

## 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, also known as the Magnuson-Stevens Act (P.L. 94-265 as amended by P.L. 109-479). NOAA Fisheries or the National Marine Fisheries Service (NMFS) is the federal agency delegated authority from the Secretary of Commerce to oversee fishing activities in federal waters. Federal fisheries are generally defined as fishing activities that are prosecuted between 3 and 200 nautical miles from the coastline. Generally, individual states retain management authority over fishing activities within 3 nautical miles of their coasts.

Nationwide, there are 44 fishery management plans<sup>1</sup> that provide a framework for managing the harvest of 230 major fish stocks or stock complexes that comprise 90% of the commercial harvest. These fishery management plans (FMPs) are developed by Regional Fishery Management Councils (FMCs) in each of eight regions nationwide: the North Pacific, Western Pacific, Pacific, New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, and Caribbean Regions. Once a FMP is developed, it must be approved by the Secretary of Commerce in consultation with NOAA Fisheries before it is implemented and enforced.

### Regional Fishery Management Councils

1. North Pacific Fishery Management Council
2. Western Pacific Fishery Management Council
3. Pacific Fishery Management Council
4. New England Fishery Management Council
5. Mid-Atlantic Fishery Management Council
6. South Atlantic Fishery Management Council
7. Gulf of Mexico Fishery Management Council
8. Caribbean Fishery Management Council

Of the 230 major fish stocks and stock complexes currently managed under a FMP, the overfished status of 176 stocks or stock complexes and the overfishing status of 190 stocks or stock complexes is known. Currently, 43 stocks or stock complexes are categorized as overfished and 37 are categorized as subject to overfishing.

Less is known about the 292 minor stocks or stock complexes. The overfished status of 27 of these stocks or stock complexes is known and three of these are currently considered overfished. The overfishing status of 60 of the 292 minor stocks or stock complexes is known and one of these (parrotfishes) is currently considered to be subject to overfishing.

<sup>1</sup>Fishery management plans and fishery ecosystem plans for each region covered in this report are listed in their respective sections. The Caribbean region and its four FMPs are not currently included in this report. These FMPs are developed by the Caribbean Fishery Management Council (San Juan, Puerto Rico). In addition, the Atlantic highly migratory species FMP is not listed in this report. This FMP is developed by the Office of Sustainable Fisheries at NOAA Fisheries Headquarters (Silver Spring, MD).

## Transboundary and International Fisheries

NOAA Fisheries is also actively involved in negotiating conservation measures and fishery allocations for fisheries conducted in areas where the Exclusive Economic Zone (EEZ) of the U.S. overlaps with other nations (transboundary areas), and in areas beyond the U.S. EEZ (international waters or the high seas). The Gulf of Alaska and the Gulf of Maine are examples of transboundary areas. An area in the Bering Sea outside of EEZs of Canada, Japan, and Russia, called the Donut Hole, is an example of international waters. Loss of sea ice opens will create both transboundary areas and international waters in the Arctic.

### Regional Fisheries Management Organizations

1. International Convention for the Conservation of Atlantic Tunas (Basic Instrument for the International Commission for the Conservation of Atlantic Tunas – ICCAT)
2. Convention for the Conservation of Salmon in the North Atlantic Ocean (Basic Instrument for the North Atlantic Salmon Conservation Organization – NASCO)
3. Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (Basic Instrument for the Northwest Atlantic Fisheries Organization – NAFO)
4. Convention for the Establishment of an Inter-American Tropical Tuna Commission (IATTC)
5. Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean (Basic Instrument for the North Pacific Anadromous Fish Commission – NPAFC)
6. Western and Central Pacific Fisheries Convention (WCPFC)
7. Asia-Pacific Fishery Commission (APFIC)
8. Fishery Committee for the Eastern Central Atlantic (CECAF)

Regional Fishery Management Organizations (RFMOs) are multinational organizations with interests in transboundary and international fish stocks and associated fishing activities. NOAA Fisheries is party to 8 RFMOs globally.<sup>2</sup> The goal of these RFMOs is to adopt measures for the conservation and coordinated management of target species such as bluefin tuna. RFMOs also provide 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 non-target fish species. The commitment to conserving and protecting all species associated with, or affected by, fishing activities is outlined in the Food and Agricultural Organization's (FAO's) Code of Conduct for Responsible Fisheries established in 1995.

Another issue of particular concern for NOAA Fisheries is the problem of illegal, unreported, and unregulated (IUU) fishing activities in international waters. The RFMOs report estimates that in 2008, there were 42 vessels flying the national flags of 14 nations participating in IUU fishing activities.<sup>3</sup> NOAA Fisheries is actively working bilaterally and multilaterally with other nations on the adoption of strategies to reduce the level of IUU fishing around the world.<sup>4</sup>

<sup>2</sup>For more detailed information about international agreements in relation to NOAA Fisheries, please go to: [http://www.nmfs.noaa.gov/ia/docs/2009\\_International\\_agreement\\_s.pdf](http://www.nmfs.noaa.gov/ia/docs/2009_International_agreement_s.pdf)

<sup>3</sup>An additional 51 vessels with unknown country affiliation also participate in IUU fishing activities.

