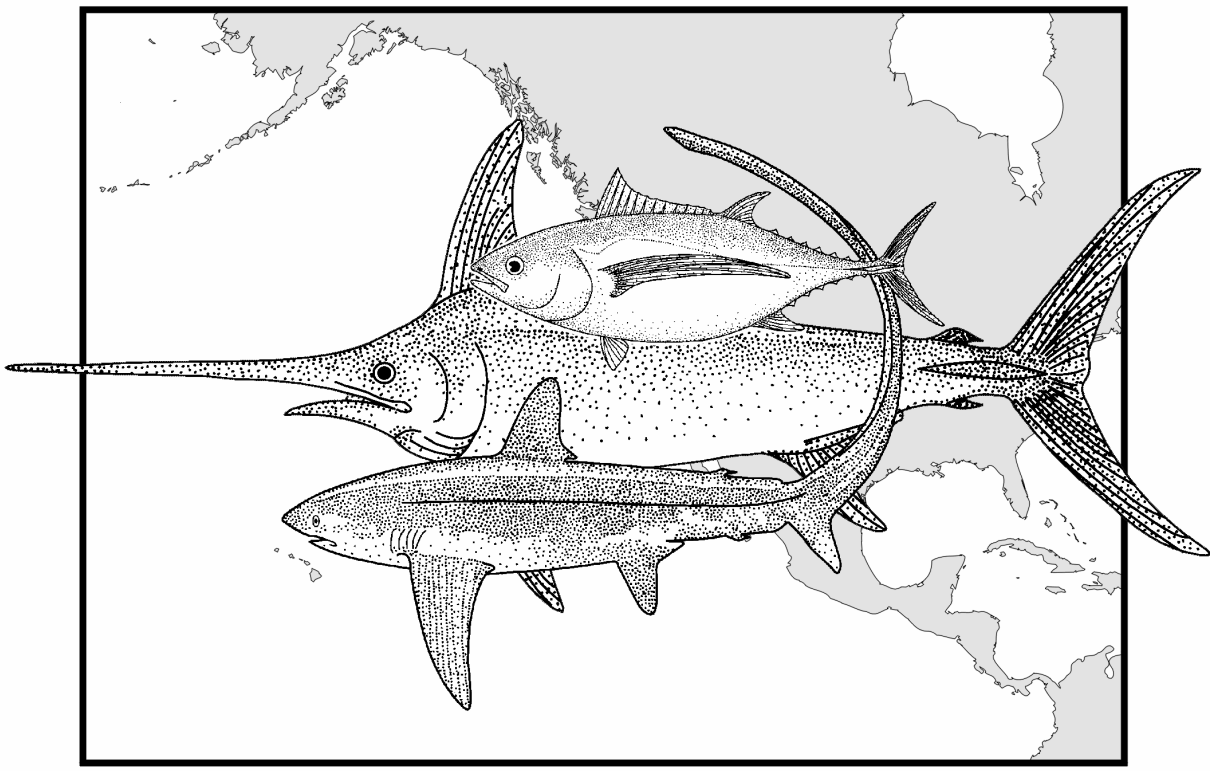
STATUS OF THE U.S. WEST COAST FISHERIES FOR HIGHLY MIGRATORY SPECIES THROUGH 2023



STOCK ASSESSMENT AND FISHERY EVALUATION NOVEMBER 2024

PACIFIC FISHERY MANAGEMENT COUNCIL
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PORTLAND, OREGON

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Commonly Used Acronyms

ACL	annual catch limit
AFRF	American Fishermen's Research Foundation
B	biomass
B_0	initial (unfished) biomass
BO	Biological Opinion
BREP	Bycatch Reduction Engineering Program
CDFG	California Department of Fish and Game
CFR	Code of Federal Regulations
CMM	Conservation and Management Measure
Council	Pacific Fishery Management Council
CPFV	commercial passenger fishing vessel
CPUE	catch per unit of effort
CRFS	California Recreational Fisheries Survey
DFO	Department of Fisheries and Oceans (Canada)
DGN	drift gillnet
DSBG	deep-set buoy gear
EEZ	exclusive economic zone
EFH	essential fish habitat
EPO	eastern Pacific Ocean
ESA	Endangered Species Act
F	fishing mortality rate
FL	fork length
FMP	fishery management plan
FR	Federal Register
HAPC	Habitat Area of Particular Concern
HMS	highly migratory species
HMS FMP	Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species
HMSAS	Highly Migratory Species Advisory Subpanel
HMSMT	Highly Migratory Species Management Team
IATTC	Inter-American Tropical Tuna Commission
ISC	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific
IUU	illegal, unregulated, and unreported fishing
LOF	List of Fisheries
MFMT	maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Act, Magnuson-Stevens Fishery Conservation and Management Act
MSST	minimum stock size threshold
MSY	maximum sustainable yield
mt	metric ton
MUS	management unit species
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPO	North Pacific Ocean
NRIFSF	National Research Institute of Far Seas Fisheries (Japan)
ODFW	Oregon Department of Fish and Wildlife
OMB	Office of Management and Budget
ORBS	Ocean Recreational Boat Survey (Oregon)

OSP	Washington Ocean Sampling Program
OY	optimum yield
PacFIN	Pacific Fisheries Information Network
PIER	Pfleger Institute of Environmental Research
PIFSC	NMFS Pacific Islands Fisheries Science Center
PIRO	NMFS Pacific Islands Regional Office
PSAT	pop-off satellite archival tag
PSMFC	Pacific States Marine Fisheries Commission
RecFIN	Recreational Fisheries Information Network
RFMO	regional fishery management organization
SAC	IATTC Scientific Advisory Committee
SAFE	stock assessment and fishery evaluation
SBR	spawning biomass ratio
SCB	Southern California Bight
SEPO	Southeast Pacific Ocean
SLUTH	Swordfish and Leatherback Use of Temperate Habitat (Workshop)
SPOT Tag	smart position and/or temperature tag
SSB	spawning stock biomass
SST	sea surface temperature
SWFSC	Southwest Fisheries Science Center (NMFS)
SWR	Southwest Regional Office (NMFS)
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	western and central Pacific Ocean
WDFW	Washington Department of Fish and Wildlife

1. Introduction

1.1. SAFE Document Production Schedule

Information on fishery management plan amendments (Section 1.2), changes to fishery management plan regulations (Section 3.1), and information on the latest stock assessments for management species (Chapter 8) are reported through the publication of this document (November 2024).

Consistent with the schedule described in Section 4.6 of the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species, a draft or final stock assessment and fishery evaluation (SAFE) document is submitted to the Council in September and November.

1.2. Amendments to the Fishery Management Plan

The Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (HMS FMP) was developed by the Pacific Fishery Management Council in response to the need to coordinate state, Federal, and international management. The National Marine Fisheries Service (NMFS), on behalf of the U.S. Secretary of Commerce, partially approved the HMS FMP on February 4, 2004. The majority of HMS FMP implementing regulations became effective on April 7, 2004. Reporting and recordkeeping provisions became effective on February 10, 2005.

The HMS FMP has been amended seven times since its implementation. Amendment 1, approved by NMFS on June 7, 2007, incorporates recommended international measures to end overfishing of the Pacific stock of bigeye tuna (*Thunnus obesus*). Amendment 2, approved by NMFS on June 27, 2011, makes the FMP consistent with revised National Standard 1 Guidelines. Amendment 3, adopted in 2015, added a suite of lower trophic level species to the FMP's list of ecosystem component (EC) species. Consistent with the objectives of the Council's FMPs and its Fishery Ecosystem Plan, Amendment 3 prohibits future development of directed commercial fisheries for the suite of EC species shared between all four FMPs ("Shared EC Species") until and unless the Council has had an adequate opportunity to both assess the scientific information relating to any proposed directed fishery and consider potential impacts to existing fisheries, fishing communities, and the greater marine ecosystem. Secretarial approval of Amendment 4 was approved on April 24, 2018. Amendment 4 revises and updates portions of the FMP to bring descriptions of the management context for HMS fisheries up to date and to better describe the Council's role in the process of making stock status determinations including evaluations of the best scientific information available (BSIA). This amendment also changes the biennial meeting schedule to better align it with the National Marine Fisheries Service's process for conducting HMS stock status determinations. Amendment 5 was approved December 14, 2017. This amendment creates a Federal permit for the California large mesh drift net fishery. Amendment 6, authorizing deep-set buoy gear (DSBG), was approved on March 31, 2023, with regulations becoming effective on June 7, 2023. This initiated the process for issuing limited entry permits to fish with DSBG in the Southern California Bight. The first batch of 50 permits was issued in September 2023. Remaining permits were issued to all eligible applicants for the first eight qualification tiers in 2024. NMFS is preparing to continue annually issuing permits on a first come, first served basis up to the maximum number authorized by the Council (currently 300). Amendment 7 was part of a comprehensive package of amendments for all four of the Council's FMPs to establish a standardized reporting methodology to assess the amount and type of bycatch occurring in a fishery consistent with Section 303(a)(11) of the Magnuson-Stevens Act. Amendment 7 was approved on July 5, 2022.

1.3. Management Unit Species and Ecosystem Component Species

The HMS currently managed under the FMP are:

- Common thresher shark (*Alopias vulpinus)*
- Shortfin mako shark (bonito shark) (*Isurus oxyrinchus)*
- Blue shark (*Prionace glauca)*

- North Pacific albacore (*Thunnus alalunga)*
- Pacific bluefin tuna (*Thunnus orientalis)*
- Bigeye tuna (*Thunnus obesus)*
- Skipjack tuna (*Katsuwonus pelamis)*
- Yellowfin tuna (*Thunnus albacares)*

- Striped marlin (*Kajikia audax*)
- Swordfish (*Xiphias gladius)*

- Dorado, a.k.a. mahi mahi or dolphinfish (*Coryphaena hippurus)*

In addition, Amendment 2 added eight ecosystem component (EC) species to the FMP. The EC category is identified in the revised National Standard 1 Guidelines. The list was compiled from monitored species previously identified in the plan and by moving two management unit species to the EC category. Amendment 3 added additional EC species as part of ecosystem-based amendments to all four Council FMPs. The EC species are:

- Bigeye thresher shark *(Alopias superciliosus*)
- Common mola (*Mola mola*)
- Escolar (*Lepidocybium flavobrunneum*)
- Lancetfishes (Alepisauridae)
- Louvar (*Luvarus imperialis*)
- Pelagic sting ray (*Dasyetis violacea*)
- Pelagic thresher shark (*Alopias pelagicus*)
- Wahoo (*Acathocybium solandri*)

- Round herring, *Etrumeus teres*
- Thread herring, *Opisthonema libertate, O. medirastre*
- Mesopelagic fishes of the families *Myctophidae*, *Bathylagidae*, *Paralepididae*, and *Gonostomatidae* Pacific sand lance, *Ammodytes hexapterus*
- Pacific saury, *Cololabis saira* Silversides, *Atherinopsidae* Smelts of the family *Osmeridae*
- Pelagic squids (families: *Cranchiidae, Gonatidae, Histioteuthidae, Octopoteuthidae, Ommastrephidae* except Humboldt squid (*Dosidicus gigas*), *Onychoteuthidae*, and *Thysanoteuthidae*)

National Standard Guidelines (50 CFR600 Subpart D) define EC species as "stocks that a Council or the Secretary has determined do not require conservation and management, but desire to list in an FMP in order to achieve ecosystem management objectives" (see 660.305(c)(5) and (d)(13)). Determining whether a stock requires conservation and management is based on factors enumerated at 600.305(c)(1). MSY, OY, and other reference points do not need to be specified for EC species. Identification of EC species will help the Council to track these species over time, periodically evaluate their status, and assess whether any management is needed under the FMP, in which case an EC species could be reclassified as a managed species.

1.4. The Management Cycle

At the September Council meeting in even numbered years a draft SAFE report provides an update to the Council on status of the HMS fisheries and, as appropriate, proposed adjustments to the numerical estimates of maximum sustainable yield (MSY), optimum yield (OY), and status determination criteria (SDC). If necessary, Council directs HMSMT to prepare draft regulatory analysis to implement revised estimates of reference point values, ACLs, or other harvest objectives and/or management measures.

