for-economic-growth-energy-and-the-environment/bureau-of-oceans-and-international-environmental-and-scientific-affairs/office-of-marine-conservation/

NORTH PACIFIC

Federal Agencies

- Alaska Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/alaska-fisheries-science-center
- Alaska Regional Office, NOAA Fisheries | www.fisheries.noaa.gov/about/alaska-regional-office
- Alaska Region, U.S. Fish and Wildlife Service | www.fws.gov/alaska/
- District 17, U.S. Coast Guard | www.pacificarea.uscg.mil/Our-Organization/District-17/

State Agencies

- Alaska Department of Fish and Game | www.adfg.state.ak.us

Councils and 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

- Northwest Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/northwest-fisheries-science-center
- West Coast Regional Office, NOAA Fisheries | www.fisheries.noaa.gov/about/west-coast-regional-office
- Southwest Fisheries Science Center | www.fisheries.noaa.gov/about/southwest-fisheries-science-center
- Pacific Region, U.S. Fish and Wildlife Service | www.fws.gov/pacific
- California and Nevada, U.S. Fish and Wildlife Service | www.fws.gov/cno
- District 13, U.S. Coast Guard | www.pacificarea.uscg.mil/Our-Organization/District-13/

State Agencies

- California Department of Fish and Wildlife | www.wildlife.ca.gov
- Oregon Department of Fish and Wildlife | www.dfw.state.or.us
- Washington Department of Fish and Wildlife | http://wdfw.wa.gov/

Councils and 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

- Pacific Islands Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/pacific-islands-fisheries-science-center
- Pacific Islands Regional Office, NOAA Fisheries | www.fisheries.noaa.gov/about/pacific-islands-regional-office
- Pacific Region, U.S. Fish and Wildlife Service | www.fws.gov/pacific
- District 14, U.S. Coast Guard | www.pacificarea.uscg.mil/Our-Organization/District-14/

State Agencies

- Hawai'i Department of Land and Natural Resources | www.dlnr.hawaii.gov/
- Guam Office of the Governor | http://governor.guam.gov/
- Division of Fish and Wildlife, Commonwealth of the Northern Mariana Islands | http://www.dfw.gov.mp/Monument_Page.html

Councils and Commissions

- Western Pacific Fishery Management Council | www.wpcouncil.org

NEW ENGLAND

Federal Agencies

- Northeast Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/northeast-fisheries-science-center
- Greater Atlantic Regional Fisheries Office, NOAA Fisheries | www.fisheries.noaa.gov/about/greater-atlantic-regional-fisheries-office
- Northeast Region, U.S. Fish and Wildlife Service | www.fws.gov/northeast
- District 1, U.S. Coast Guard | www.atlanticarea.uscg.mil/Our-Organization/District-1/

State Agencies

- Maine Department of Marine Resources | www.maine.gov/dmr/
- Rhode Island Department of Environmental Management | www.dem.ri.gov
- Massachusetts Division of Marine Fisheries | www.mass.gov/orgs/division-of-marine-fisheries
- Connecticut Department of Environmental Protection | www.ct.gov/deep/
- New Hampshire Fish and Game Department | www.wildlife.state.nh.us

Councils and Commissions

- New England Fishery Management Council | www.nefmc.org
- Atlantic States Marine Fisheries Commission | www.asmfc.org

MID-ATLANTIC

Federal Agencies

- Northeast Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/northeast-fisheries-science-center
- Greater Atlantic Regional Fisheries Office, NOAA Fisheries | www.fisheries.noaa.gov/about/greater-atlantic-regional-fisheries-office
- Northeast Region, U.S. Fish and Wildlife Service | www.fws.gov/northeast
- District 5, U.S. Coast Guard | www.atlanticarea.uscg.mil/Our-Organization/District-5/