<sup>4</sup>For more information about NOAA Fisheries' response to IUU fishing activities, please see *Implementation of Title IV of the*

**Threatened and Endangered Species**

NOAA Fisheries is also the lead agency for the conservation and protection of over 68 fish and non-fish species which fall within the purview of the Endangered Species Act (ESA). Status determinations related to the viability and health of these populations have been made. The status of these populations have been determined as “threatened” or “endangered,” and in one case, “recovered.”

Currently, there are 34 marine and anadromous fish species and subspecies<sup>5</sup> that are protected under the ESA. These species include: Atlantic salmon, coho salmon, green sturgeon, shortnose sturgeon, smalltooth sawfish, steelhead trout, and totoaba. Many of these species are further delineated into “distinct population segments” or “evolutionarily significant units” that are based on genetic similarities within geographically- or reproductively-isolated populations.

In addition to threatened and endangered fish species, the National Marine Fisheries Service is also involved in the conservation and protection of ESA-listed non-fish species. Marine mammals such as whales, dolphins, and seals, as well as species of sea turtles, marine invertebrates, and a marine plant are listed. There are currently 12 “candidate species” for listing and 2 species proposed for listing.

In 1970, the Eastern North Pacific gray whale was listed under the ESA but has since made a comeback and was considered “recovered” in 1994. The Caribbean monk seal, listed in 1967, was delisted in 2008. This species is considered to be extinct.

**Endangered and Threatened Species under NMFS’ Jurisdiction**

Species Group	Number of Species
Marine and Anadromous Fish	34
Marine Mammals: Whales	12
Marine Mammals: Dolphins	2
Marine Mammals: Porpoise	1
Marine Mammals: Seals	4
Marine Mammals: Sea Lions	2
Sea Turtles	8
Marine Invertebrates	4
Marine Plants	1
Total	68

In addition to endangered and threatened species under the Endangered Species Act, the NOAA Fisheries is also responsible for providing protection for marine mammals under the Marine Mammal Protection Act. Passed in 1972, Congress recognized that protecting populations of marine mammals contributes to the overall health of marine ecosystems.

*Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006* available at: [http://www.nmfs.noaa.gov/msa2007/docs/msra\\_biennial\\_report\\_011309.pdf](http://www.nmfs.noaa.gov/msa2007/docs/msra_biennial_report_011309.pdf)

<sup>5</sup>Subspecies includes “distinct population segments” and “evolutionarily significant units,” terms defined under the ESA.

NOAA Fisheries is responsible for preventing the harrassment, capture, or killing of whales, dolphins, porpoises, seals, and sea lions.<sup>6</sup> However, exceptions are made for scientific research, unintended interactions with commercial fisheries, subsistence and traditional uses by Alaska natives, and public display at some aquaria.

**Essential Fish Habitats**

Sustainable commercial and recreational fisheries depend on healthy habitats. These habitats include rivers, estuaries, and the open ocean where marine and anadromous species feed, grow, and reproduce. Consideration of these habitat areas are part of an ecosystem-based management approach for managing fisheries in a more sustainable and holistic manner. Since 1996, federal fishery management plans are required to identify and describe essential fish habitat (EFH) for all federally-managed species.<sup>7</sup> Habitat areas that are necessary for a fish species’ growth, reproduction, and development is considered EFH. To the extent practicable, NOAA Fisheries and the Councils must minimize adverse effects to EFH caused by fishing activities.

Though not required, habitat areas of particular concern (HAPC) can be identified. HAPCs are a subset of EFH and are particularly vulnerable or ecologically-important. The purpose of HAPCs is to help focus EFH conservation efforts. To date, approximately 100 HAPCs have been designated including specific coral, seamount, and spawning areas.

A recent effort undertaken by the NOAA Fisheries Office of Science and Technology is to create a Habitat Assessment Improvement Plan<sup>8</sup> to advance NOAA Fisheries’ ability to identify EFH and HAPCs and to provide information needed to assess impacts to EFH.

**Catch Share Programs**

A variety of market-based tools are available to fishery managers. NOAA Fisheries is currently implementing several different types of catch share programs such as limited access privilege programs (LAPPs) which include individual fishing quota programs (IFQs), regional fishery associations, and fishing community quotas;<sup>9</sup> community development quota programs (CDQs); fishing cooperatives; and 4) sector allocation programs.<sup>10</sup> In 2009, NOAA formed a catch shares task force and released a draft catch shares policy to encourage the development of well-designed catch share programs to help rebuild fisheries and sustain fishermen, communities and vibrant working waterfronts.

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

<sup>7</sup>The 1996 reauthorization of the Magnuson-Stevens Fishery-Conservation and Management Act included this requirement.

<sup>8</sup>The Habitat Assessment Improvement Plan will be available: <http://www.st.nmfs.noaa.gov/>

<sup>9</sup>See Section 303(A) of the Magnuson-Stevens Act for more information.

<sup>10</sup>For more information about LAPPs and other catch share programs, please see *Excess Harvesting Capacity in U.S. Fisheries: A Report to Congress* available at: [www.nmfs.noaa.gov/msa2007/docs/042808\\_312\\_b\\_6\\_report.pdf](http://www.nmfs.noaa.gov/msa2007/docs/042808_312_b_6_report.pdf) and *National Assessment of Excess Harvesting Capacity in Federally Managed Commercial Fisheries* available at: <http://spo.nmfs.noaa.gov/tm/spo93.pdf>.