At the November Council meeting in even numbered years a final SAFE report on the status of HMS stocks and fisheries is presented to Council. If necessary, the Council directs HMSMT to prepare a draft regulatory analysis to implement revised estimates of reference point values, ACLs, or other harvest objectives and/or management measures. The Council adopts for public review proposed actions addressing concerns from current and previous SAFE reports.

At the next Council meeting, in March of odd numbered years, the Council adopts final recommendations to NMFS, Department of State, and Congress for international measures to end overfishing and/or rebuild stocks and proposed regulations necessary for domestic fishery management.

Any management measures proposed by the Council are implemented during the next fishing year, which starts on April 1, and stay in effect unless action is taken to modify the action. This process has been used infrequently to make regulatory amendments. Council meetings in 2006 initiated the first biennial management cycle under the HMS FMP. In this first cycle the Council recommended regulatory amendments to change vessel marking requirements (72 FR 43563) and albacore and Pacific bluefin tuna recreational bag limits in Southern California (72 FR 58258). In 2014 the Council considered an adjustment to recreational bag limits for Pacific bluefin tuna in Southern California and recommended reducing the bag limit to two fish per day per angler with a six fish maximum per angler for multi-day trips. This action also included requirements at processing of recreationally-caught bluefin at sea to allow species identification (80 FR 44887). See Section 3.1 for a list of changes to HMS FMP regulations.

1.5. Highly Migratory Species Management Team

As of November 2024 the HMSMT members were:

- Mr. Phillip Dionne, Washington Department of Fish and Wildlife
- Mr. Karter Harmon, NMFS West Coast Region
- Ms. Elizabeth Hellmers, California Department of Fish and Wildlife
- Ms. Amber Rhodes, NMFS West Coast Region
- Mr. Alan Sarich (Chair), Tribal Representative
- Mr. Owyn Snodgrass, NMFS Southwest Fisheries Science Center
- Dr. Stephen Stohs, NMFS Southwest Fisheries Science Center
- Ms. Jessica Watson (Vice-Chair), Oregon Department of Fish and Wildlife

A roster with contact information may be found on the Council website (https://www.pcouncil.org/rosters/).

2. Council HMS Activities in 2023

The Council made the following HMS-related decisions in 2023. (These decision summaries may be found on the Council website.)

2.1. March 2023

2.1.1. International Management Activities

The Council adopted the Highly Migratory Species Advisory Subpanel's (HMSAS) recommendation to communicate the following priorities to NMFS for international decisions in 2023:

- North Pacific albacore: Adopt a harvest control rule at the Inter-American Tropical Tuna Commission (IATTC) and Western and Central Pacific Fisheries Commission (WCPFC) that completes measures passed in 2022 and ensures that management covers the full range of the species, including from 0º to 20º N. latitude throughout the Pacific.
- Pacific bluefin tuna: Acknowledging that the stock is approaching the second rebuilding target, the HMSAS recommended the Council continue to support a precautionary approach for Pacific bluefin tuna. The U.S. delegation should focus on making substantive progress on a comprehensive long-term harvest strategy and East-West allocation as a precondition to any discussions on revisions to current management measures.
- Swordfish: Propose and adopt a measure at WCPFC to cover management from 0º to 20º N. latitude and ensure it is consistent with the measure passed in 2022.
- Circle hooks: Advance a proposal to align guidance on circle hook sizes based on the best available science and advice from relevant working groups.
- North Pacific striped marlin: North Pacific striped marlin in the Western and Central Pacific Ocean is the primary source stock for West Coast Exclusive Economic Zone waters and is an important recreational fishery target. The U.S. delegation should continue to press hard for regional fishery management organization action to address the depleted status of the stock, as delay is likely to worsen the condition of the stock and transfer the conservation burden to future fisherman.

Additional detailed comments are included in the HMSAS Report.

2.1.2. Drift Gillnet Hard Caps Update

In light of passage of the Driftnet Modernization and Bycatch Reduction Act, which amends the Magnuson–Stevens Fishery Conservation and Management Act to prohibit the use of large mesh gillnet gear by December 2027, the Council decided not to proceed with further action to implement hard caps. The Council recognized that hard caps would likely not provide any benefit in terms of reducing high priority protected species mortality/injury over the few seasons they would be in force. In addition, the Council decided its time would be better spent consulting with NMFS on the fishery transition program mandated by the Driftnet Act.

2.2. June 2023

2.2.1. International Management Activities

The Council adopted the following recommendations for U.S. position at upcoming regional fishery management organization meetings.

Eighth Inter-American Tropical Tuna Commission-Western and Central Pacific Fisheries Commission (IATTC-WCPFC) Joint Working Group on Pacific Bluefin Tuna

- Pacific bluefin tuna management strategy evaluation (MSE):
    - Evaluate a fishery impact ratio of 70:30 between the Western and Central Pacific Ocean and Eastern Pacific Ocean. Securing this allocation of opportunity in the long-term harvest strategy should be a key priority in future negotiations.
    - Narrow the list of evaluated reference points and harvest control rules according to U.S. proposal JWG08-DP13 (Supplemental Attachment 2).
    - Prioritize consideration of the safety, status, and stability management objectives and related performance indicators as identified in the April 19, 2023, U.S. Stakeholder Meeting on Harvest Strategy Components for a Management Strategy Evaluation for Pacific Bluefin Tuna.
- Oppose Korea's proposal (JWG08- DP-12, Supplemental Attachment 1) that would exempt fisheries that "do not target Pacific bluefin tuna, such as set net fisheries," from catch limits and increases the percentage of small fish (<30 kg) quota that may be converted to large fish (≥30 kg) quota. These provisions reduce accountability and lack scientific justification.
- Secure adoption of an interim Pacific bluefin harvest strategy with measures to ensure overfishing cannot occur.

WCPFC Northern Committee

- Propose and seek adoption of a complementary measure for the area between equator and 20º N latitude that is consistent with CMM 2022-02 for North Pacific swordfish in the area north of 20º N latitude.

101st Inter-American Tropical Tuna Commission meeting

- Support the recommendations of the General Advisory Committee (GAC) to the U.S. Section to the IATTC and the Scientific Advisory Subcommittee (SAS) to the GAC.

Other Issues

- Consistent with the IATTC SAS recommendation, support scientific studies to determine the stock boundaries of North Pacific striped marlin, noting the unassessed portion occurs in the eastern Pacific Ocean. This would help the U.S. to press for action to address the depleted status in both the eastern Pacific Ocean and Western and Central Pacific Ocean.

2.2.2. Exempted Fishing Permits – Preliminary

The Council made the following recommendations to NMFS on exempted fishing permit (EFP) applications submitted in 2023 and 2022 applications on which the Council had deferred a decision.

1. Do not issue EFPs to Mr. Hemstreet (Attachment 4) and Mr. Efhan (Attachment 5) for standard buoy gear in the Southern California Bight. These applications were for the use of standard deep-set buoy gear (DSBG), which is now authorized under the HMS FMP. The applicants should instead obtain a DSBG-endorsed General HMS Permit, apply for a limited entry permit to fish in the Southern California Bight, or both.

2. Extend Mr. Nathan Perez's night-set buoy gear (NSBG) EFP for another two years (Attachment 3).

3. Approve the 2022 PIER EFP application (Agenda Item I.3, Attachment 6) for Extended-Linked Buoy Gear with 100 percent observer coverage until NMFS determines enough data have been collected, with a minimum of 10 observed sets per vessel.

4. Do not issue EFPs for testing simultaneous deployment of more than 10 pieces of DSBG or NSBG, including those applications submitted to the Council in 2022 for this purpose, which the Council deferred a recommendation on, and the application from Perez, Krebs, and Mintz considered at the June 2023 meeting (Attachment 1) until the authorized fishery has been operational for two seasons.

In addition, for consideration at the September 2023 Council Meeting, the Council requested Mr. Krebs clarify that his request (see Attachment 2) is for his own EFP rather than a modification of another EFP.

2.2.3. Drift Gillnet Bycatch Performance Report

The Council thanked the HMS Management Team for its report (J.4.a, Supplemental HMSMT Report 1). The HMSMT Report showed that in 2021 humpback whale take exceeded the monitoring threshold established by the Council, based on two observed takes. The Council will continue to monitor estimated bycatch to assess whether mitigation measures are warranted, recognizing that the fishery is currently scheduled to permanently close by the end of 2027.

2.2.4. Swordfish Fishery Management Workshop – Scoping

The Council acknowledged that the Swordfish Monitoring and Management Plan (SMMP) still has value but requires significant revision. Therefore, a new document should be developed to replace the SMMP that considers the range of species, in addition to swordfish, that have been economically important in the large mesh drift gillnet fishery. Because this fishery is slated to close, new fishing opportunities must be explored. This could be facilitated by developing priorities and methods for future EFPs.

To begin designing a potential workshop to further these objectives, the Council directed its HMSMT and HMSAS to hold a joint session coincident with the September Council meeting. In planning a workshop, these advisory bodies should consider as topics changes to plan goals reflecting the change in its scope, the design of EFPs addressing revised goals, transition of drift gillnet fishery participants to new gear types, timing and location of a workshop to facilitate stakeholder participation, and how an outside facilitator could help in the design and execution of such a workshop.

2.3. September 2023

2.3.1. NMFS Report

The Council endorsed NMFS's intent to continue observer coverage, as appropriate, for the limited entry deep-set buoy gear fishery in the Southern California Bight but recommended that after an initial period it cease requiring pre-trip notifications by fishery participants, recognizing that the fishery has demonstrated low bycatch through extensive testing under exempted fishing permits.

2.3.2. International Management Activities

The Council endorsed its HMSAS recommendation to communicate the following priorities to NMFS:

- Pacific bluefin tuna
    - Continue to prioritize progress on the long-term harvest strategy through development of the management strategy evaluation (MSE), including providing NMFS Southwest Fisheries Science Center (SWFSC) staff capacity and resources to support MSE analysis.
    - Adopt the Northern Committee (NC) recommendations at the upcoming December 4-8 WCPFC meeting and reject any attempts to negotiate outside of the Pacific Bluefin Joint Working Group (JWG) process.
    - If feasible given time constraints, consider a 2024 workshop with U.S. stakeholders once the preliminary stock assessment information is available (anticipated May 2024).
- North Pacific albacore tuna
    - Support adoption of the NC recommendation.
    - Consider further discussions with U.S. stakeholders regarding potential effort controls as part of the implementation of the new harvest strategy, after the International Scientific Committee/SWFSC does its work advising how fishing intensity should be interpreted to actual management measures under the harvest strategy.
- North Pacific swordfish
    - Adopt the NC recommendation and work with other countries to address the management gap (equator to 20º North) and data collection issues.
- North Pacific striped marlin
    - Adopt a more aggressive rebuilding plan to recover the stock to sustainable levels.

2.3.3. Exempted Fishing Permits – Final

The Council recommended issuance of an exempted fishing permit to Mr. Donald Krebs to test night-set buoy gear with the use of satellite-based electronic monitoring buoys based on his application (Agenda Item J.3, Attachment 2, June 2023) and clarification that he wishes to receive the permit in his own name (Agenda Item I.3, Attachment 1, September 2023).

2.3.4. Driftnet Modernization and Bycatch Reduction Act – Transition Update

The Council deferred engagement in development of the transition program mandated by the Act until NMFS receives funds to implement the program. It recommended adding an item to a 2024 Council meeting to begin scoping an amendment to the HMS FMP. This is necessary to address the prohibition of large mesh drift gillnet gear coming into force in December 2027.

2.3.5. Highly Migratory Species Essential Fish Habitat (EFH) Amendment – Preliminary

The Council adopted the proposed essential fish habitat (EFH) modifications for public review (see Agenda Item I.5, Attachment 1 and Attachment 2). The EFH review team will address comments in Advisory Body reports and develop revised EFH documents and proposed FMP amendment language for final action at the November 2023 meeting.

2.3.6. Opah Stock Considerations

The Council directed its HMSMT to continue gathering information on opah biology, stock structure, status, landings, and any current or planned management by the WPFMC. The Council could then revisit the question of including opah in the HMS FMP at a future meeting.

2.4. November 2023

2.4.1. Highly Migratory Species Essential Fish Habitat (EFH) Amendment – Final

The Council adopted the proposed EFH modifications contained in F.2, Attachment 2 and F.2, Supplemental Revised Attachment 3 as final. These include updated life history summaries, modified spatial extent of HMS EFH, updated Research and Information Needs, and other minor updates. Council staff will compile the documents into a transmittal package to NMFS for Secretarial approval.