State Agencies

- Delaware Division of Fish and Wildlife | https://dnrec.alpha.delaware.gov/fish-wildlife/
- Pennsylvania Fish and Boat Commission | www.fishandboat.com/
- Fisheries and Boating Service, Maryland Department of Natural Resources | www.dnr.state.md.us/fisheries
- New Jersey Division of Fish and Wildlife | www.state.nj.us/dep/fgw
- Marine Resources Councils and Boards Bureau of Marine Resources, New York Department of Environmental Conservation | www.dec.ny.gov/outdoor/568.html
- Virginia Marine Resources Commission | www.dnr.maryland.gov/fisheries

Councils and Commissions

- Mid-Atlantic Fishery Management Council | www.mafmc.org
- Atlantic States Marine Fisheries Commission | www.asmfc.org

SOUTH ATLANTIC

Federal Agencies

- Southeast Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/southeast-fisheries-science-center
- Southeast Regional Office, NOAA Fisheries | www.fisheries.noaa.gov/about/southeast-regional-office
- Southeast Region, U.S. Fish and Wildlife Service | www.fws.gov/southeast
- Southwest Region, U.S. Fish and Wildlife Service | www.fws.gov/southwest

- District 7, U.S. Coast Guard | www.atlanticarea.uscg.mil/Our-Organization/District-7/

State Agencies

- Florida Fish and Wildlife Conservation Commission | www.myfwc.com/
- Coastal Resources Division, Georgia Department of Natural Resources | www.coastalgadnr.org/
- Division of Marine Fisheries, North Carolina Department of Environment and Natural Resources | http://portal.ncdenr.org/web/mf/
- Marine Resources Division, South Carolina Department of Natural Resources | www.dnr.sc.gov

Councils and Commissions

- South Atlantic Fishery Management Council | www.safmc.net
- Atlantic States Marine Fisheries Commission | www.asmfc.org

GULF OF MEXICO

Federal Agencies

- Southeast Fisheries Science Center, NOAA Fisheries | www.fisheries.noaa.gov/about/southeast-fisheries-science-center
- Southeast Regional Office, NOAA Fisheries | www.fisheries.noaa.gov/about/southeast-regional-office
- Southeast Region, U.S. Fish and Wildlife Service | www.fws.gov/southeast
- Southwest Region, U.S. Fish and Wildlife Service | www.fws.gov/southwest
- District 8, U.S. Coast Guard | www.atlanticarea.uscg.mil/Our-Organization/District-8/

State Agencies

- Florida Fish and Wildlife Conservation Commission | www.myfwc.com/
- Marine Resources Division, Alabama Department of Conservation and Natural Resources | www.outdooralabama.com
- Mississippi Department of Marine Resources | www.dmr.ms.gov/
- Louisiana Department of Wildlife and Fisheries | www.wlf.louisiana.gov/
- Texas Parks and Wildlife Department | www.tpwd.texas.gov/

Councils and 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 | https://naafe.oregonstate.edu/
- International Institute of Fisheries Economics and Trade | https://iifet.oregonstate.edu/

OTHER ORGANIZATIONS AND INFORMATION

- Organisation for Economic Co-operation and Development | www.oecd.org/
- Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations | www.fao.org/fishery/capture/en
- Marine Stewardship Council | www.msc.org

Glossary



Robbie's in Islamorada, Florida.
Photo: NOAA Fisheries/Jacqui Fenner

TERMS AND DEFINITIONS

Angler[1] — A person catching fish with no intent to sell, including people releasing the catch. Also known as a recreational fisherman.

Annual Payroll[2] — 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 non-employer businesses, such as payments received as independent agents and contractors. The composition of non-employer receipts may differ from receipts data published for employer establishments. For example, for wholesale agents and brokers without payroll (non-employers), the receipts item contains commissions or earnings. In contrast, for wholesale agents and brokers with payroll (employers), the sales and receipts item published in the Economic Census represents the value of the goods involved in the transactions.