With many catch share programs, the assigned harvest privileges can be used or transferred (sold or leased) to those who can use them more beneficially. In contrast, the two sector allocation programs currently in place for the Northeast multispecies fishery do not assign harvest privileges that can be sold or leased by individual fishermen. Instead, a group of vessel permit holders voluntarily agree to adhere to fishing restrictions in exchange for the opportunity to catch a portion of the total catch allocated to the fishing industry. A sector could, however, assign shares of its allocation to individual fishermen and allow transfers among its members or potentially to another sector. Some of the sector allocation programs that are being developed for this fishery are expected to include some of these features.<sup>11</sup>

**Existing LAPPs and other Catch Share Programs (2007)**

Region	Program	First Year	Ex-vessel Value (\$ millions)
Mid-Atlantic	Surfclam and ocean quahog IFQ	1990	49.0
South Atlantic	Wreckfish IFQ	1992	0.3
North Pacific	Western Alaska CDQ	1992	68.0
North Pacific	Pacific halibut and sablefish IFQ	1995	237.0
Pacific	Pacific whiting catcher/processor cooperative	1997	21.8
North Pacific	Bering Sea (BS) pollock cooperative	1999	266.0
Pacific	Sablefish permit stacking program	2001	6.4
North Pacific	AK weathervane scallop cooperative	2001	1.0
New England	Georges Bank hook gear sector	2004	0.6
North Pacific	Bering Sea king and Tanner crab; IFQ and cooperative	2005	65.0
New England	Georges Bank cod fixed gear sector	2007	0.9
Gulf of Mexico	Gulf of Mexico red snapper IFQ	2007	9.0
North Pacific	Central Gulf of Alaska rockfish pilot sector program	2007	8.5
North Pacific	BS groundfish (non-pollock) trawl catcher/processor cooperative	2008	120.6
Mid-Atlantic	Golden Tilefish	2009	
Gulf of Mexico	Grouper and tilefish	2010	

Nationwide, there are 16 catch share programs currently in operation in six different regions.<sup>12</sup> The total ex-vessel value of these fisheries was greater than \$854 million in 2007, 21% of the total ex-vessel value for all U.S. commercial fisheries.

<sup>11</sup>Proposed changes to the existing sector-based management program for the Northeast multispecies fishery would expand the number of sectors from 2 to 19.

<sup>12</sup>Currently, only the Western Pacific and Caribbean regions do not have a LAPP or another catch share program in place.

In addition to these existing programs, there are other catch share programs or groups of programs in development: the Atlantic sea scallops general category vessel program (New England); 17 Northeast multispecies sector allocation programs (New England); and West Coast trawl groundfish (Pacific).

**U.S. Fisheries with MSC Certification**

Region	Fishery	Certified
North Pacific	Alaskan salmon	Sept 2000; Nov 2007
North Pacific	Bering Sea/Aleutian Islands (BSAI) pollock	Feb 2005
North Pacific	Gulf of Alaska (GOA) pollock	April 2005; Jan 2009
North Pacific	BSAI Pacific cod	Feb 2006
North Pacific	Pacific halibut	April 2006
North Pacific	Sablefish	May 2006
Pacific	Pacific albacore tuna - north (American Albacore Fishing Association (AAFA))	Aug 2007
Pacific	Pacific albacore tuna - south (AAFA)	Aug 2007
Pacific	Oregon pink shrimp	Dec 2007
Mid-Atlantic	Atlantic deep sea red crab	Sep 2009
Pacific	Pacific hake mid water trawl	Oct 2009
North Pacific	GOA Alaska Pacific cod	Jan 2010

Ecolabels are another market-based tool available to improve fisheries management. An ecolabeling program entitles a fishery product to bear a distinctive logo or statement which certifies that the fishery resource was harvested in compliance with specified conservation and sustainability standards. This ecolabel is intended to inform the consumer or purchaser of the fishery product of this compliance. It allows the consumer to potentially influence the sustainable harvest of fishery resources through the purchase of such ecolabeled seafood products.

The Marine Stewardship Council (MSC) has one of the most recognizable ecolabeling programs in the world. There are currently 63 fisheries worldwide that meet MSC sustainability standards,<sup>13</sup> fourteen of which are U.S. fisheries.

**Other Market-based Management Tools**

Vessel or permit buyback programs are another market-based tool used by fishery managers. Often, the intent of a buyback program is to ease fishing-related pressure on marine resources by limiting fishing effort. Under these programs, fishing vessels or permits are purchased by the government to permanently decrease the number of participants in the fishery. Although NOAA Fisheries does not view buybacks as an effective stand-alone management tool, they may play a helpful role in reducing overcapacity in a fishery. To date, there have been ten buyback

<sup>13</sup>More information about the Marine Stewardship Council and its certification process is available at: <http://www.msc.org/track-a-fishery/certified>.

programs instituted nationwide. The cost of seven<sup>14</sup> of these buyback programs totaled of \$397 million. Eighty-five percent of this total cost was funded by loans from the Federal Government that will be repaid by the commercial fishing industry.