2.4.2. Highly Migratory Species Roadmap Workshop

The Council adopted the following goals for the HMS Roadmap:

1. Support innovation and development of multi-species fishing practices which catch swordfish along with a suite of other commercially valuable species (e.g., those in the DGN fishery) to meet the demand for a fresh high-quality product with locally-caught (within the West Coast Exclusive Economic Zone) domestic production.

2. Limit unmarketable, prohibited, and protected species bycatch in HMS fisheries to a predefined acceptable level relative to market species production through mitigation, gear innovation, and accountability measures, where necessary.

3. Support the economic viability of domestic West Coast fisheries that harvest swordfish and other HMS by promoting a wide range of harvest methods, giving due consideration to traditional participants, and increasing future participation.

4. Promote climate-ready HMS fisheries by supporting resilience in fishery operations and fishing communities, flexibility in management approaches, and consideration of climate impacts of fishing operations.

The Council noted that these goals could be further refined based on input received at the November Council meeting and additional HMS Management Team (HMSMT) and HMS Advisory Subpanel (HMSAS) discussion.

The Council directed the HMSMT and HMSAS to continue work on the design of a workshop to further Roadmap goals and report back in March 2024. As part of workshop design, it endorsed the recommendation that the Council should contract with a facilitator.

3. HMS Regulatory Framework

3.1. Changes to HMS FMP Regulations

One rulemaking to modify HMS FMP regulations at 50 CFR 660 Subpart K occurred in 2023. The following regulatory changes have been made since 2004:

Effective Date	Title	Citation
June 7, 2023	Amendment 6 to the Fishery Management Plan for West Coast Fisheries for Highly Migratory Species; Authorization of Deep-Set Buoy Gear	88 FR 29545
September 3, 2020	Protected Species Hard Caps for the California/Oregon Large-Mesh Drift Gillnet Fishery (This rule was vacated in 2021 by court order.)	85 FR 7246
June 6, 2018	Based on recommendations from the Pacific Fishery Management Council (Council), NMFS is issuing regulations under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) to implement Amendment 4 to the Fishery Management Plan for U.S. West Coast Highly Migratory Species (HMS FMP).	83 FR 19981
April 13, 2018	California Drift Gillnet Fishery; Implementation of a Federal Limited Entry Drift Gillnet Permit	83 FR 11146
August 5, 2015	Revision to Prohibited Species Regulations	80 FR 46519
July 7, 2015	Recreational Fishing Restrictions for Pacific Bluefin Tuna	80 FR 44887
2014	Control Date for Large-Mesh Drift Gillnet Limited Entry Program	79 FR 64161
April 18, 2012	Swordfish Retention Limits	77 FR 15973
October 13, 2011	Annual Catch Limits and Accountability Measures	76 FR 56327
September 29, 2009	Collection of a permit fee for vessel owners participating in commercial and charter recreational fishing for highly migratory species (HMS) in the Exclusive Economic Zone (EEZ) off the West Coast of California, Oregon, and Washington.	74 FR 37177
November 14, 2007	Daily bag limits for sport-caught albacore tuna (*Thunnus alalunga*) and bluefin tuna (*Thunnus orientalis*) in the Exclusive Economic Zone (EEZ) off California	72 FR 58258
September 5, 2007	Amend vessel identification regulations of the Fishery Management Plan (FMP) for U.S. West Coast Fisheries for Highly Migratory Species (HMS)	72 FR 43563
June 8, 2007	Amend text in the regulations governing closures of the drift gillnet fishery in the Pacific Loggerhead Conservation Area during El Niño events	72 FR 31756
April 11, 2007	Revise the method for renewing and replacing permits issued under the Fishery Management Plan (FMP) for U.S. West Coast Fisheries for Highly Migratory Species (HMS)	72 FR 10935
May 7, 2004	Implement the approved portions of the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (FMP)	69 FR 18443

3.2. International Management

3.2.1. Regional Fishery Management Organizations

Regional fishery management organizations (RFMOs) are responsible for the conservation and management of fisheries for tunas and other species taken by tuna-fishing vessels both outside and within areas of national jurisdiction. These organizations agree to measures, usually by consensus, which are implemented by member countries for their flag vessels. In the Pacific Ocean the Inter-American Tropical

Tuna Commission (IATTC) and the Western and Central Pacific Fisheries Commission (WCPFC) establish measures within their respective Convention Areas, as illustrated in the figure below. Notice that there is an area of overlap between the two Convention areas in the South Pacific.

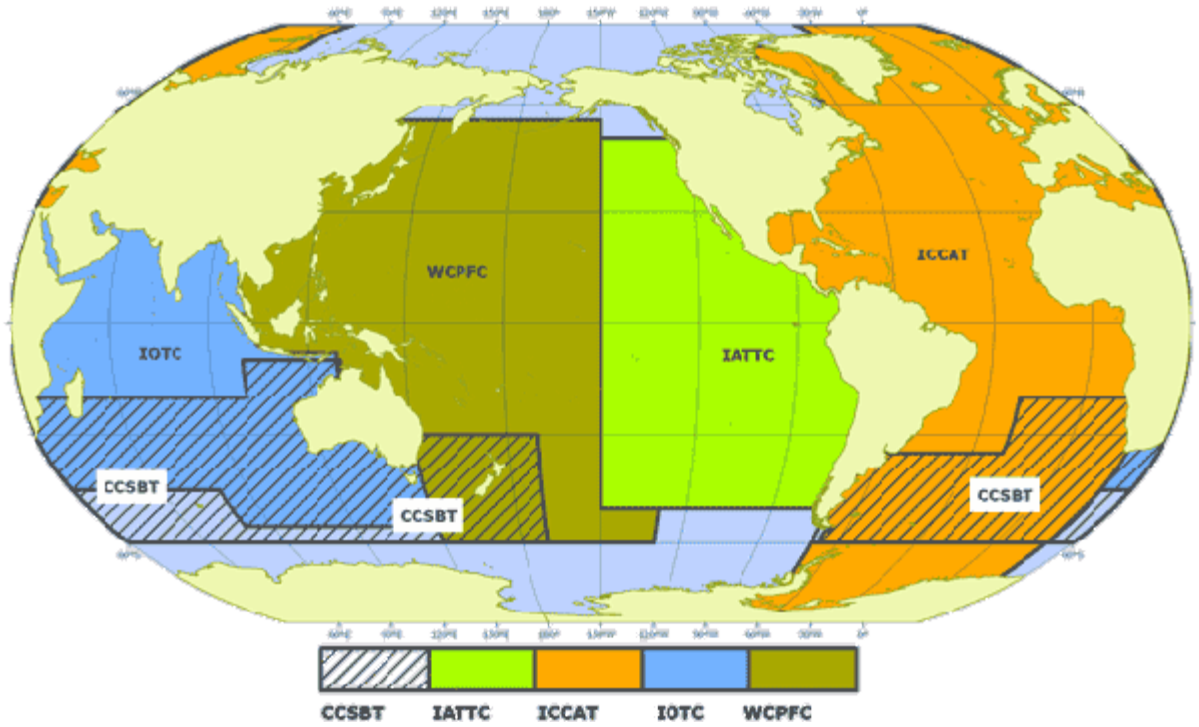


Figure 3-1. Global map of tuna RFMO jurisdictions. (Source: http://firms.fao.org/firms/fishery/459/en#FisheryArea).

West Coast fisheries are more directly affected by IATTC measures since vessels mostly fish within that Convention Area. However, the WCPFC is especially active in managing northern stocks (those predominately occurring north of 20° N. latitude) and specifically North Pacific albacore, Pacific bluefin tuna, and North Pacific swordfish). For these three stocks scientists recognize a single North Pacific stock occurring in both convention areas. Furthermore, under domestic law the Chair of the Pacific Council, or his or her designee, is allocated a spot as a Commissioner for the United States Section to the WCPFC. This provides a direct advisory role for the Pacific Council in policies and proposals that the U.S. may advocate in the WCPFC. The Council frequently provides advice to U.S. delegations to these RFMOs and Council staff attends their meetings.

3.2.2. 2022 IATTC and WCPFC Outcomes

Resolutions adopted at the 101st Regular Meeting of the IATTC (August 7-11, 2023):

- C-23-12 Financing FY 2024
- C-23-11 Vessel Monitoring System (VMS) (replaces C-14-02 Vessel Monitoring System)
- C-23-10 Climate change
- C-23-09 Dolphinfish (Dorado)
- C-23-08 Silky sharks (replaces C-21-06 Silky sharks)
- C-23-07 Sharks
- C-23-06 Harvest Control Rules (replaces C-16-02 Harvest control rules)
- C-23-05 FADs amends C-19-01

- C-23-04 FADS biodegradables
- C-23-03 FADs (replaces C-99-07 FADs)

Conservation measures adopted at the Twentieth Session of the Western and Central Pacific Fisheries Commission (December 4-8, 2023):

- CMM 2023-04 Conservation and Management Measure for the Compliance Monitoring Scheme (Supersedes CMM 2021-03)
- CMM 2023-03 Conservation and Management Measure for North Pacific Swordfish (Supersedes CMM 2022-02)
- CMM 2023-02 Conservation and Management Measure for Pacific Bluefin Tuna (Supersedes CMM 2021-02)
- CMM 2023-01 Conservation and Management Measure for Bigeye, Yellowfin and Skipjack Tuna in the Western and Central Pacific Ocean (Supersedes CMM 2021-01)

3.2.3. Regulations for International HMS Fisheries and Related Activities in the Pacific Published in 2022

The following regulations implementing RFMO decisions were published in 2023. For earlier years consult previous editions of the SAFE.

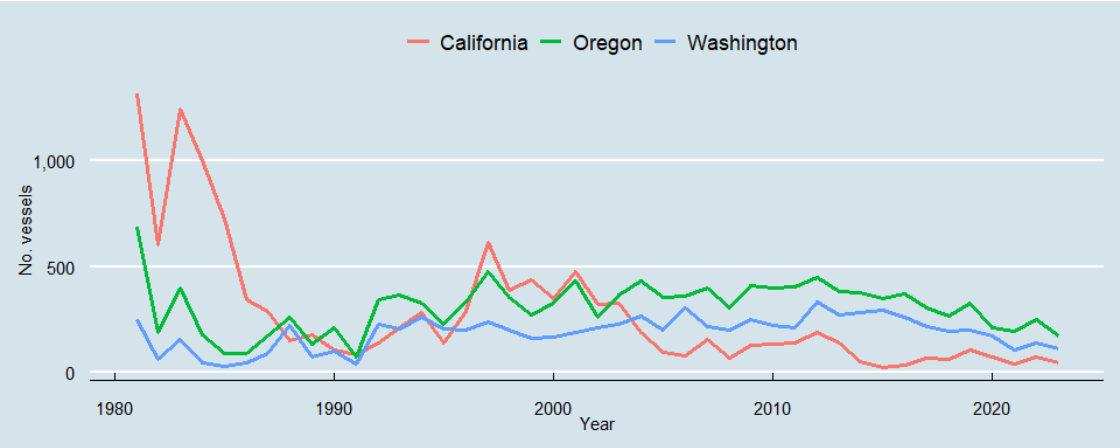
Effective Date	Region	Title	Citation
November 3, 2023	EPO	Inseason Action for 2023-2024 Commercial Pacific Bluefin Tuna Biennial Catch Limit in the Eastern Pacific Ocean	88 FR 69098
June 12, 2023	WCPO	Fish Aggregating Device Design Requirements in Purse Seine Fisheries, IMO Number Requirements, and Bycatch Restrictions	88 FR 30671
February 27, 2023	EPO	2022-2024 In-Season Action Announcement Procedures for Commercial Pacific Bluefin Tuna in the Eastern Pacific Ocean	88 FR 5273

4. Commercial Fisheries

4.1. HMS Fishery Descriptions

4.1.1. Surface hook-and-line fishery for albacore

This has been an economically valuable fishery for all three West Coast states for more than 100 years. The closure of West Coast canneries in the early 1980s led to precipitous drop in the number vessels landing albacore. In recent years landings have been concentrated in the Oregon ports of Newport and Astoria and the Washington ports of Westport and Ilwaco. This long-term northward shift in fishing effort into waters off Oregon and Washington, where albacore have been more available, is thought to be due to changing oceanographic conditions. In recent years lower operating costs and better landing facilities in Oregon and Washington compared to California also may have contributed to this shift. The following graph, showing the number of U.S. vessels in the albacore fishery making landings by year, illustrates these trends.