Buyback Program — A management tool available to fishery managers intended to ease fishing-related pressure on marine resources. Fishing vessels are purchased by the government or by the fishing industry itself. Then they are removed from a specific fishery where fish stocks or stock complexes are considered overfished or subject to overfishing.

Bycatch[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; 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[4] — This is a generic term used to describe a fishery management program that allocates a specific portion of the total fishery catch to individuals, cooperatives, communities, or other entities, including sectors. The term encompasses more specific programs defined in legislation such as Limited Access Privilege Programs (LAPPs) and Individual Fishing Quotas (IFQs). Note that a catch share allocated to a sector is different from a general sectoral allocation or distribution to an entire segment of a fishery (such as a recreational sector allocation or a longline gear sector allocation). The two differ because the recipient of the catch share is responsible for terminating fishing activity when their specific share is reached.

Coastal County[5] — Counties with borders that are within 25 miles of the coast are considered coastal. All counties in Rhode Island, Connecticut, Delaware, and Florida are considered coastal.

Coastal County Angler — For this report, a coastal county angler refers to a recreational fisherman who lives within a given state and within a coastal county of that state.

Commercial Fisheries — In this report, commercial fisheries refer to fishing operations that sell their catch for profit. The term does not include subsistence fishermen or saltwater anglers who fish for sport. It also excludes the for-hire sector, which earns its revenue from selling recreational fishing trips to saltwater anglers. The commercial fisheries section reports on economic impacts, landings revenue, landings, and ex-vessel prices of key species/species groups.

Commercial Fishing Location Quotient (CFLQ)[6] — For this report, the CFLQ is calculated as the ratio of a state's distribution of employment in commercial fishing industries compared with the distribution of commercial fishing industries in the U.S. The CFLQ is calculated using the "Location Quotient Calculator" provided by the Bureau of Labor Statistics, U.S. Department of Labor.

Community Development Quota Program (CDQ)[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 percent of the TAC in the pollock, halibut, sablefish, crab and groundfish fisheries is allocated to the CDQ Program.

Dedicated Access Privileges (DAPs)[7] — As defined by the U.S. Commission on Ocean Policy, a DAP program assigns an individual or other entity access to a predetermined 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 is often synonymous with Limited Access Privilege Programs (see "Limited Access Privilege Program") and are sometimes referred to as rights-based management. However, "rights-based management" implies granting an individual the "right" to fish. Apart from 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[8] — 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 (e.g., tackle, rods, reels, line); durable goods (e.g., motor boats and accessories, non-motorized boats, boating electronics, mooring, boat storage, boat insurance, vehicles, second homes); and angling accessories and multi-purpose items (e.g., magazines, club dues, saltwater angling-specific clothing, camping gear).

Ecolabel[9] — In fisheries, ecolabelling schemes entitle a fishery product to bear a distinctive logo or statement that certifies that the fish has been harvested in compliance with specified conservation and sustainability standards. The logo or statement is intended to facilitate informed decisions by purchasers whose choices may promote and stimulate the sustainable use of fishery resources.

Economic Impact Model[8,10,11] — Economic impact models capture how sales in a sector generate economic impacts directly in the sector in which the sale was made. The sales then ripple throughout the state and national economies as each dollar spent generates additional sales by other firms and consumers. The NOAA Fisheries Commercial Fishing & Seafood Industry Input/Output Model uses an IMPLAN platform to estimate the economic impacts associated with the harvesting of fish by U.S. commercial fishermen and other major components of the U.S. seafood industry. As used here, the term fish refers to the entire range of finfish, shellfish, and other life (that is, sea urchins, seaweed, kelp and worms) from marine and freshwaters that are included in the landings data maintained by the National Marine Fisheries Service. The NOAA Fisheries Recreational Economic Impact Model, which also uses an IMPLAN platform, estimates the economic impacts generated by expenditures made by marine (saltwater) anglers.