Buyback Programs in the U.S. (1995-2008)

Program	Year	Buyback amount (\$ millions)	Govt funding (\$ millions)
Northwest Pacific salmon disaster	1994 1995 1998	NA	NA
Northeast multispecies	1995 1996 2002	1.9 22.5 10.0	1.9 22.5 10.0
Bering Sea/ Aleutian Islands (BSAI) pollock	1998	90.0	15.0
Pacific Coast groundfish	2003	45.7	10.0
BSAI crab	2004	97.4	NA
BSAI groundfish freezer longliners	2007	35.0	NA

License limitation programs, also known as limited entry programs, are another management tool available to fishery managers. In these programs, the number of fishing vessels allowed to harvest a specific fish stock or stock complex is limited, rather than simply open to whoever might be interested in fishing. Unlike catch share programs, license limitation programs have been implemented for almost all Federally-managed commercial fisheries and have been implemented in every region except the Caribbean.

**Commercial Fisheries**

Commercial fishermen in the U.S. harvested 8.3 billion pounds of finfish and shellfish in 2008, earning over \$4.4 billion for their catch. Shrimp (\$450 million), Pacific salmon (\$390 million), sea scallop (\$370 million), walleye pollock (\$320 million), and American lobster (\$320 million) contributed most to total revenue in the U.S. In terms of pounds landed, walleye pollock (2.3 billion pounds) and menhaden (1.3 billion pounds) comprised the majority of total pounds landed in 2008.

**Key U.S. Commercial Species**

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

Alaska fishermen had the highest total revenue and total pounds landed in the U.S. in 2008, generating \$1.7 billion in revenue and landing 4.5 billion pounds. Alaska also contributed most to total revenue and landings of sablefish (\$84 million, 30 million pounds) and walleye pollock (\$384 million, 2.3 billion pounds) in 2008.

<sup>14</sup>This total excludes three buyback programs associated with Northwest Pacific salmon disasters in 1994, 1995, and 1998; data was not available.

When looking at other key species or species groups, commercial fishermen in Alaska caught the most salmon (370 million pounds) and earned \$640 million for their catch in 2008. Tuna was caught in large numbers in Hawai'i (18 million pounds) and generated \$61 million in ex-vessel revenue.

On the East Coast of the U.S., Maine fishermen contributed most to total landings of American lobster (67 million pounds) and earned \$235 million for their catch in 2008. In Massachusetts, sea scallop was a major contributor to total revenue, generating \$190 million for 27 million pounds landed. The majority of blue crab was caught in Maryland (37 million pounds) earning fishermen in this state over \$52 million in revenue.

Virginia landed most of the menhaden in 2008, with fishermen landing 350 million pounds and generating \$21 million in total revenue.

In the Gulf of Mexico, shrimp was a highly valued species. Fishermen in Texas earned \$157 million for their catch (64 million pounds). However, more shrimp was landed in Louisiana (89 million pounds) with a total landings revenue of \$130 million in total revenue). The exvessel price in Texas (\$2.46) was greater than that in Louisiana (\$1.46).

The highest ex-vessel price per pound in 2008 was for Eastern oyster, which received \$36.64 per pound in Massachusetts, \$21.21 per pound in New York, and \$9.13 per pound in Maryland. Other key species or groups with ex-vessel prices over \$10 per pound in 2008 included: clams (\$13.63 per pound in Washington), lobsters (\$12.14 per pound in Hawai'i), spiny lobsters (\$10.80 per pound in California), and bloodworms (\$11.00 per pound in Maine).

**Economic Impacts**

In this report, the U.S. commercial seafood industry includes the commercial harvest sector, seafood processors and dealers, seafood wholesalers and distributors, and seafood retailers. In 2008, this industry supported approximately 1.5 million full- and part-time jobs and generated \$104 billion in sales impacts and \$45 billion in income impacts.

Jobs supported by the U.S. Commercial Seafood Industry (2008)

State	Jobs	State	Jobs
California	162,609	North Carolina	15,083
Florida	108,695	Hawai'i	12,258
Massachusetts	73,029	Georgia	11,621
Washington	71,775	Maryland	10,946
Alaska	47,725	Rhode Island	10,626
Louisiana	43,711	Alabama	9,750
Texas	42,541	Mississippi	8,575
New York	41,517	New Hampshire	7,492
New Jersey	40,061	Connecticut	4,416
Virginia	30,734	South Carolina	1,939
Maine	19,806	Delaware	1,134
Oregon	18,693		

Seafood retailers contributed most to these totals relative to the other commercial seafood sectors. This sector employed approximately 1.1 million workers (75% of total

employees) in 2008 and generated \$60 billion in sales (58% of total sales impacts) and \$28 billion in income (62% of total income impacts). Seafood wholesalers and distributors (155,000 employees), commercial harvesters (115,000 employees), and seafood processors and dealers (105,000 employees) followed in terms of jobs supported across the U.S.

Relative to 2007, sales and income impacts from the commercial seafood industry increased in 2008: 5.4%, 5.5%, respectively.<sup>15</sup> Increases in sales and income impacts were experienced across all of the sectors. The commercial harvester sector experienced the smallest increase, with a 3.8% sales impacts and a 4.3% increase in income. The largest increase was seen in the seafood wholesalers and distributors which experienced a 6.6% increase in sales and income impacts. Total employment impacts increased 2.4%, and increases in employment were seen across all sectors. These increases ranged from 1.2% in the commercial harvester sector to 3.4% in the seafood wholesalers and distributor sector.

