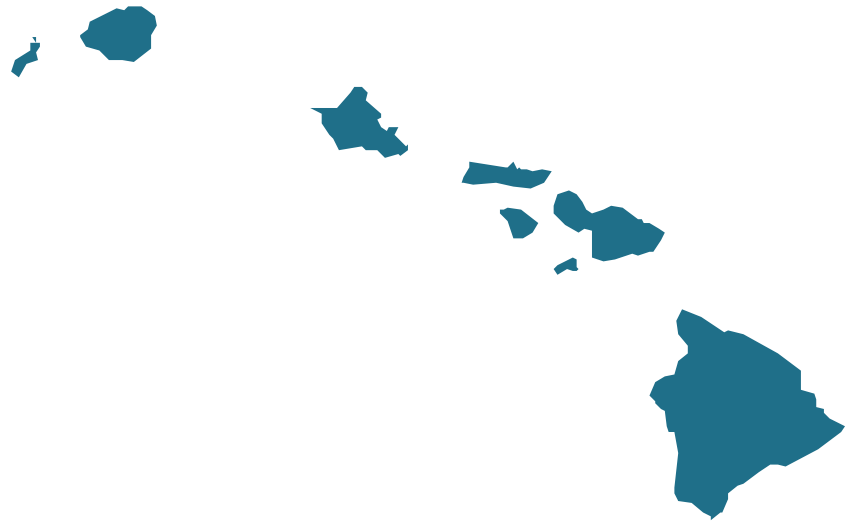


Western Pacific

- Hawai'i



Management Context

The Western Pacific Region includes the state of Hawai'i.¹ Federal fisheries in this region are managed by the Western Pacific Fishery Management Council (WPFMC) and NOAA Fisheries (NMFS) under five fishery ecosystem plans (FEPs). Fishery ecosystem plans manage marine resources from a place-based perspective rather than managing fishing activities in terms of targeted species. These FEPs replace the Council's existing fishery management plans (FMPs) for Bottomfish and Seamount Groundfish, Coral Reef Ecosystems, Crustaceans, and Precious Corals.

Western Pacific Fishery Ecosystem Plans

1. American Samoa Archipelago
2. Hawai'i Archipelago
3. Mariana Archipelago
4. Pacific Remote Island Areas
5. Pacific Pelagics

Of the stocks covered in these fishery ecosystem plans, the Hancock Seamount groundfish complex is currently considered overfished. This fishery has been closed since 1986. Pacific bigeye tuna is currently subject to overfishing and this status is considered to be primarily due to international fishing pressure. The U.S. harvested 4.5% (or 22.5 million pounds) of the Pacific-wide (western-central and eastern Pacific Ocean) total of Pacific bigeye tuna landings reported in 2007. Currently, there are no catch share programs in place in this region.

In addition to management oversight provided by the WPFMC and NOAA Fisheries, pelagic fish species such as bigeye and yellowfin tunas are also managed by two regional fishery management organizations (RFMOs). The Western and Central Pacific Fisheries Commission (WCPFC) is active in the western and central Pacific Ocean and the Inter-American Tropical Tuna Commission (IATTC) is active in the eastern Pacific Ocean. Species under the purview of the WCPFC and IATTC migrate across international boundaries and require coordinated management between countries with fishing interests in the Pacific Ocean. Catch levels recommended by the WCPFC are not binding and are viewed as suggestions by the Western Pacific Fishery Management Council and by NOAA Fisheries. In contrast, harvest limits established by the IATTC for eastern tropical Pacific bigeye tuna must be carried out by NMFS.²

¹The Western Pacific Region also includes the U.S. territories of American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands. However, due to data availability, only information from Hawai'i is reported here.

²Under the Tuna Conventions Act of 1950 (64 Stat. 777) as amended (16 U.S.C., 951-961), NMFS must publish regulations that carry out IATTC recommendations and resolutions that have been approved by the Department of State.

Commercial Fisheries

Fishermen in Hawai'i earned \$76 million from their commercial harvest in 2007, landing almost 29 million pounds of finfish and shellfish. Tunas comprised two-thirds of this ex-vessel revenue (\$51 million) as well as 61% of total landings (17.6 million pounds). Swordfish (\$7.7 million), mahimahi (\$3.5 million), moonfish (\$2.2 million), and marlin (\$2.0 million) also contributed to landings revenue. Lobsters commanded the highest ex-vessel price in 2007, with an average annual price of \$11.84 per pound.