Troll and bait boat (live bait) are the principal commercial gears, although some albacore is incidentally caught by purse seine, longline, and large mesh drift gillnet gears. Oceanographic conditions influence the occurrence of fish within range of the West Coast fleet, but a typical season runs July through October, with landings peaking in August-September. This fishery lands albacore almost exclusively with little incidental catch.

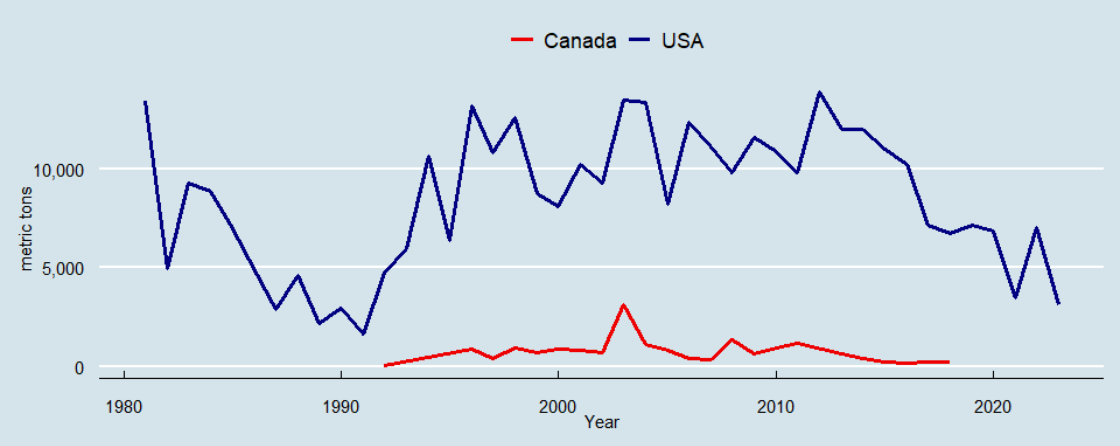
The HMS FMP requires a federal permit with a surface hook-and-line gear endorsement for all U.S. commercial and recreational charter fishing vessels that fish for HMS within the West Coast exclusive economic zone (EEZ, from 3– 200 nautical miles from the West Coast) and for U.S. vessels that pursue HMS on the high seas (seaward of the EEZ) and land their catch in California, Oregon, or Washington.

Albacore is mostly landed fresh or frozen, with a portion of the catch then exported to overseas markets for processing.

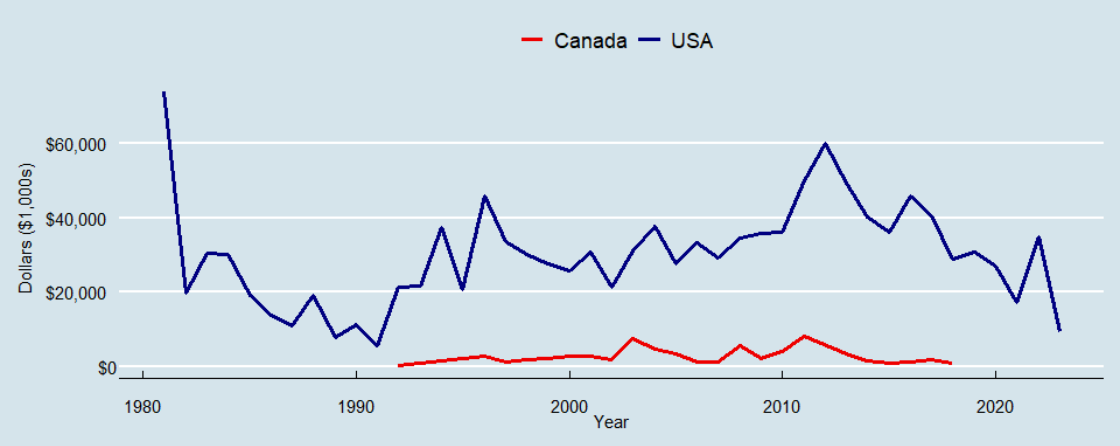
A treaty between the governments of the U.S. and Canada allows vessels from each country to fish in the other country's EEZ outside of 12 miles. Vessels also have port privileges and Canadian vessels may land albacore in designated ports. For more information, see the NOAA Fisheries website.

In 2023 the fishery landed 3,161 mt of albacore valued at $9.32 million. This was less than 2022 when the fishery landed 7,028 mt valued at $34.73 million. Over the past 10 years the number of vessels participating in the fishery has varied from 294 to 604.

The following figure shows albacore landings in metric tons since 1981 through last year by U.S. and Canadian vessels. Note that confidential data (i.e., landings with less than three vessels or processors) is excluded in this figure. Less than three Canadian vessels made landings, or less than three processors received landings from those vessels, throughout the 1980s.



This figure shows inflation-adjusted ex-vessel revenue from albacore for the same time period. As in the previous figure, confidential data is excluded in this figure.



4.1.2. Drift gillnet fishery for swordfish and shark

This gear consists of floating gillnet panels suspended vertically in the water column to catch pelagic species. It has a minimum stretched mesh size of 17 inches and a single set of the gear may not exceed 6,000 feet in length. The gear is set at night targeting thresher shark and swordfish. In recent decades swordfish has emerged as the dominant target species, likely due to its higher value compared to thresher shark and possibly shark conservation measures implemented in the 1990s.

Although historically operating as far north as Oregon, today fishing occurs south of Monterey, mainly in the Southern California Bight in the fall and winter.

The fishery originally developed in the 1980s and has been in steady decline in terms of participation and catch since then. This decline is at least in part due to restrictions on the operation of the fishery to mitigate catch of marine mammals and sea turtles.

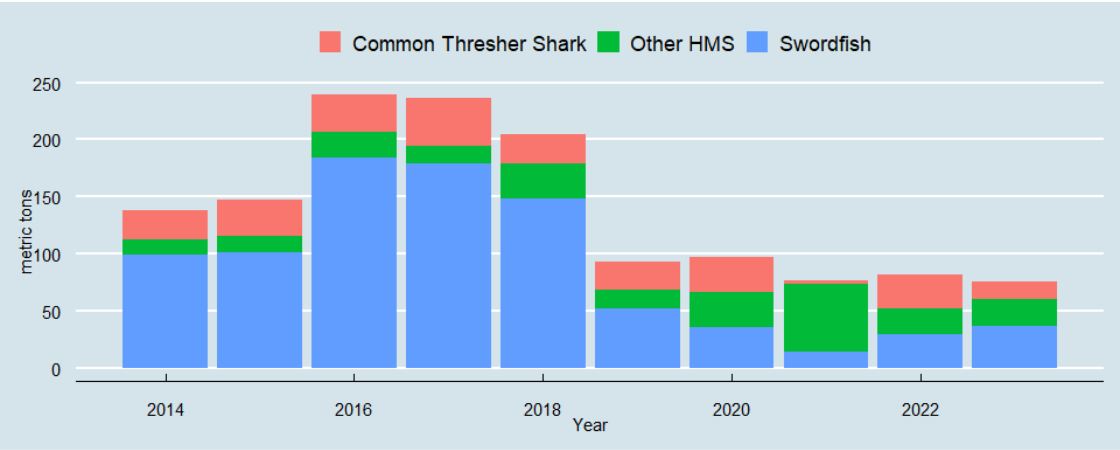
Both Federal and California limited entry permits are required to participate. The federal limited entry permit was implemented in 2018 through Amendment 5 to the HMS FMP. It mirrors many of the features of the state limited entry permit and is required to fish in federal waters. In addition to these limited entry permits, the HMS FMP requires a general HMS permit with a drift gillnet gear endorsement for all U.S. vessels that fish for HMS within the West Coast EEZ and California requires a general resident or non-resident commercial fishing license, general gillnet permit, and a current vessel registration to catch and land fish caught in drift gillnet gear.

In September 2018 California enacted Senate Bill 1017, which created a program to phase out the fishery by 2024. The program includes a mechanism to buy back state limited entry drift gillnet permits along with the surrender of drift gillnet gear for destruction. The Federal limited entry permit also must be surrendered to participate in the program. In December 2022 Congress enacted the Driftnet Modernization and Bycatch Reduction Act, which amends the Magnuson-Stevens Act to prohibit the use of large mesh drift gillnet gear five years after enactment (i.e., in December 2027). The Act also directs NMFS to implement a transition program that will compensate fishery participants for the cost of permits, surrendered drift gillnet gear, and purchase of alternative low bycatch gear.

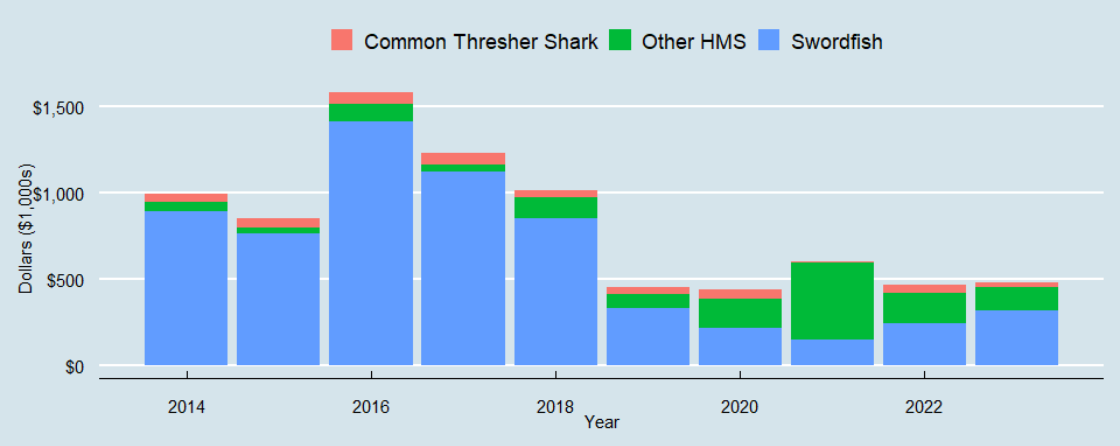
Seasonal temperature fronts that concentrate feed for swordfish are a major influence on fishing activity but regulatory time-area closures also have a big influence on seasonal patterns. The fishery is closed in the West Coast EEZ from February 1 to April 30 and closed within 75 nautical miles of the mainland shore from May 1 through August 14. For this reason almost all fishing effort occurs after August 15. This fishery is then effectively closed in an area north of Point Conception from August 15 to November 15 to protect leatherback sea turtles (the Pacific Leatherback Conservation Area). As a result, landings mostly occur from November through January. The fishery also may be closed in an area south of Point Conception from June 1 to August 31 to protect Pacific loggerhead turtles during El Niños.

In the last 10 years DGN landings of HMS management unit species have varied between 75 mt and 239 mt while inflation-adjusted ex-vessel revenue has varied between $435,342 and $1,582,288. In 2023 the fishery landed 75 mt valued at $477,517. This was less than 2022 when 82 mt, worth $462,833 was landed. During that period the number of vessels participating in the fishery varied from 6 to 21.

The following figure shows HMS landings in the large mesh drift gillnet grouped by common thresher shark, swordfish, and other HMS for the past 10 years.



This figure shows inflation-adjusted revenue from HMS over the same time period.