**Total Sales generated by the U.S. Commercial Seafood Industry (2008)**  
(thousands of dollars)

State	In-State Sales	State	In-State Sales
California	9,104,910	North Carolina	635,530
Florida	5,657,246	Maryland	615,041
Massachusetts	3,965,159	Georgia	592,976
Alaska	3,732,488	Hawai'i	560,191
Washington	3,717,090	Rhode Island	520,340
New Jersey	2,170,232	Alabama	445,449
Louisiana	2,033,587	Mississippi	390,702
Texas	2,013,272	New Hampshire	371,868
New York	1,978,974	Connecticut	235,908
Virginia	1,369,390	South Carolina	84,022
Maine	1,009,250	Delaware	54,497
Oregon	962,534		

**Landings Revenue**

Ex-vessel revenue in the U.S. totaled \$4.4 billion in 2008. This was a 23% increase (2.0% decrease in real terms) from 1999 levels (\$3.6 billion) and a 5% increase (5.3% decrease in real terms) relative to 2007 (\$4.2 billion). Finfish and shellfish revenues mirrored this increasing trend. Totalling \$2.3 billion in 2008, finfish revenue increased 40% (12% in real terms) from 1999 to 2008 and increased 9.1% (1.5% decrease in real terms) from 2007 to 2008. U.S. shellfish revenue totaled \$2.1 billion in 2008, increasing 8.6% (13% decrease in real terms) from 1999 to 2008 and less than 1% increase (9.1% decrease in real terms) from 2007 to 2008.

Overall, the greatest portion of the nation's ex-vessel revenue was generated in Alaska (\$1.7 billion) which contributed 39% to the U.S. total. Alaska also contributed more than any other state to total U.S. finfish revenue (\$1.5 billion), accounting for 66% of total finfish revenue. More than half of Alaska's finfish landings revenue came from walleye pollock and salmon. Massachusetts (\$278

million) and Louisiana (\$209 million) contributed most to total U.S. shellfish revenue, contributing 13% and 10%, respectively. Sea scallops accounted for most of the revenue generated in Massachusetts and shrimp contributed the most to revenue in Louisiana.

**Total Landings Revenue by Region (2008)**  
(thousands of dollars)

Region	Total Revenue	Region	Total Revenue
U.S. total	4,386,692	Pacific	503,653
North Pacific	1,700,851	Mid-Atlantic	451,817
New England	805,343	South Atlantic	164,456
Gulf of Mexico	659,104	Western Pacific	85,120

The ten U.S. key species and species groups comprised 58% of total revenue in 2008. Of these, shrimp, Pacific salmon, sea scallop, walleye pollock, and American lobster contributed most to total revenue in the U.S. in 2008. These species or groups totaled approximately \$1.9 billion in 2008 or 42% of total revenue.

**Total Landings Revenue by State (2008)**  
(thousands of dollars)

State	Total Revenue	State	Total Revenue
Alaska	1,700,851	Rhode Island	66,647
Massachusetts	399,735	Hawai'i	85,120
Maine	301,021	Maryland	73,505
Louisiana	272,884	New York	57,231
Washington	243,426	Alabama	44,317
Texas	176,098	Connecticut	17,147
Florida	169,711	Mississippi	43,696
New Jersey	168,676	New Hampshire	20,793
Virginia	145,552	South Carolina	17,525
California	113,429	Georgia	12,523
Oregon	103,096	Delaware	6,713
North Carolina	86,815		

Key species or species groups with large increases in total revenue from 1999 to 2008 include: sea scallop (206% increase, 144% in real terms), walleye pollock (99%, 59% in real terms), Pacific halibut (73%, 39% in real terms), and sablefish (28%, 2.5% in real terms). Decreases in total revenue over the 10 year time period were observed for shrimp (24%, 39% in real terms), menhaden (23%, 38% in real terms), blue crab (2.6%, 22% in real terms), and American lobster (2.5%, 22% in real terms).

Relative to 2007 totals, key species or species groups with the largest changes in total revenue in 2008 include: increases in tunas (14%, 2.8% in real terms) and blue crab (12%, 1.3% in real terms); and decreases in American lobster (11.5%, 20% in real terms), menhaden (4.6%, 14% in real terms), and Pacific halibut (4.2%, 14% in real terms).

**Landings**

In 2008, U.S. commercial fishermen landed 8.3 billion pounds of finfish and shellfish. Relative to 1999 levels, this was an 11% decrease and a 10% decrease relative to

<sup>15</sup>Percent change between 2007 and 2008 was calculated using employment, sales, and income impacts normalized to 2006 dollars using the seafood producer price index.

2007 (9.4 billion pounds). Finfish landings totaled 7.3 billion pounds in 2008, a 9.3% decrease from 1999 (8.0 billion pounds) and a 12% one-year decrease from 2007 (8.2 billion pounds). The largest one-year decrease in landings seen over the last ten years was for finfish which experienced a 12% decrease from 8.2 million pounds in 2007 to 7.3 million pounds in 2008. The largest increase in landings was for shellfish between 2005 and 2006 which experienced a 9.1% decrease.