Economic Impacts[8,10,11] — For this report, the economic impacts of the commercial fishing sector and seafood industry refer to the employment (full-time and part-time jobs), personal income, and output (sales by U.S. businesses) generated by the commercial harvest sector and other major components of the U.S. seafood industry. These components include processors and dealers, wholesalers and distributors, grocers, and restaurants. Economic impacts of recreational fishing activities refer to the amount of sales generated, the number of jobs supported, labor income, and the contribution to gross domestic product (GDP) by state (also known as value-added impacts) from expenditures related to recreational fishing.

Effort — For this report, effort refers to the number of angler trips taken by recreational fishermen (anglers). An angler trip is defined as any part of a single day (24 hours) of marine recreational fishing.

Employee Compensation[12] — 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[13] — Businesses with payroll and paid employees with a single physical location at which business is conducted or services or industrial operations are performed. An employee establishment is not necessarily identical to a company or enterprise, which may consist of one or more establishments. When two or more activities are carried on at a single location under a single ownership, all activities generally are grouped together as a single establishment. The entire establishment is classified on the basis of its major activity, and all data are included in that classification.

Employment Impacts — Employment is specified on the basis of full-time and part-time jobs supported directly or indirectly by the purchases made by anglers or by the commercial harvest and seafood sector economic activity. This impact is measured in the number of full and part-time jobs.

Endangered Species[14] — As defined by the Endangered Species Act (ESA), an endangered species is any species which is in danger of extinction throughout all or a significant portion of its range. See also "Threatened Species."

Endangered Species Act (ESA)[14] — 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.

Exclusive Economic Zone (EEZ)[1] — The EEZ is the area that extends 200 nautical miles from the seaward boundary of the coastal states. The seaward boundary for most states is 3 nautical miles with the exceptions of Texas, Puerto Rico, and the Gulf Coast of Florida, which is 9 nautical miles. The U.S. claims and exercises sovereign rights and exclusive fishery management authority over all fish and continental shelf resources through this 200-nautical-mile boundary.

Expenditures[8,11] — 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.

Fish Stock[1] — A fish stock refers to the living resources in the community or population from which catches are taken in a fishery. The term "fish stock" usually implies that the particular population is more or less isolated from other stocks of the same species and hence self-sustaining. In a particular fishery, the fish stock may be one or several species of fish. Here, it also includes commercial invertebrates and plants.

Fishery Management Council (FMC) or Regional Fishery Management Council[15] — 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)[15] — 1. A document prepared under supervision of the appropriate fishery management council (FMC) for the management of stocks of fish judged to require management. The plan generally must 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[15] — A market-based fisheries management tool where access to fisheries resources is limited to a specific group of fishermen. See also "Catch Share Program."

Fishing Day — For this report, a fishing day refers to a partial or full day spent in recreational fishing. This term is used in the Alaska recreational fishing tables.

Fishing Effort[1] — 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 fishing trips made by recreational anglers.

Fishing Mode — For this report, fishing mode refers to the type of recreational fishing a recreational fisherman (angler) engages in, such as fishing from shore, a private or rental boat, or a for-hire boat.

Fishing Trip — For this report, a fishing trip is defined as an angler trip. An angler trip is defined as any part of a single day (24 hours) of marine recreational fishing. 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 recreational fishermen (anglers) on a party (also referred to as a head boat) or charter boat. In the Gulf and South Atlantic, for-hire mode does not include head boats.

Gross Domestic Product (GDP) by State or Gross State Product (GSP)[12] — 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 or weight of fish caught and kept from an area over a period of time. Note that landings, catch, and harvest are different. However, in Hawai`i and the Gulf states, recreational harvest includes fish thrown back dead. See also "Catch" and "Release."

Income Impacts[8,10,11] — Income impacts include personal income (wages and salaries) and proprietors' income (income from self-employment).

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 Fishing Quota."