4.1.3. Harpoon fishery for swordfish

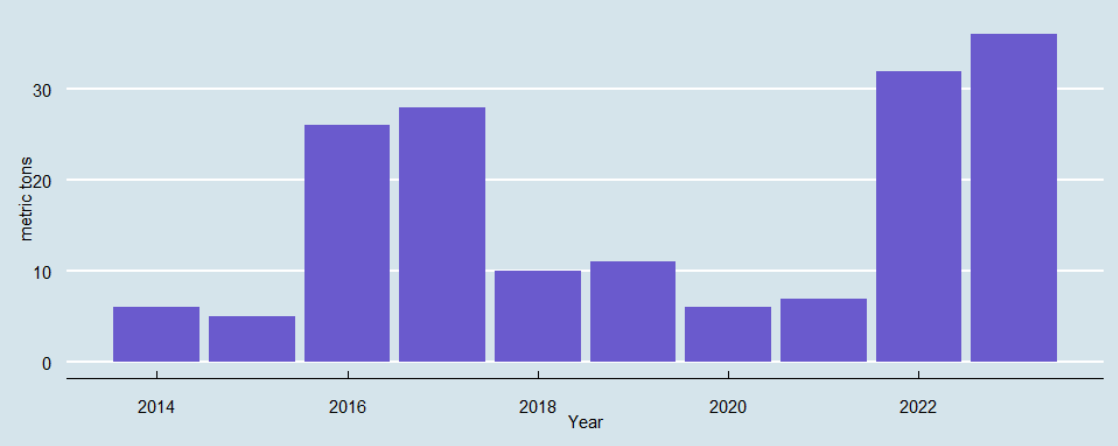
California's modern harpoon fishery for swordfish developed in the early 1900s. Prior to 1980, harpoon and hook-and-line were the only legal gears for commercially harvesting swordfish. At that time, harpoon gear accounted for the majority of swordfish landings in California ports. But the development of the drift gillnet fishery in the 1980s supplanted harpoon gear as the main swordfish fishery. The pelagic longline fishery has also become a larger source of swordfish landings on the West Coast in recent years. As a result, participation in this fishery has declined.

The fishery typically occurs in the Southern California Bight from May to December, with landings peaking in August, depending on weather conditions and the availability of fish in coastal waters. Some vessel operators work in conjunction with a spotter airplane to increase the search area and to locate swordfish difficult to see from the vessel. This practice tends to increase the catch-per-unit-effort compared to vessels that do not use a spotter plane, but at higher operating cost.

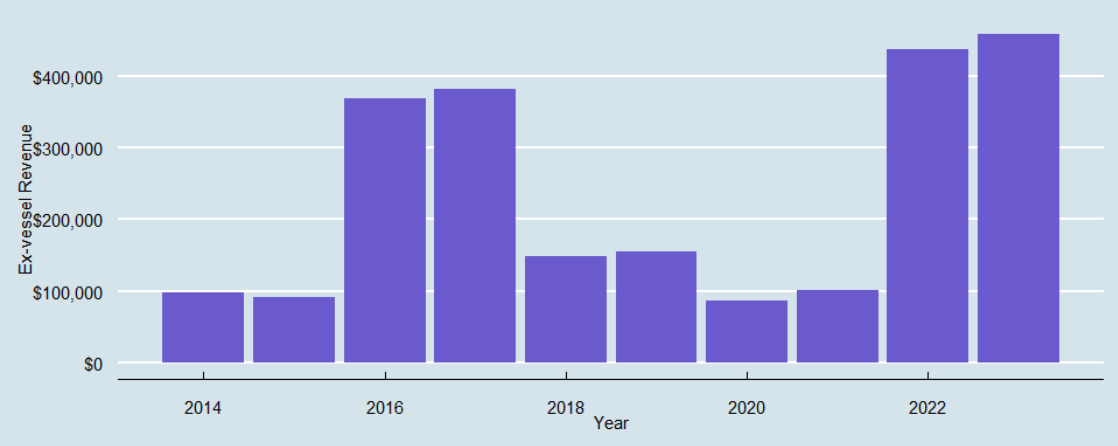
A state permit and logbook are required to participate in the harpoon fishery in addition to a general resident or non-resident commercial fishing license and a current CDFG vessel registration along with the federal general HMS permit.

In the past 10 years harpoon fishery landings of swordfish have varied between 5 mt and 36 mt while inflation-adjusted ex-vessel revenue has varied between $87,381 and $457,347. In 2023 the fishery landed 36 mt valued at $457,347 compared to 32 mt valued at $436,823 in 2022. During that period the number of vessels participating in the fishery varied from 11 to 21.

The figure below shows harpoon fishery swordfish landings, in metric tons, over the past 10 years.



This figure shows inflation-adjusted ex-vessel revenue from swordfish over the same period.



4.1.4. High seas longline fishery for swordfish, tuna, and opah

The HMS FMP prohibits pelagic longline fishing within the EEZ. (Commercial landings of striped marlin, an incidentally caught species, are also prohibited on the West Coast.) Pelagic longline vessels fishing outside the West Coast EEZ land swordfish and tuna in West Coast ports, mainly San Francisco, Los Angeles, and San Diego. Historically, pelagic longline vessels landing on the West Coast have been based in Honolulu but in recent years some vessels have made San Diego their home port.

The HMS FMP prohibits targeting swordfish with pelagic longline gear. However, vessels possessing a Hawaii longline limited access permit may land swordfish at West Coast ports. More than four-fifths of vessels landing on the West Coast possess a Hawaii permit.

In recent years pelagic longline has accounted for about two-thirds of total West Coast swordfish landings and a quarter of tuna landings, other than albacore tuna.

In the last 10 years the number of pelagic longline vessels making landings of HMS and opah on the West Coast has varied from 9 to 23. Landings composition has shifted from swordfish to tunas and other species over the decade. In 2014 swordfish accounted for 54% and tunas 26% of the 763 mt in landings of HMS and opah made by this fishery. In 2023 swordfish accounted for 5% while tunas accounted for 86% of the 414 mt in landings of HMS and opah. Opah, which is not a management unit species in the HMS FMP, is

also a significant component of landings. In 2023 at 31 mt it accounted for 7% of landings of HMS and opah.

Figure 4-1. Landings trends for tuna, swordfish, opah, and other HMS in metric tons, over the past 10 years.

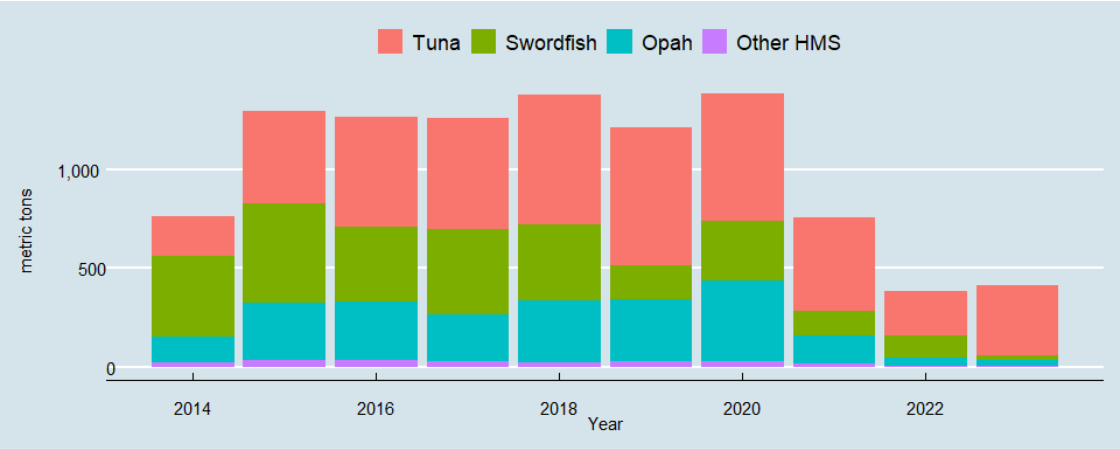
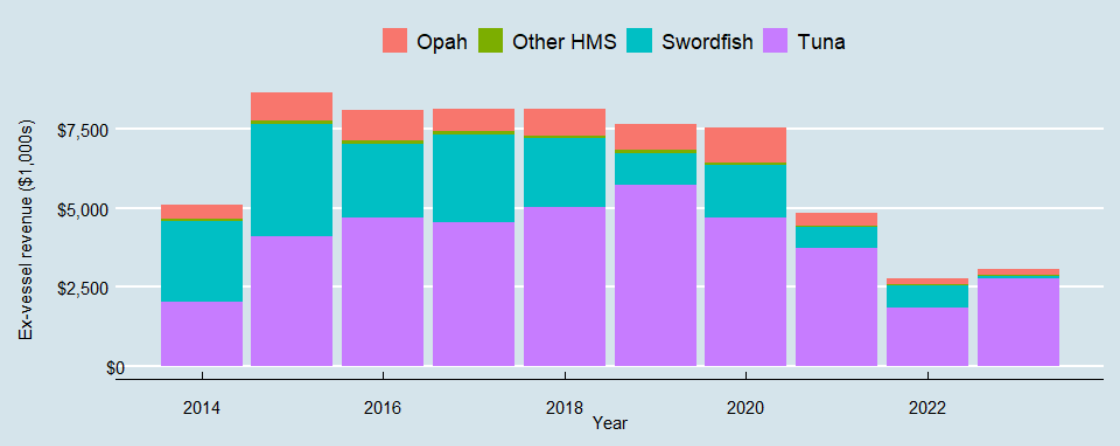


Figure 4-2. Inflation-adjusted ex-vessel revenue for tuna, swordfish, opah, and other HMS in $1,000s, last 10 years.



4.1.5. Coastal purse seine fishery for yellowfin, skipjack, and bluefin tunas

This fishery is prosecuted by small coastal purse seine vessels operating in the Southern California Bight from May to October. These vessels usually target small pelagic species, such as Pacific mackerel, Pacific sardine, anchovy, and market squid. However, they will target more tropically distributed yellowfin and skipjack tunas when intrusions of warm water from the south, typically during periodic El Niño episodes, bring these species within range of this coastal fleet. Similarly, purse seine vessel operators will target the higher-valued temperate water Pacific bluefin tuna when they enter the coastal waters of the Southern California Bight. In recent years, the availability of Pacific bluefin in Southern California has increased substantially and has comprised about 15% of landings.

Between 2014 and 2023 purse seine fishery HMS landings have varied between 167 mt and 2,500 mt while inflation-adjusted ex-vessel revenue has varied between $200,761 and $3,274,735. (Earlier years are excluded due to data confidentiality requirements.) In 2023 the fishery landed 167 mt valued at $200,761. This compares to 602 mt in 2022. During the past 10 years the number of vessels participating in the fishery varied from 3 to 14.

Figure 4-3. Purse seine fishery landings of HMS tunas, in metric tons, between 2014 and 2023. (Some years are excluded due to data confidentiality requirements.)

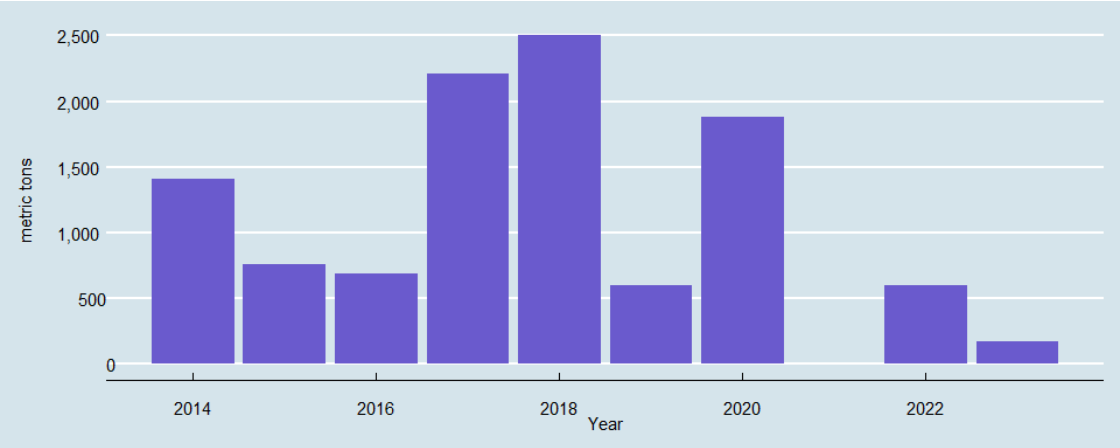
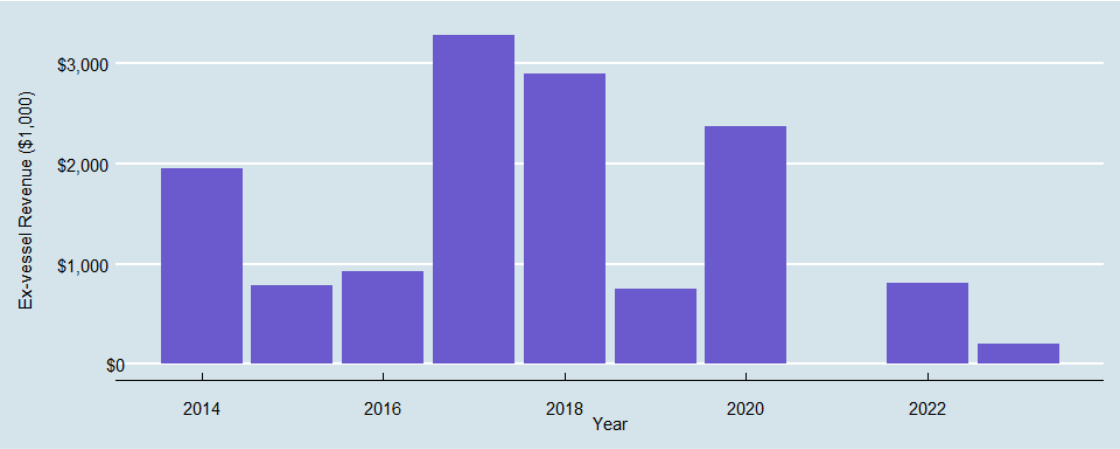


Figure 4-4. Inflation-adjusted ex-vessel revenue from HMS tunas for the fishery, between 2014 and 2023. (Some years are excluded due to data confidentiality requirements.)