**Total Landings by Region (2008)**  
(thousands of pounds)

Region	Total Landings	Region	Total Landings
U.S. total	8,329,597	Mid-Atlantic	678,113
North Pacific	4,533,627	New England	594,362
Gulf of Mexico	1,274,652	South Atlantic	115,985
Pacific	1,084,057	Western Pacific	30,682

Alaskan fishermen harvested the majority of the nation’s total landings. Alaska contributed 54% to the U.S. total in 2008, landing 4.5 billion pounds of finfish and shellfish. Alaska also contributed most to the U.S. finfish total, landing 4.4 billion pounds or 61% of the U.S. finfish total. Walleye pollock comprised most of this Alaskan catch (51%). There was more shellfish landed in Louisiana than any other single state. With 157 million pounds landed in 2008, Louisiana’s total accounted for 15% of the U.S. shellfish total. Shrimp accounted for over half of this harvest.

**Total Landings by State (2008)**  
(thousands of pounds)

State	Total Landings	State	Total Landings
Alaska	4,533,627	North Carolina	71,205
Louisiana	915,956	Maryland	61,372
Virginia	415,719	West Florida	59,402
Massachusetts	326,082	New York	33,903
California	315,139	Alabama	24,423
Mississippi	201,822	Hawai’i	30,682
Oregon	195,733	East Florida	26,194
Washington	174,262	New Hampshire	10,953
Maine	178,545	South Carolina	9,948
New Jersey	162,470	Georgia	8,639
Texas	73,048	Connecticut	7,074
Rhode Island	71,709	Delaware	4,598

Over 60% of total catch in 2008 was made up of the ten U.S. key species and species groups. Walleye pollock and menhaden had the highest landings totals in 2008 with 2.3 billion pounds and 1.3 billion pounds landed, respectively. These two species accounted for 43% of total U.S. landings in 2008.

Sea scallops (143% increase) were the only species or species group to experience an increase in total landings between 1999 and 2008. The largest decreases were seen for menhaden (34%), blue crab (29%), and tuna (22%). Pacific salmon and shrimp both saw a 19% decrease in landings between 1999 and 2008.

Blue crab (6%) and American lobster (9%) were the only key species or species groups to experience increases in total landings between 2007 and 2008. Large decreases were seen in walleye pollock and Pacific salmon, which both experienced 26% decreases.

**Prices**

Of the ten U.S. key species and species groups, sea scallop, American lobster, and Pacific halibut received the highest ex-vessel prices in 2008 at \$6.91 per pound, \$3.72 per pound, and \$3.25 per pound, respectively. Significant increases in price were observed for Pacific halibut which increased 106% (65% in real terms) from 1999 to 2008 but decreased 10% in real terms from 2007 to 2008. Walleye pollock ex-vessel price also increased, increasing 100% (60% in real terms) from 1999 to 2008 and 40% (26% in real terms) from 2007 to 2008. Shrimp (25%), American lobster (19%) and menhaden (7%) were the only species groups to experience decreases in real ex-vessel prices between 1999 and 2008.

Menhaden and walleye pollock had the lowest ex-vessel prices in 2008 at \$0.07 per pound and \$0.14 per pound, respectively. However, total landings of menhaden and walleye pollock were the largest among the U.S. key species and groups: 1.3 billion pounds of menhaden and 2.3 billion pounds of walleye pollock. Ex-vessel price for menhaden increased from 1999 to 2008 (17%, 7% decrease in real terms). Between 2007 and 2008, the ex-vessel also increased 17%, but with a 5% increase in real terms.

Overall, seven of the ten U.S. key species or species groups experienced an increase in real ex-vessel price from 1999 to 2008. In addition to those mentioned above, Pacific halibut (106% increase, 65% in real terms), tunas (50%, 20% in real terms), and sablefish (43%, 15% in real terms) experienced large or modest increases. The largest decrease in ex-vessel price was experienced by shrimp (6%, 25% in real terms) followed by American lobster (1%, 19% in real terms).

Between 2007 and 2008, ex-vessel price for half of U.S. key species or groups increased, with walleye pollock increasing the most (40%, 26% in real terms). American lobster prices decreased 19% from 2007 to 2008 (27% decrease in real terms).

**Recreational Fishing**

In 2008, there were approximately 12 million recreational anglers across the U.S. who took 85 million saltwater fishing trips around the country. These anglers spent \$4.9 billion on fishing trips and \$18 billion on durable fishing-related equipment. These expenditures contributed \$59 billion in sales impacts to the U.S. economy, generated \$27 billion in value-added impacts, and supported over 384,000 jobs. Of the U.S. key recreational species or species groups, Atlantic croaker (47 million fish) and seatrouts (51 million fish) were the most often caught by recreational anglers in 2008.

**Expenditures and Economic Impacts**

U.S. anglers spent a total of \$4.9 billion on expenditures related for fishing trips in 2008. Of this total, expenditures

for a private or rental boat fishing trips contributed the most (\$2.2 billion), followed by shore-based fishing trips (\$2.0 billion), and for-hire fishing trips (\$746,000). Expenditures on durable fishing-related equipment totaled over \$23 billion in 2008. Boat expenses contributed the most to this total with \$6.2 billion spent. Vehicle-related expenditures (\$4.5 billion), second home expenses (\$3.5 billion), and fishing tackle expenditures (\$2.7 billion) followed.