Key Western Pacific Commercial Species

- Lobsters
- Mahimahi (dolphin)
- Marlin
- Moonfish (opah)
- Pomfret
- Scad
- Snappers
- Swordfish
- Tunas
- Wahoo

Economic Impacts

Economic impacts from Hawai'i's seafood industry generated \$516 million in sales impacts, \$262 million in income impacts, and approximately 12,000 full- and part-time jobs in 2007. The retail sector contributed most to sales (54% of the total), income (65%), and employment impacts (64%) with over \$280 million in sales, \$170 million in income, and 7,500 jobs. The commercial harvest sector followed with \$144 million in in-state sales, \$44 million in income impacts, and over 3,100 jobs.

Landings Revenue

Ex-vessel landings revenue for finfish and shellfish totaled over \$75.7 million in 2007, a 24% increase from total revenue generated in 1998. When adjusted for inflation, real ex-vessel revenues increased 3.5%. Ex-vessel revenue in 2007 was a 15% increase from 2006 (\$66.1 million). Finfish and other catch contributed almost 100% of total revenue in 2007 (\$75.5 million), a 28% increase from 1998 (7.0% in real terms). In contrast, revenue generated from shellfish landings decreased 92% (-93% in real terms) from \$2.1 million in 1998 to \$174,000 in 2007. Lobster revenue between 1998 and 2007 decreased 92%, contributing to this decrease in shellfish revenue.

Landings revenue in 2007 was dominated by tunas which contributed \$51.1 million or 68% of total ex-vessel revenue. On average, tunas contributed 64% to total revenue over the 10 year time period. The largest increases in landings revenue from 1998-2007 were for pomfret (341% or 268% in real terms), moonfish (147% or 106% in real terms), and mahimahi (105% or 71% in real terms). Landings revenue between 1998 and 2007 declined for five of the key species or groups

in the Western Pacific. The largest declines in revenue were for lobsters (-92%, -93% in real terms), swordfish (-46% or -55% in real terms), and scad (-45% or -54% in real terms).

Commercial Fish Facts

Landings revenue

- On average, the key species or species groups accounted for 96% of total revenue (\$59.3 million) generated in the Western Pacific.
- Eight of the key species or groups had average annual ex-vessel revenue in excess of \$1.2 million.
- Tunas averaged \$40 million annually over the 1998-2007 time period, accounting for 64% of total landings revenue (finfish and shellfish combined).
- Landings revenue from swordfish decreased 89% from 2000-2001, the largest annual decrease, only to increase 534% from 2004-2005, the largest annual increase of any key species or group.

Landings

- On average, the key species and species groups accounted for 95% of total landings in this region.
- Tunas averaged 15 million pounds annually over the time period, contributing an average of 56% to total landings.
- Landings for swordfish increased 580% from 2004-2005, the largest increase in landings in the 10 year period. This species also had the largest annual decrease in landings, declining 91% from 2000-2001.

Prices

- Lobsters had the highest average annual ex-vessel price at \$11.44 per pound, followed by snappers (\$4.03) and tunas (\$2.58).
- Marlin (\$1.20), moonfish (\$1.48), and pomfret (\$1.78) had the lowest average ex-vessel prices of the key species or groups.
- Marlin had both the largest annual price increase and decrease of any key species or group, decreasing 37% from 2002-2003 then increasing 58% from 2003-2004.

Landings

In 2007, Hawai'ian commercial fishermen landed 29 million pounds of finfish and shellfish, a 1.5% increase from 1998 landings totals. Compared to landings in 2006 (26 million pounds), this was a 13% increase. Finfish and other catch accounted for an average of almost 100% of total landings annually, increasing 2.6% from 1998-2007 and 13% from 2006-2007. Shellfish landings decreased 94% from 336,000 pounds landed in 1998 to 22,000 pounds in 2007, but increased 47% from 2006-2007.

Tunas contributed more to the Western Pacific's total landings than any other species or group with 17.6 million pounds landed in 2007. This was a 21% increase from 1998 total landings of tuna (14.6 million pounds). Swordfish followed with 3.6 million pounds landed in 2007. However, swordfish landings experienced dramatic changes from 1998-2007. From 2000-2001, swordfish landings decreased 91% from 6.4 million pounds to 572,000 pounds. A few years later (2004-2005), landings increased 561% from 520,000 pounds to 3.4 million pounds.

Prices

Overall, 2007 ex-vessel price for all but one key species or species groups was above their 10 year average annual price. Only swordfish had a lower price per pound (\$2.12) in 2007 relative to its annual average (\$2.21) over the time period, declining 7.4% (-23% in real terms). When adjusted for inflation, mahimahi and lobster prices also declined between 1998 and 2007, decreasing 8.9% and 1.9% in real terms, respectively.

Relative to ex-vessel prices in 2006, marlin (37%), lobsters (23%), and wahoo (12%) all had double-digit increases in 2007. Prices for mahimahi (-7%), snappers (-4%), and tunas (-3%) all decreased slightly from 2006 prices.