Industry Sector — For this report, fishing- and marine-related industries were combined into industry sectors. Two industry sectors were included in this report: 1) seafood sales and processing; and 2) transport, support, and marine operations. Fishing and marine-related industries were chosen from the County Business Patterns Data Series based on data availability and perceived relevance to fishing or marine activities. These industries were then combined into one of these two industry sectors.

Key Species or Species Groups — For this report, up to 10 species or species groups were chosen as "key" species or species groups due to their regional importance to commercial and recreational fisheries. The regional importance of these key species or species groups was chosen based on their economic and/or historical or cultural significance to a state or region.

Landing Revenues — The dollar value of commercial fisheries landings.

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.

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 to limit entry into a fishery.

Limited Access Privilege Program (LAPP) or Limited Access Privilege System[15] — As defined in the Magnuson-Stevens Act, LAPPs limit participation in a fishery to those satisfying certain eligibility criteria or requirements contained in a fishery management plan (FMP) or associated regulation. A limited access privilege is a federal permit, issued as part of a limited access system, to harvest a quantity of fish expressed by a unit or units representing a portion of the total allowable catch (TAC) of the fishery that may be received or held for exclusive use by a person. A LAPP includes an individual fishing quota (IFQ) or individual tradable quota (ITQ) but does not include community development quotas (CDQs). LAPPs are sometimes known as Dedicated Access Privileges (DAPs). However, unlike LAPPs, DAPs generally encompass CDQs as well as IFQs (see "Dedicated Access Privileges"). LAPPs are a type of catch share program. See also "Catch Share Program."

Limited Entry Program — Also known as a license limitation program; see "License Limitation Program."

Location Quotient[6] — 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 metropolitan area. The reference or base industry is usually the all-industry total. LQs also allow areas to be easily compared with each other. If an LQ is equal to 1, then the industry has the same share of its area employment as it does in the reference area. An LQ greater than 1 indicates an industry with a greater share of the local area employment than in the reference area.

For example (assuming the U.S. as the reference area), Las Vegas will have an LQ greater than 1 in the Leisure and Hospitality industry, because this industry makes up a larger share of the Las Vegas employment total than it does for the country as a whole. LQs are calculated by first dividing local industry employment by the all-industry total of local employment. Next, reference area industry employment is divided by the all-industry total for the reference area. Finally, the local ratio is divided by the reference area ratio.

Magnuson-Stevens Fishery Conservation and Management Act or Magnuson-Stevens Act (MSA)[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[15] — Market-based management is an umbrella term that encompasses approaches that provide economic incentives to protect fisheries from overharvest. These approaches contrast with conventional fisheries management approaches, such as buyback programs and license limitation programs (see "Buyback Program" and "License Limitation Program"). One example of a market-based management approach for fisheries is a limited access privilege program (LAPP; see "Limited Access Privilege Program") that includes an individual fishing quota. A LAPP provides individual fishermen an exclusive, market-based share of a harvest quota or total allowable catch (TAC) of a fishery.

Marine Coastal County — For this report, a marine coastal county is a coastal county that is adjacent to an ocean coastline. See also "Coastal County."

Marine Economy — For this report, the marine economy refers to the economic activity generated by fishing- and marine-related industries located in a coastal state. Fishing- and marine-related industries were chosen from industries defined in the County Business Patterns Data Series provided by the U.S. Census Bureau. Industries listed in this report were chosen based on that industry's direct contribution to fishing and marine activities, and whether data were available for that industry. Information such as the number of establishments, number of employees, and annual payroll for these fishing and marine-related industries was used to determine their relative levels of economic activity in a state. These industries were categorized into one of two industry sectors: 1) seafood sales and processing; and 2) transport, support, and marine operations. See also "Industry Sector."

Non-Coastal County Angler — For this report, a non-coastal county angler refers to a recreational fisherman who lives within a given state but not in a coastal county of that state.

Non-Employer Firms[3] — A non-employer 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 non-employers are self-employed individuals operating very small unincorporated businesses that may or may not be the owner's principal source of income.