**Key U.S. Recreational Species**

- Atlantic croaker and spot
- Alaskan halibut
- Large Atlantic tunas
- Salmon
- Little tunny and Atlantic bonito
- Seatrouts
- Sharks
- Striped bass
- Summer flounder
- Pacific rockfishes and scorpionfishes

Relative to 2007, angler expenditures on fishing trips increased 7% with single digit increases in expenditures observed in each of the three fishing modes (private boat, shore-based, and for-hire). Total expenditures on durable fishing-related equipment decreased 30% from 2007 to 2008. Each of the durable expenditure categories mirrored this trend, ranging from 10% decreases in fishing tackle and other equipment expenditures, to a 39% decrease in boat expenses.

**Jobs supported by the U.S. Recreational Fishing Industry (2008)**

State	Jobs	State	Jobs
West Florida	54,589	South Carolina	5,509
East Florida	35,467	Massachusetts	5,952
Louisiana	25,590	Hawai'i	5,623
California*	11,830	Alaska	4,821
Texas	25,544	Mississippi	2,930
North Carolina	22,201	Connecticut	4,884
Washington	3,725	Oregon	1,541
New Jersey	9,612	Georgia	2,549
Maryland	7,244	Maine	1,286
Virginia	5,564	Delaware	1,462
Alabama	4,719	Rhode Island	1,467
New York	5,766	New Hampshire	357

Economic impacts from recreational fishing activities (impacts from fishing trips and durable equipment combined) supported over 384,000 full- and part-time jobs across the U.S. in 2008. Sales impacts from recreational angling expenditures totaled \$59 billion and value-added impacts totaled \$27 billion. Durable equipment impacts contributed most to these totals, accounting for 76% of jobs, 81% of total sales impacts, and 78% of value-added impacts. Of the three fishing trip modes, shore fishing trips contributed most to the number of jobs supported by recreational angling with 10% of jobs. Total sales and value-added impacts from private or rental boat trips were higher than the other fishing modes, accounting for 8.3% of sales impacts and 9.1% of value-added impacts.

Relative to 2007 totals, economic impacts from recreational angling nationwide decreased 23% in terms of jobs supported, total sales, and value-added impacts. The largest increases from 2007 to 2008 were observed for the

shore fishing mode in terms of jobs, total sales, and value-added impacts. Shore based total sales increased by 9.2%.

**Total Sales generated by the U.S. Recreational Fishing Industry (2008)**  
(thousands of dollars)

State	In-State Sales	State	In-State Sales
East Florida	4,042,417	Alabama	455,093
West Florida	5,650,068	Hawai'i	610,433
California	1,764,010	Mississippi	382,778
Texas	3,288,135	Connecticut	742,753
North Carolina	2,291,227	South Carolina	487,545
Louisiana	2,297,078	Alaska	429,368
New Jersey	1,592,965	Oregon	157,752
Maryland	999,402	Delaware	223,519
Washington	386,010	Georgia	311,224
New York	875,449	Maine	108,242
Virginia	618,884	Rhode Island	166,457
Massachusetts	785,893	New Hampshire	39,009

**Participation<sup>16</sup>**

Nationwide, there were approximately 12.4 million recreational anglers who fished in 2008. Approximately 11 million of these anglers were residents of a U.S. coastal county and 1.6 million anglers were residents of a non-coastal county. Between 1999 and 2008, the total number of U.S. anglers increased 66%. However, the number of anglers decreased 12% between 2007 and 2008. The number of coastal county anglers increased 65% from 1999 to 2008 and decreased 14% from 2007 to 2008. A similar increase was observed for non-coastal county anglers during the 10 year time period (72%) and a slight decrease was observed between 2007 and 2008 (1.4%).

The majority of U.S. anglers fished in Gulf of Mexico (3.2 million anglers), the South Atlantic (2.9 million anglers), and Mid-Atlantic Regions (3 million anglers). Pacific (1.45 million anglers), New England (1.6 million anglers), North Pacific (309,000 anglers), and Western Pacific (329,000 anglers) followed in terms of total anglers.

**Fishing Trips<sup>17</sup>**

Approximately 85 million fishing trips were taken in the U.S. in 2008. Of these, 46 million were fishing trips taken from a private or rental boat (52% of total fishing trips). Approximately 37 million trips were taken from shore and 3.4 million trips were taken from a for-hire fishing boat. Most of these trips were taken in the Gulf of Mexico (24 million), South Atlantic (22 million), and Mid-Atlantic (20.6 million). New England (9.2 million), the Pacific (5.8 million), and Western Pacific Regions (2.5 million) followed in number of trips taken. Anglers in the North Pacific fished approximately 935,000 thousand fishing days in 2008.<sup>18</sup>

<sup>16</sup>Participation estimates do not include Alaska and Texas. Hawai'i is included for 2003-2007; Numbers include the Caribbean for 2000-2007.

<sup>17</sup>Effort numbers do not include Alaska and Texas. They include Hawai'i only for 2003-2007. California numbers were estimated differently from 2004-2008.

<sup>18</sup>In Alaska, fishing effort information is collected as the number of fishing days rather than the number of fishing trips taken.