4.1.6. Deep-set buoy gear

Beginning in 2010 the Pfleger Institute of Environmental Research (PIER) began design and testing of deep-set buoy gear (DSBG) as a low bycatch method to catch swordfish. The design was inspired by gear used off the east coast of Florida, but both the gear and deployment method were modified to suit conditions on the West Coast. PIER first presented preliminary results to the Council in March 2012 after the first year of research trials. In March 2015 PIER submitted an exempted fishing permit (EFP) application for review by the Council. Under its proposal up to five commercial vessels would be authorized to test the gear with PIER researchers monitoring their activity. (Two other individuals independently applied for EFPs to test the gear type at this time.) While fishing under the PIER EFP continued, the Council began actively soliciting EFP applications to expand the number of vessels testing the gear. At the same time, the Council began scoping an FMP amendment to make DSBG a legal gear along with associated fishery management measures. Since then, the Council has reviewed and made recommendations on over 100 EFP applications to test DSBG and related gear configurations and NMFS has issued permits to more than 50 vessels. To date 42 vessels have made landings with the gear.

Two DSBG gear configurations have been tested. So-called standard DSBG consists of independently deployed pieces of gear. Each piece consists of a set of floats at the surface that allows fish strikes on the

gear to be detected, a weighted vertical line that puts up to three hooks below surface waters where sea turtles and marine mammals typically occur, or at least 100 meters (55 fathoms, 328 feet) below the surface. The terms of the EFPs allow no more than 10 pieces of gear to be deployed at any one time and the gear must be monitored during deployment. Strike detection leading to fast gear retrieval, deployment at depth, and active monitoring contribute to low bycatch with this gear. PIER subsequently developed a linked buoy gear configuration intended for larger vessels and greater production. Each piece of linked gear consists of two buoy and vertical line sets joined by a horizontal line at depth with three hooks attached to it by branch lines. Each of these gear pieces is joined by a horizontal line at least 11 meters (36 feet) below the surface. As with the standard configuration, no more than 10 pieces may be deployed at any time and the gear must be actively monitored. The figure below shows these gear configurations.

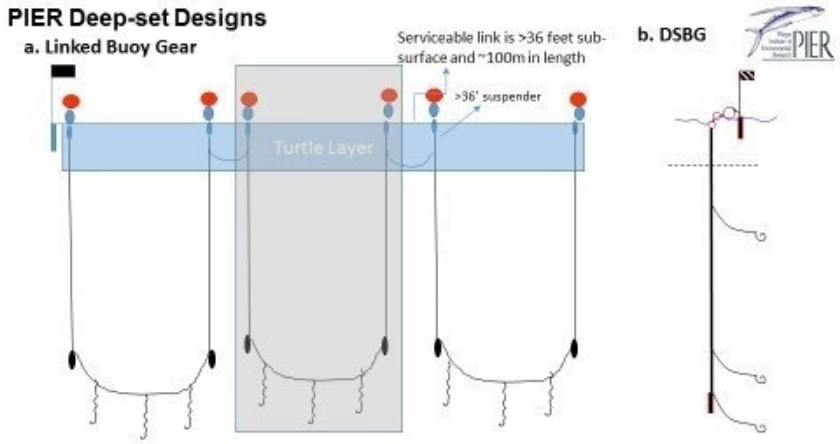


Figure 4-5. Standard and linked DSBG configurations

In September 2019 and March 2020 the Council adopted an FMP Amendment (Amendment 6) describing management measures including a limited entry permit program for vessels fishing in the Southern California Bight. The FMP Amendment was approved by NMFS for review and regulations authorizing the gear went into place in 2023. The process to issue limited entry permits began in September 2023. In the interim NMFS will renew current EFPs to allow fishing to continue in the Southern California Bight until these permits are issued.

Between 2015 and 2023 DSBG HMS landings (including LBG) have varied from 12 mt in 2015 and 125 mt in 2020. Inflation adjusted ex-vessel revenue from HMS varied between $132,589 and $1,227,470. During the past 10 years the number of vessels participating in the fishery varied from 2 to 26.

Figure 4-6. The following figure shows HMS landings in metric tons during this period.

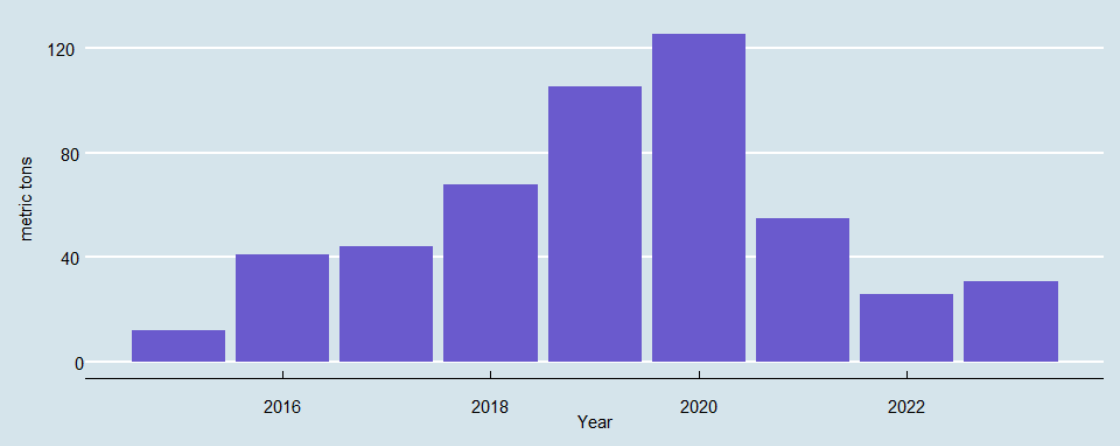
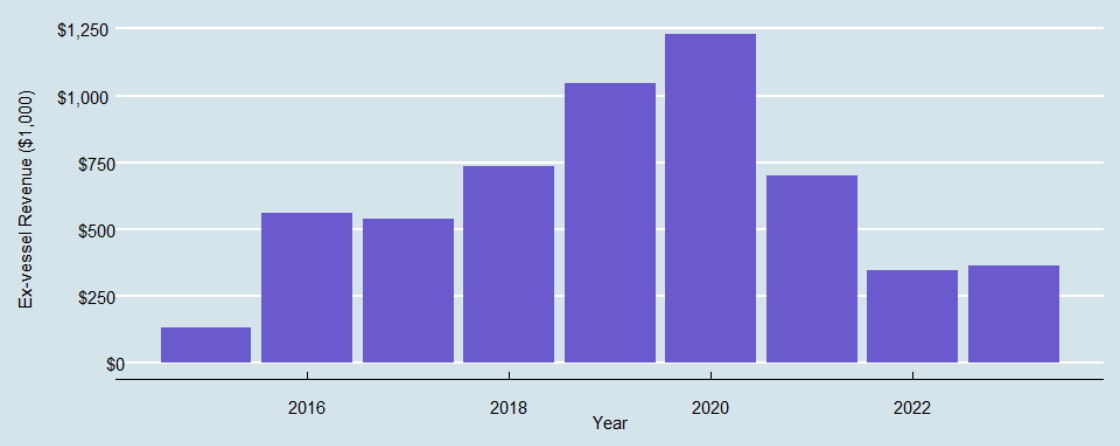


Figure 4-7. This figure shows the resulting inflation adjusted ex-vessel revenue ($1,000s) from HMS for the same time period.



4.2. Participation by fishery

The following figure shows trends in the number of vessels making HMS landings by fishery over the last 10 years.

Figure 4-8.

4.3. Seasonality of HMS landings

Landings in HMS fisheries vary throughout the year. This seasonal pattern of HMS landings is shown in the following two figures showing average monthly landings over the past 10 years. (Landings in the albacore surface fishery are shown separately because they are at much larger scale than the other HMS fisheries.) Overall, landings have been highest in August at 3,419 mt. and lowest in May at 104 mt.

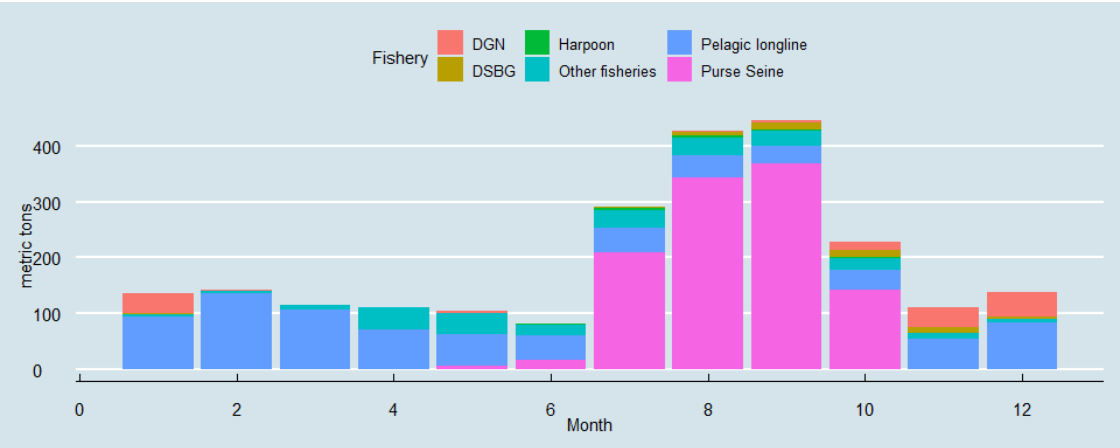


Figure 4-9. Average monthly landings by fishery, 2014-2023.

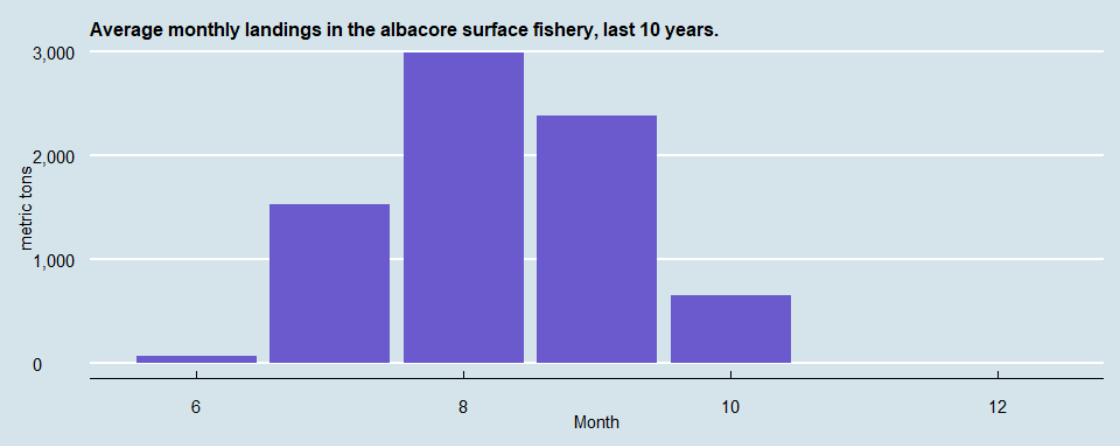


Figure 4-10. Average monthly landings in the albacore surface fishery, 2014-2023.