Non-Resident Angler — For this report, a non-resident in the U.S. table refers to a recreational fisherman (angler) who resides outside the U.S.; a non-resident in the regional and state tables refers to an angler who did not reside in the state where they fished.

Out-of-State Angler — For this report, an out-of-state angler is a recreational fisherman (angler) who does not reside within a given coastal state.

Overcapacity[16] — When the harvesting capability within a given fishery exceeds the level of harvest allowed for that fishery.

Overcapitalization[9] — 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 past which its abundance is considered "too low" to ensure safe reproduction. In many fisheries, the term is used when biomass has been estimated to be below a biological reference point that is used as the signpost defining an "overfished condition."

Overfishing[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 that is protected by either the Endangered Species Act (ESA) or the Marine Mammal Protection Act (MMPA), and that is under the jurisdiction of NOAA Fisheries. This total includes all threatened, endangered, and candidate species, as well as all cetaceans and pinnipeds, excluding walruses.

Recreational Fisheries — Recreational fishing refers to fishing for leisure rather than to sell fish (commercial fishing) or for subsistence. The economic contributions or impacts of recreational fishing activities in the United States is based on spending by recreational anglers.

Regional Fishery Management Council or Fishery Management Council (FMC)[15] — The Magnuson-Stevens Act established eight Regional FMCs around the United States. Each council consists of voting and non-voting members who represent various federal, state, and tribal governments; fishing industry groups (commercial and/or recreational); and non-fishing groups (such as environmental organizations and academic institutions). Each council is tasked with creating fishery management plans for important fisheries within their regions.

Release — For this report, release refers to the number of individual fish caught by a recreational fisherman (angler) that are then returned to the sea (dead or alive). In Hawai`i and the Atlantic and Gulf states, release does not include fish returned to the sea that are dead. See also "Catch" and "Harvest."

Resident — For this report, a resident in the U.S. table refers to a recreational fisherman (angler) who resides inside the United States; a resident in the regional and state tables refers to an angler who resides in the state where they fished.

Sales Impacts[8,10,11] — Sales impacts refer to the gross value of all sales by regional businesses affected by an activity, such as recreational or commercial fishing. For example, it includes both the direct sales made by the angler (commercial fisherman) and sales made between businesses and households resulting from that original sale by the angler (commercial fisherman).

Sector Allocation Program[17] — A fisheries management tool where a group of fishermen are allocated a quota or share of a total allowable catch (TAC), in accordance with an approved plan. This program is considered a type of catch share program. See also "Catch Share Program."

Species[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 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[14] — As defined by the Endangered Species Act (ESA), a threatened species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. See also "Endangered Species."

Total Annual Durable Expenditures — Total annual durable expenditures were estimated by multiplying mean durable expenditures by the estimated annual number of adult participants at the state level or the national level and adjusted by the Consumer Price Index to the current year.

Total Annual Trip Expenditures — Total annual trip expenditures are estimated at the state level by multiplying mean trip expenditures by the estimated number of adult trips in each trip mode (for-hire, private boat, and shore) and adjusted by the Consumer Price Index to the current year. The trip expenditures at the national level is the sum of state trip expenditures in each mode.

Trip Expenditures — For this report, trip expenditures refer to expenses incurred by recreational fishermen (anglers) on a fishing trip. Trip expenditures include expenditures made by 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 United States).

Value-Added Impacts[8,10,11] — Value-Added impacts refer to the contribution made to the gross domestic product in a region from commercial fishing landings and recreational fishing expenditures.

GLOSSARY NOTES

[1] Blackhart, K., D. G. Stanton, and M. Shimada (eds.). 2005. NOAA Fisheries Glossary, Revised edition, June 2006. NOAA Tech. Memo. NMFS-F/SPO-69, 61 p. Available at: https://spo.nmfs.noaa.gov/content/tech-memo/noaa-fisheries-glossary [accessed March 26, 2020].