The total number of fishing trips taken in the U.S. increased 51% from 1999 to 2008. Increases were also observed for two fishing modes; there was a 48% increase in private or rental boat trips and 63% increase in shore-based trips. For-hire fishing trips decreased 1.4% during this time period, the only fishing mode to experience a decrease. Relative to 2007, total fishing trips taken in the U.S. decreased 8%, with larger decreases observed in the for-hire mode (16%).

#### Recreational Fishing Facts

##### Participation

- There were 12.4 million anglers in the U.S. in 2008. Of these, 11 million anglers were coastal county residents and 1.6 million were residents of a non-coastal counties. The majority of anglers in the U.S. fished in the South Atlantic, Gulf of Mexico, and Mid-Atlantic Regions.

##### Fishing trips

- Approximately 85 million fishing trips were taken nationwide in 2008. Most of these trips were taken in the South Atlantic, Gulf of Mexico, and Mid-Atlantic.
- Private or rental boat trips accounted for most of the fishing trips taken in the U.S., comprising 52% of total U.S. fishing trips or 44.5 million trips. This fishing mode comprised the majority of the trips in the Gulf of Mexico (60% of trips), Mid-Atlantic (57% of trips), South Atlantic (50% of trips), and New England (54% of trips).
- Shore-based fishing trips accounted for 44% of total U.S. fishing trips or 37 million trips. This was the most popular fishing mode in the Western Pacific (78% of trips) and Pacific (67% of trips) regions.
- For-hire fishing boat trips accounted for 3.9% of total trips taken with 3.4 million trips.
- In the North Pacific, anglers spent approximately 935,000 thousand days fishing in 2008.

##### Harvest and release

- Atlantic croaker and seatrouts were the most commonly caught species or species group by anglers in 2008 with approximately 47,000 and 51,000 fish caught, respectively. Most of these fish were caught in the Mid-Atlantic and Gulf Regions.
- The least caught key species or species group were large Atlantic tunas (791,000 fish caught) and Alaskan halibut (875 million fish caught). Most of these tuna were caught in New England.
- Large Atlantic tunas experienced the largest annual increase in catch from 1998-2007, increasing 145% from 2002-2003. Little tunny experienced the largest annual decrease in catch, decreasing 46% from 2004 to 2005. From 2007 to 2008, salmon experienced the largest decrease (43%) and large Atlantic tunas experienced the largest increase (20%).

#### Harvest and Release

Among the ten key U.S. recreational species or species groups, Atlantic croaker, seatrouts, summer flounder, and striped bass were the most caught by anglers in 2008. These species or groups were caught in large numbers relative to the other key species or groups: Atlantic croaker (47 million fish), seatrouts (51 million fish), summer flounder (25 million fish), and striped bass (14 million fish). Anglers fishing in the Mid-Atlantic and New England caught most of the Atlantic croaker, summer flounder, and striped bass in 2008, while most seatrout were caught in the Gulf of Mexico and the South Atlantic.

In the North Pacific Region, Pacific halibut and salmon species (Chinook, chum, coho, pink, and sockeye) were the most commonly caught species or group in 2008 with 875,000 fish and 961,000 fish caught, respectively. Mackerels (2.7 million fish), rockfishes (2.3 million fish), and surfperches (1.6 million fish) were caught in high numbers in the Pacific Region, while bigeye and mackerel scad (402 million) comprised 42% of fish caught by anglers in the Western Pacific.

Recreational catch of requiem sharks increased 266% between 1999 and 2008, the largest increase during this 10 year time period. There were 5.5 million requiem sharks caught in 2008. Other key species or groups with large increases in recreational catch include: Pacific halibut (56% increase), Atlantic croaker (49%), and large Atlantic tuna (47%). Recreational catches decreased for little tunny (20%) salmon (30%) and rockfishes (57%) between 1999 to 2008.

From 2007 to 2008, decreases occurred in the recreational catch of salmon (43%), striped bass (27%), little tunny (30%), requiem sharks (11.6%), rockfish and scorpion fish (17%), Pacific halibut (15%), and Atlantic Croaker (9%). All other U.S. key recreational species or groups increased from 2007 to 2008, with the largest increases in large Atlantic tuna (20%).

#### Marine Economy<sup>19</sup>

In 2007, there were 7.7 million establishments in the U.S, including marine and non-marine related establishments. These establishments employed over 120 million full- and part-time employees and had a total annual payroll of \$5.0 trillion. From 1999-2007, the number of establishments increased 11%, employee numbers increased 12%, and total annual payroll increased 52% (27% in real terms) nationwide. More modest increases were seen from 2006 to 2007: 1.4%, 0.57%, and 4.9% (0.88% decrease in real terms), respectively.

The nation's gross domestic product was \$14 trillion in 2007, a 62% increase (32% in real terms) relative to 1998 levels (\$8.7 trillion) and a 4.5% (12% decrease in real terms) increase relative to 2006 levels (\$13 trillion). Employee compensation in 2007 was \$7.8 trillion, a 32% (10% in real terms) increase from 1998 (\$5.9 trillion) and a 4.9% (0.90% decrease in real terms) increase from 2006 (\$7.4 trillion).

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

<sup>19</sup>Information for 2007 is reported in this section; 2008 data were not available for this report.