4.4. Commercial Fisheries Landings by Species

The figures on this page present information on HMS landings over the last 10 years, or 2014 - 2023. Confidential data (less than 3 vessels or dealers) is excluded from the figures and any reported values.

4.4.1. HMS landings and revenue compared to other species groups

The graph below shows landings in metric tons and inflation-adjusted ex-vessel revenue from species managed under the Council's four FMPs. For HMS this has varied from $18 million to $58 million during this period. As a portion of total West Coast ex-vessel revenue (including species not managed under Council FMPs) this equates to between 3% and 8%.

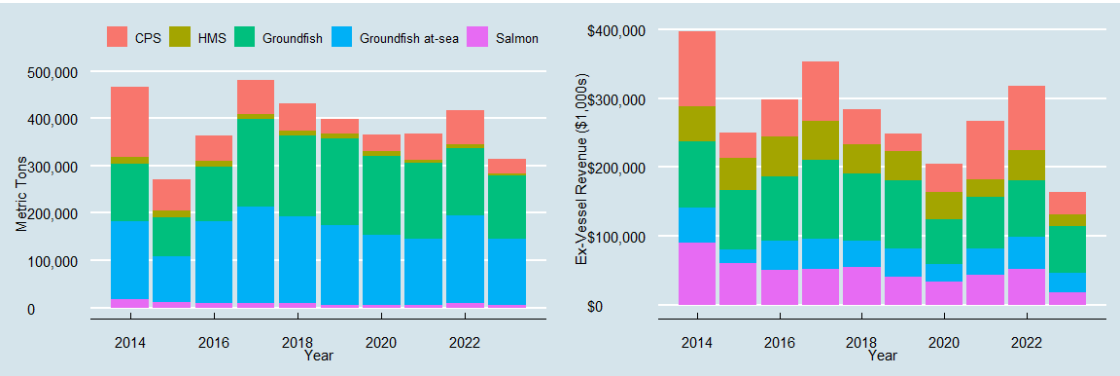


Figure 4-11. Inflation-adjusted ex-vessel revenue by species group.

4.5. North Pacific albacore tuna

In 2023 albacore landings totaled 3,298 metric tons worth $9,609,997 compared to 7,212 metric tons worth $35,707,971 in 2022. The following figure shows albacore landings (mt) and inflation-adjusted ex-vessel revenue ($1,000s) by year.

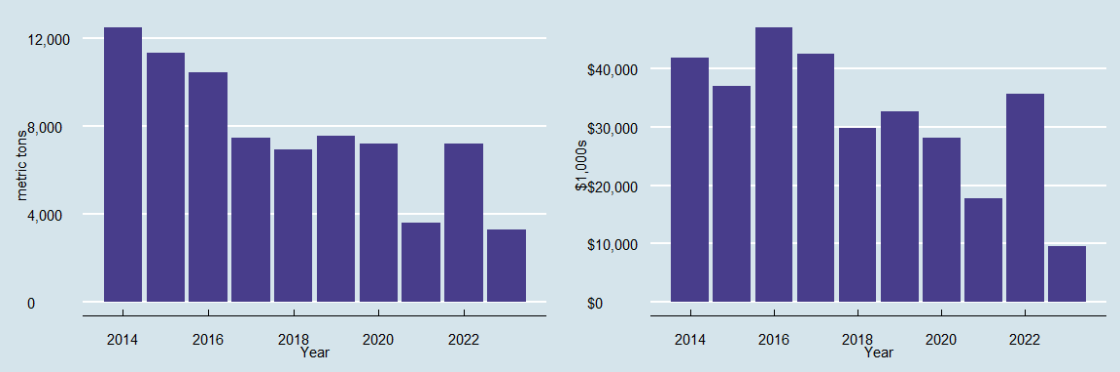


Figure 4-12. North Pacific albacore landings, mt (left), and revenue, current dollars, $1,000s (right).

4.6. Swordfish

In 2023 swordfish landings totaled 97 metric tons worth $874,928 compared to 179 metric tons worth $1,440,224 in 2022. The following figure shows landings (mt) and inflation-adjusted ex-vessel revenue ($1,000s) by year.

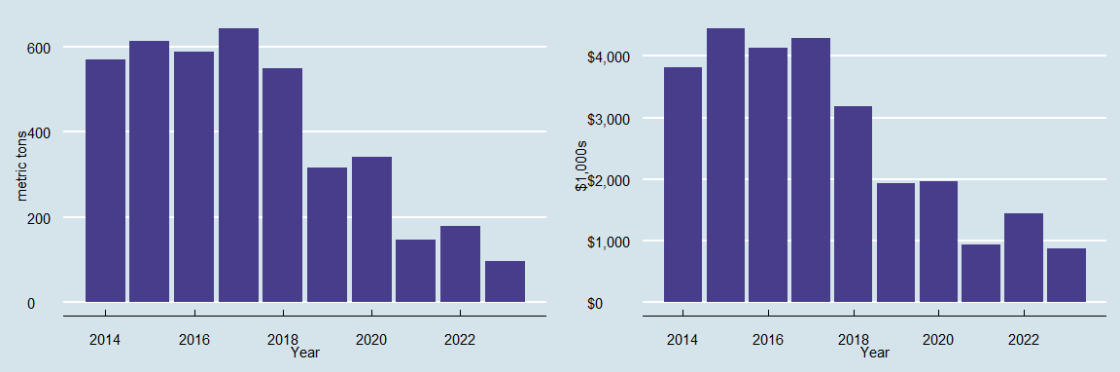


Figure 4-13. Swordfish landings, mt (left), and revenue, current dollars, $1,000s (right).

4.7. Tunas (other than albacore)

In 2023 landings of bigeye, bluefin, skipjack, and yellowfin tunas totaled 850 metric tons worth $6,756,426 compared to 1,088 metric tons worth $5,484,895 in 2022. The following figure shows landings (mt) and inflation-adjusted ex-vessel revenue ($1,000s) by year.

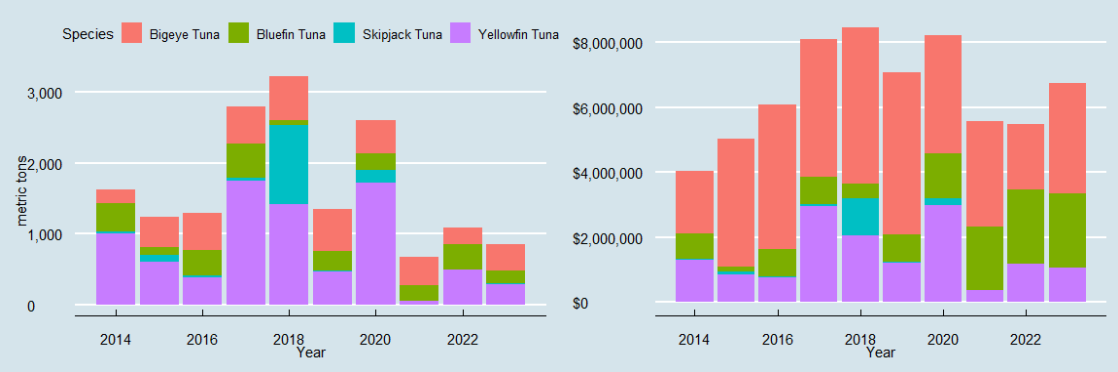


Figure 4-14. Landings of tunas, excluding albacore, metric tons (left) and inflation-adjusted ex-vessel revenue (right).

The following figure shows Pacific bluefin tuna landings by selected gear types over the past 10 years. Pacific bluefin catch is subject to trip limits in order to comply with catch limits pursuant to an Inter-American Tropical Tuna Commission Resolution. (Unreported confidential data is indicated by * and the excluded fishery.) During this period Purse seine has accounted for most landings, amounting to 69% of the total followed by HMS Hook and Line fishery at 24% and DGN at 6%.

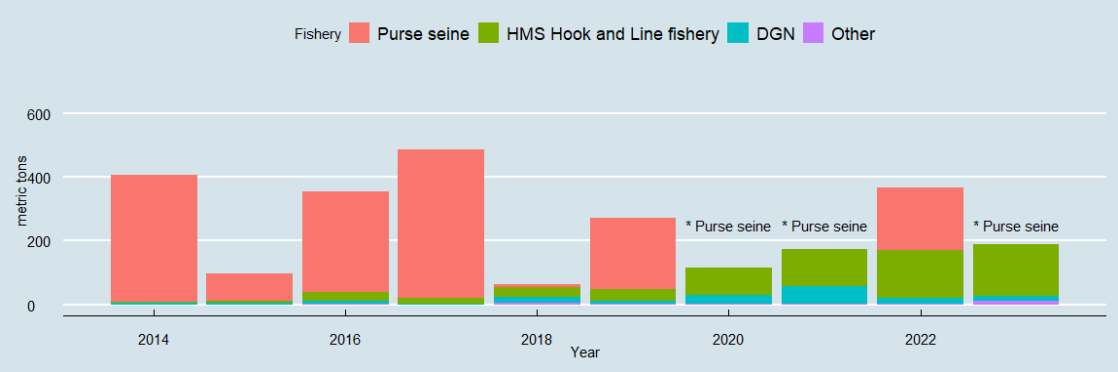


Figure 4-15

4.8. Sharks

In 2023 landings of common thresher and shortfin mako sharks totaled 43 metric tons worth $83,189 compared to 50 metric tons worth $88,813 in 2022. The following figure shows landings (mt) and inflation-adjusted ex-vessel revenue for these species by year.

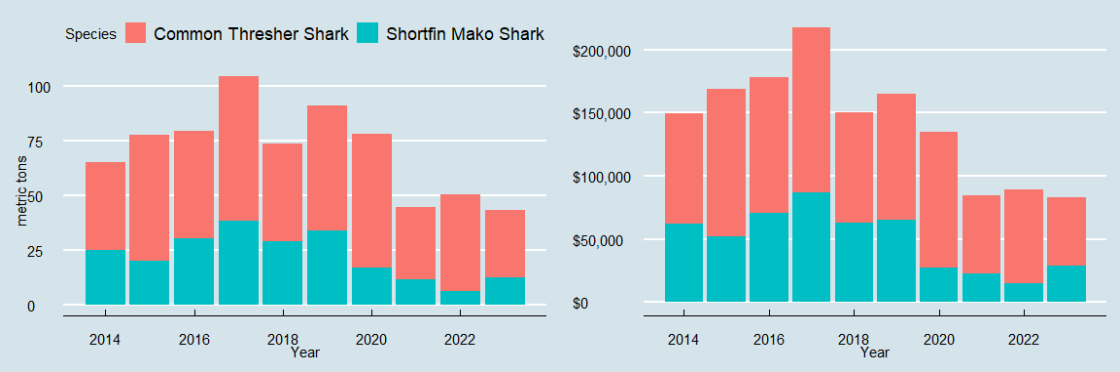


Figure 4-16. Landings of common thresher and shortfin mako sharks, metric tons (left) and inflation-adjusted ex-vessel revenue (right)

4.9. Other species

Blue shark and dorado landings are relatively modest in commercial fisheries compared to other HMS. In 2023 blue shark landings amounted to 2 metric tons worth $373 while dorado landings amounted 10 metric tons worth $65,272. This compares to landings of 3 metric tons worth $614 for blue shark and 15 metric tons worth $117,424 for dorado in 2022. The following figure shows landings (mt) and inflation-adjusted ex-vessel revenue for these species by year.

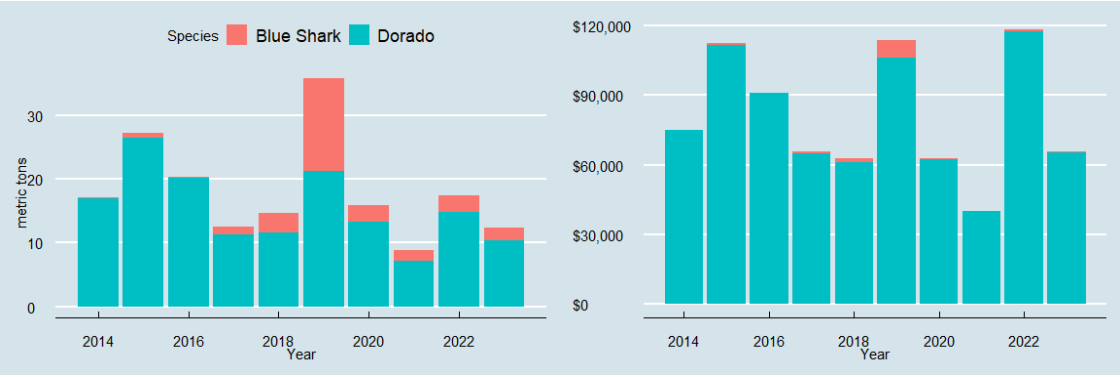


Figure 4-17. Landings of blue shark and dorado, metric tons.