[2] U.S. Census Bureau. County Business Patterns (CBP). Available at: https://www.census.gov/programs-surveys/cbp.html [accessed April 1, 2020].

[3] U.S. Census Bureau. Nonemployer Statistics. Available at: https://www.census.gov/programs-surveys/nonemployer-statistics.html [accessed April 1, 2020].

[4] NOAA Fisheries Policy Office. NOAA Catch Share Policy. Available at: https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares [accessed March 31, 2020].

[5] NOAA Fisheries. Recreational Fishing Data Glossary. Available at: https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-glossary [accessed March 31, 2020].

[6] Bureau of Labor Statistics. QCEW Location Quotient Details. Available at: https://www.bls.gov/cew/about-data/location-quotients-explained.htm [accessed April 1, 2020].

[7] U.S. Commission on Ocean Policy. An Ocean Blueprint for the 21st Century, Final Report. 2004. Available at: https://govinfo.library.unt.edu/oceancommission/documents/full_color_rpt/000_ocean_full_report.pdf [accessed April 1, 2020].

[8] Lovell, S. J., J. Hilger, S. Steinback, and C. Hutt. 2016. The Economic Contribution of Marine Angler Expenditures on Durable Goods in the United States, 2014. . NOAA Tech. Memo. NMFS-F/SPO-165, 72 p. Available at: https://spo.nmfs.noaa.gov/content/tech-memo/economic-contribution-marine-angler-expenditures-durable-goods-united-states-2014 [accessed March 12, 2020].

[9] FAO Fisheries Department. Fisheries Term Portal. Available at: http://www.fao.org/faoterm/collection/fisheries/en/ [accessed April 1, 2020].

[10] Kirkley, J. The NMFS Commercial Fishing & Seafood Industry Input/Output Model (CFSI I/O Model). Available at: https://pdfs.semanticscholar.org/8600/3a0004135375f1f13a888aca5e2eaf4fffd8.pdf?_ga=2.158730802.982576641.1585688544-2034208116.1585688544 [accessed April 6, 2020].

[11] Lovell, S. J., J. Hilger, N. A. Olsen, and S. Steinback. 2020. The Economic Contribution of Marine Angler Expenditures on Fishing Trips in the United States, 2017. NOAA Tech. Memo. NMFS-F/SPO-201, 80p. Available at: https://spo.nmfs.noaa.gov/content/tech-memo/economic-contribution-marine-angler-expenditures-fishing-trips-united-states-2017 [accessed March 27, 2020].

[12] Bureau of Economic Analysis. Regional Economic Accounts: About Regional. Available at: https://www.bea.gov/resources/learning-center/about-regional [accessed April 1, 2020].

[13] U.S. Census Bureau. About the Economic Census. Available at: https://www.census.gov/programs-surveys/economic-census/about.html [accessed April 1, 2020].

[14] NOAA Fisheries. Endangered Species Act. Available at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/endangered-species-act [accessed March 31, 2020].

[15] NOAA Fisheries. Magnuson-Stevens Fishery Conservation and Management Act. Available at: https://www.fisheries.noaa.gov/resource/document/magnuson-stevens-fishery-conservation-and-management-act [accessed April 1, 2020].

[16] NOAA Fisheries. Status of U.S. Fisheries. Available at: https://www.fisheries.noaa.gov/national/population-assessments/status-us-fisheries [accessed March 31, 2020.]

[17] Terry, J., J. Walden, and J. Kirkley. 2008. National Assessment of Excess Harvesting Capacity in Federally Managed Commercial Fisheries NOAA Tech. Memo. NMFS-F/SPO-93, 366 p. Available at: https://spo.nmfs.noaa.gov/content/tech-memo/national-assessment-excess-harvesting-capacity-federally-managed-commercial [accessed March 31, 2020].



Open ocean.
Photo: NOAA Fisheries/Jacqui Fenner