Recreational Fishing

In 2007, there were 317,000 recreational anglers who fished in the state of Hawai'i. These anglers took 2.6 million fishing trips and of these, 82% were shore-based trips. Bigeye and mackerel scad were the most caught key species or species group with over 1.0 million fish caught in 2007. Almost all of these fish were harvested by anglers rather than released.

Key Western Pacific Recreational Species

- Barracuda (smallmouth bonefish)
- Blue marlin
- Dolphinfin (mahimahi)
- Goatfishes
- Jacks (trevallys and other jacks)
- Bigeye and mackerel scad
- Snappers
- Skipjack tuna
- Yellowfin tuna
- Wahoo

Economic Impacts and Expenditures

Over 5.7 million jobs in Hawai'i were related to recreational fishing activities in 2007. Recreational anglers who fished in the region spent \$601 million in trip-related and durable equipment expenditures. Roughly 92% of the 5.7 million jobs were related to industries that provided support for durable equipment sales and services (4.0 million jobs) and shore-based fishing trip activities (1.2 million jobs).

Durable equipment expenditures contributed \$471 million to Hawai'i's economy or 78% of total trip and durable equipment expenditures. Shore-based fishing trip expenditures contributed \$90 million or 15% of total trip and durable equipment expenditures (or 69% of total trip expenditures). Resident anglers accounted for over 91% of total trip-related expenditures in Hawai'i.

In addition to jobs, the contribution of recreational fishing to Hawai'i's economy can also be measured in terms of sales impacts and the contribution of these activities to gross domestic product (value-

added impacts). In 2007, shore-based fishing trips generated \$104 million in sales (68% of trip-related sales) and \$55 million in value-added impacts (68% of total trip-related value-added impacts). Private boat fishing activities contributed \$39 million in sales (26%) and \$20 million (25%) in value-added impacts. For-hire fishing trips contributed \$10 million in sales (6.5%) and \$5.5 million (6.8%) in value-added impacts.

Expenditures on durable equipment totaled \$471 million in 2007, contributing 78% to total expenditures in the region (trip and durable equipment combined). Expenditures on fishing tackle (\$168 million) and vehicle expenses (\$106 million) accounted for most of the durable equipment expenditures, contributing 36% and 23%, respectively. Other equipment (\$80 million), boat expenses (\$79 million), and second home expenses (\$38 million) also contributed to this total.

In 2007, economic impacts from durable equipment expenditures included over 4.0 million jobs, \$470 million in sales impacts, and \$228 million in value-added impacts.

Participation³

There were 317,000 recreational anglers who fished in Hawai'i in 2007. This was a 28% decrease from 2003 (440,000) and a 20% decrease from 2006 (396,000). Decreases in both coastal county resident⁴ and out-of-state anglers were observed. Coastal county angler participation in 2007 decreased 35% relative to 2003 and decreased 1.7% relative to 2006. Out-of-state angler participation decreased 19% relative to 2003 and decreased 35% relative to 2006.

Fishing Trips³

Recreational fishermen took 2.6 million private or rental boat and shore-based fishing trips in 2007. This was an 7.3% increase from 2003 and a 2.5% decrease from 2006. Shore-based fishing trips accounted for most of the trips taken in Hawai'i: 82% of total fishing trips or 2.1 million trips in 2007. This was a 11% increase from 2003 and a 1.4% increase from 2006. Fishing trips taken from a private or rental boat showed a decreasing trend between 2003 and 2007, decreasing 6.7%. However, between 2006 and 2007, this mode of fishing trip decreased 1.7%.

Harvest and Release³

Bigeye and mackerel scad had the highest catch totals of the Western Pacific's key species and species groups. In 2007, approximately 1.1 million of these fish were caught by anglers and over 99% of these were harvested rather than released. Overall, all of Hawai'i's key species and groups were more often harvested than released. Anglers harvested nearly every dolphinfish caught in 2007. Other key species or groups where a large proportion of fish were harvested include

yellowfin tuna (99%), wahoo (98%), skipjack tuna (98%), and goatfishes (97%).

Six of Hawai'i's ten key species or species groups experienced double-digit declines in the total number of fish caught from 2003-2007. The largest decrease in catch was for goatfishes where 62% less fish were caught by anglers in 2007 (307,000 fish) relative to 2003 (804,000 fish). A similar decline in catch occurred for this species between 2006 and 2007 (63%). Dolphinfish (mahimahi) and barracuda (smallmouth bonefish) experienced modest increases in catch from 2003-2007, increasing 23% and 14%, respectively. However, total catch for both of these species decreased between 2006 and 2007 with anglers catching 38% fewer dolphinfish and 49% fewer barracuda in 2007.

Relative to 2006, only four key species or groups experienced increases in their catch totals: yellowfin tuna (120% increase), blue marlin (50%), bigeye and mackerel scad (34%), and skipjack tuna (15%). Catch totals for all other key species or groups declined from 2006-2007.

Recreational Fishing Facts

Participation

- Over 386,000 anglers fished in Hawai'i annually over the 2003-2007 time period.
- In 2007, Hawai'ian residents made up 54% of total anglers active in the state and averaged 53% of total anglers annually from 2003-2007.
- The largest annual increase in angler participation was a 35% increase in out-of-state anglers from 2005-2006. Out-of-state anglers also experienced the largest annual decrease in participation, decreasing 35% from 2006-2007.

Fishing trips

- In Hawai'i, an average of 2.6 million fishing trips were taken annually from 2003-2007.
- Shore-based fishing trips were very popular with recreational fishermen with 2.1 million trips taken in 2007. Shore-based trips averaged 78% of total fishing trips taken annually in Hawai'i.
- From 2003-2004, private or rental boat fishing trips increased 39%, the largest annual increase in fishing trip mode. Private or rental boat trips also had the largest annual decrease, decreasing 19% from 2004-2005.

Harvest and release

- Bigeye and mackerel scad were the most caught key species or species group, averaging 954,000 fish over the 10 year period. Nearly all of these fish were harvested rather than released in 2007.
- Nine of Hawai'i's ten key species or groups were harvested rather than released with 83-100% of fish harvested. Only trevallies and other jacks were harvested at a lower quantity (57% harvested).
- Blue marlin had the largest annual increase in catch, increasing 350% from 2004-2005. Bigeye and mackerel scad had the largest annual decrease in catch, decreasing 91% from 2003-2004.

³Due to data availability, the time period discussed in this section from 2003-2007.

⁴All anglers in Hawaii are coastal county anglers.

Marine Economy⁵

In 2006, over 33,000 establishments employed approximately 513,000 full- and part-time employees in Hawai'i. Annual payroll totaled \$17 billion, employee compensation totaled \$35 billion, and gross domestic product by state totaled \$59 billion. Gross state product and annual payroll increased the most between 1998 and 2006, increasing 56% and 53%, respectively. Modest increases were observed for employee compensation (41% increase), employee numbers (23%), and establishment numbers (12%). From 2005-2006, each of these economic measures increased slightly, ranging from a 2.7% increase in establishment numbers and a 7.3% increase in total employee compensation.

The commercial fishing location quotient (CFLQ) for Hawai'i decreased 37% from 7.26 in 2002 to 4.61 in 2006. Between 2005 and 2006, the CFLQ mirrored this declining trend, decreasing 6.1%. Despite these declines, Hawai'i's level of commercial fishing-related employment was still higher than the national baseline.⁶

Seafood Sales and Processing

There were 11 nonemployer firms engaged in seafood product preparation and packaging in 2006. This was an 83% increase from 1998 levels. Annual receipts for this industry increased significantly, increasing 2,147% from \$45,000 in 1998 to \$1.0 million in 2006 (a 1,885% increase in real terms). The number of employer establishments engaged in this industry remained relatively constant during this time period with 3 establishments in 2006. Employee and annual payroll totals were not available.

In 2006, there were 33 seafood wholesale establishments that employed 462 full- and part-time workers with an annual payroll of \$17 million. The number of establishments and employees decreased 41% and 9%, respectively, from 1998-2006. Despite these declines in establishments and work force, annual payroll totals increased 12% (but a 1% decrease in real terms).

Nonemployer firms involved in seafood retail decreased 16% between 1998 and 2006 from 37 firms to 31 firms. Despite this, annual receipt totals increased 28% (13% in real terms) to \$3.6 million in 2006. In contrast, employer establishments involved in this industry increased 29% to 27 establishments in 2006. These establishments employed 315 workers with an annual payroll of \$5.6 million. Employee and annual payroll numbers also rose from 1998-2006, increasing 77% and 89% (67% in real terms), respectively.

Transport, Support, and Marine Operations

Data was generally unavailable for this industry sector. When looking at the available information, ship and

boat building industries had the highest number of establishments in 2006 (14 establishments) and employed the most workers (545 employees). With an annual payroll of \$23 million, it ranked second in terms of total annual payroll in 2006. Coastal and Great Lakes freight transportation had the highest annual payroll total (\$37 million).

In terms of large changes between 1998 and 2006, the number of establishments engaged in coastal and Great Lakes freight transportation and marina industries increased the most, increasing 30% and 29%, respectively. In 2006, there were 13 establishments involved in freight transportation for coastal and Great Lakes areas and 9 establishments for marina industries. Deep sea passenger transportation experienced the largest decline in establishment numbers, decreasing 33% over this time period from 3 to 2 establishments.

⁵Data for 2007 was unavailable for this report therefore 2006 information is reported in this section.

⁶The CFLQ for the U.S. is 1.0. This provides a national baseline from which state CFLQs can be compared.