4.10. Summaries of commercial fishery catch, revenue, and effort (PacFIN data)

4.10.1. HMS SAFE Data Portal

PacFIN data for the HMS SAFE is available through the HMS SAFE Portal hosted on the Pacific Fisheries Information Network (PacFIN) website. This HMS SAFE Portal, developed and maintained by PacFIN, provides a point of public access to HMS fisheries landings, revenues and participation data. This Portal supplements information provided on the Council website. In addition, APEX report HMS006 tracks cumulative landings during the current year by species and fisheries up to the most recent landing date entered in the PacFIN database.

For easy reference, six summary tables showing landings, revenue, and price per pound for HMS management unit species by species and fishery are found below. (Note that the reports in the HMS SAFE Portal may present data for different species groupings, in which case the totals will not match.)

Confidential values (less than 3 vessels or dealers) are not reported and the cells are denoted by "C". Values less than 0.5 are rounded to 0. Blank cells indicate null value (no data exist for that stratum).

4.10.2. Data for HMS Species

Table 4-1. West Coast commercial landings (round mt) of HMS by all HMS and non-HMS gears, 1981 - 2023.

Year	Albacore	Bigeye Tuna	Bluefin Tuna	Skipjack Tuna	Yellowfin Tuna	Unsp. Tuna	Swordfish	Blue Shark	Common Thresher Shark	Shortfin Mako Shark	Dorado/ Dolphinfish
1981	13,712	1,168	868	57,869	76,090	40	749	92	1,521	182	4
1982	5,410	968	2,404	41,904	61,769	51	1,112	27	1,848	351	1
1983	9,578	21	764	44,995	55,740	55	1,763	7	1,331	217	1
1984	12,654	126	635	31,251	35,062	1,014	2,889	2	1,279	160	4
1985	7,301	7	3,254	2,977	15,024	468	3,418	1	1,190	149	0
1986	5,243	29	4,731	1,361	21,517	143	2,530	2	974	312	C
1987	3,159	50	823	5,724	23,201	129	1,803	2	562	403	C
1988	4,912	6	804	8,863	19,520	11	1,636	3	500	322	0
1989	2,214	1	1,019	4,505	17,615	77	1,358	6	504	255	0
1990	3,028	2	925	2,256	8,509	46	1,236	20	357	373	1
1991	1,676	7	104	3,407	4,177	11	1,029	1	584	219	0
1992	4,902	7	1,087	2,586	3,350	10	1,546	1	292	142	3
1993	6,166	26	559	4,539	3,795	16	1,767	0	275	122	17
1994	10,751	47	916	2,111	5,056	33	1,700	12	330	128	41
1995	6,530	49	714	7,037	3,038	1	1,162	5	270	95	5
1996	14,173	62	4,688	5,455	3,347	3	1,198	1	319	96	10
1997	11,292	82	2,251	6,070	4,775	11	1,459	1	320	132	5
1998	13,915	53	1,949	5,846	5,799	12	1,408	3	361	100	3
1999	9,782	108	186	3,758	1,353	12	2,033	0	321	63	17
2000	9,071	84	312	780	1,159	1	2,657	1	296	80	43
2001	11,194	53	196	58	655	1	2,205	2	373	46	16
2002	10,031	10	11	236	544	2	1,726	41	301	82	0
2003	16,668	35	36	349	465	C	2,135	1	301	70	6

Year	Albacore	Bigeye Tuna	Bluefin Tuna	Skipjack Tuna	Yellowfin Tuna	Unsp. Tuna	Swordfish	Blue Shark	Common Thresher Shark	Shortfin Mako Shark	Dorado/ Dolphinfish
2004	14,540	22	10	307	488	9	1,184	1	115	54	1
2005	9,055	C	207	523	285	C	297	1	179	33	0
2006	12,786	C	1	48	77	C	541	0	160	46	3
2007	11,594	C	45	5	104	C	550	10	204	45	2
2008	11,137	27	1	3	65	1	531	0	148	35	2
2009	12,310	C	415	5	45		414	1	106	31	1
2010	11,856	C	1	C	1	C	370	0	96	22	4
2011	11,050	46	118	1	4	C	620	0	77	19	3
2012	13,935	49	43	1	2		403	0	70	27	10
2013	12,944	C	10	1	6	C	533	0	71	31	1
2014	12,467	185	408	19	1,009	1	574	0	40	25	17
2015	11,316	440	98	110	596	1	624	1	58	20	26
2016	10,451	523	356	36	379	1	629	0	50	30	20
2017	7,462	520	486	42	1,748	C	686	1	66	38	11
2018	6,953	615	65	1,124	1,417		616	3	45	29	12
2019	7,563	598	274	19	460		421	15	57	34	21
2020	7,183	473	231	179	1,719		465	3	62	17	13
2021	3,592	405	217	3	53		200	2	34	12	7
2022	7,212	232	368	C	488	C	205	3	44	6	15
2023	3,298	367	191	1	291		127	2	31	13	10

Table 4-2. West Coast real commercial ex-vessel revenues (inflation adjusted, 2022, $1,000s) from HMS landings by all HMS and non-HMS gears, 1981-2023.

Year	Albacore	Bigeye Tuna	Bluefin Tuna	Skipjack Tuna	Yellowfin Tuna	Unsp. Tuna	Swordfish	Blue Shark	Common Thresher Shark	Shortfin Mako Shark	Dorado/ Dolphinfish
1981	$75,249	$4,453	$3,515	$188,181	$280,075	$206	$9,518	$168	$4,186	$461	$8
1982	$21,464	$3,228	$7,188	$108,236	$198,979	$264	$13,670	$50	$5,292	$906	$3
1983	$31,475	$118	$2,733	$94,233	$152,912	$246	$17,483	$12	$3,790	$591	$2
1984	$42,711	$433	$2,246	$61,531	$91,929	$6,429	$28,845	$6	$4,076	$471	$11
1985	$19,952	$43	$6,783	$5,096	$35,344	$2,475	$32,277	$5	$4,372	$464	$1
1986	$14,568	$213	$10,933	$2,133	$42,631	$467	$30,009	$3	$3,987	$1,010	C
1987	$11,799	$406	$4,734	$10,186	$64,149	$1,031	$25,578	$4	$2,725	$1,646	C
1988	$20,268	$58	$4,603	$20,562	$60,088	$179	$21,606	$5	$2,178	$1,445	$1
1989	$8,097	$5	$2,720	$8,438	$44,543	$272	$17,666	$7	$2,020	$1,182	$1
1990	$11,590	$18	$2,370	$3,915	$19,349	$117	$14,737	$21	$1,317	$1,524	$4
1991	$5,631	$85	$232	$5,369	$7,970	$42	$12,647	$2	$1,932	$828	$2
1992	$22,393	$87	$2,203	$2,751	$7,171	$41	$14,755	$4	$905	$451	$12
1993	$22,284	$403	$1,433	$6,254	$9,185	$138	$17,057	$1	$873	$422	$80
1994	$37,652	$573	$3,122	$3,266	$8,434	$103	$17,897	$30	$1,090	$461	$140
1995	$21,132	$472	$1,932	$8,678	$5,560	$9	$11,996	$5	$873	$302	$10
1996	$48,837	$467	$7,240	$7,151	$5,796	$51	$10,878	$1	$1,082	$300	$18
1997	$35,126	$634	$4,890	$9,704	$8,799	$39	$10,838	$1	$1,042	$401	$19

Year	Albacore	Bigeye Tuna	Bluefin Tuna	Skipjack Tuna	Yellowfin Tuna	Unsp. Tuna	Swordfish	Blue Shark	Common Thresher Shark	Shortfin Mako Shark	Dorado/ Dolphinfish
1998	$32,953	$474	$5,172	$9,092	$10,223	$108	$10,432	$10	$1,091	$307	$18
1999	$30,406	$1,130	$1,525	$4,724	$2,458	$104	$14,516	$0	$1,061	$191	$82
2000	$28,881	$953	$909	$812	$2,080	$4	$19,820	$1	$961	$222	$106
2001	$33,948	$526	$768	$55	$765	$3	$14,373	$2	$977	$124	$33
2002	$23,066	$139	$68	$208	$953	$10	$10,372	$30	$815	$201	$1
2003	$38,713	$417	$118	$254	$712	C	$12,469	$1	$771	$183	$16
2004	$42,371	$228	$59	$169	$690	$85	$7,465	$1	$305	$152	$9
2005	$31,214	C	$205	$438	$473	C	$2,847	$1	$407	$87	$2
2006	$34,571	C	$6	$59	$254	C	$3,997	$0	$439	$116	$26
2007	$30,657	C	$82	$6	$212	C	$4,434	$3	$478	$111	$14
2008	$40,083	$285	$5	$5	$174	$5	$3,287	$0	$389	$91	$13
2009	$38,100	C	$611	$7	$230		$2,695	$3	$272	$76	$6
2010	$40,322	C	$8	C	$9	C	$3,005	$0	$216	$44	$22
2011	$57,917	$436	$321	$2	$18	C	$4,476	$0	$137	$51	$15
2012	$60,157	$482	$126	$2	$17		$2,742	$0	$149	$69	$47
2013	$54,134	C	$89	$4	$53	C	$3,484	$0	$160	$79	$7
2014	$41,889	$1,925	$796	$19	$1,299	$5	$3,889	$0	$88	$62	$75
2015	$36,988	$3,929	$167	$94	$837	$8	$4,573	$1	$118	$52	$112
2016	$46,948	$4,430	$851	$42	$749	$2	$4,685	$0	$109	$69	$91
2017	$42,586	$4,241	$859	$52	$2,957	C	$4,829	$1	$131	$87	$65
2018	$29,802	$4,787	$470	$1,141	$2,048		$3,921	$2	$88	$63	$61
2019	$32,646	$4,990	$859	$23	$1,214		$2,975	$8	$100	$65	$106
2020	$28,055	$3,645	$1,378	$195	$2,998		$3,192	$0	$107	$28	$62
2021	$17,704	$3,259	$1,960	$9	$362		$1,631	$0	$64	$23	$40
2022	$35,708	$2,012	$2,296	C	$1,178	C	$1,787	$1	$74	$15	$118
2023	$9,610	$3,423	$2,262	$4	$1,070		$1,238	$0	$54	$30	$65

Table 4-3. Average price-per-pound (inflation-adjusted dollars, 2022) from HMS landings by all HMS and non-HMS gears, 1981-2022.

Year	Albacore	Bigeye Tuna	Bluefin Tuna	Skipjack Tuna	Yellowfin Tuna	Unsp. Tuna	Swordfish	Blue Shark	Common Thresher Shark	Shortfin Mako Shark	Dorado/ Dolphinfish
1981	$2.49	$1.73	$1.84	$1.48	$1.67	$2.36	$8.35	$0.82	$2.12	$1.66	$0.95
1982	$1.80	$1.51	$1.36	$1.17	$1.46	$2.36	$8.08	$0.85	$2.21	$1.70	$1.02
1983	$1.49	$2.51	$1.62	$0.95	$1.24	$2.01	$6.52	$0.81	$2.20	$1.79	$1.37
1984	$1.53	$1.56	$1.60	$0.89	$1.19	$2.87	$6.57	$1.55	$2.46	$1.94	$1.36
1985	$1.24	$2.91	$0.95	$0.78	$1.07	$2.40	$6.21	$2.01	$2.83	$2.05	$2.14
1986	$1.26	$3.36	$1.05	$0.71	$0.90	$1.48	$7.80	$0.88	$3.17	$2.13	C
1987	$1.69	$3.70	$2.61	$0.81	$1.25	$3.63	$9.33	$1.09	$3.54	$2.69	C
1988	$1.87	$4.10	$2.60	$1.05	$1.40	$7.40	$8.68	$0.70	$3.41	$2.95	$3.10
1989	$1.66	$3.76	$1.21	$0.85	$1.15	$1.61	$8.56	$0.55	$3.08	$3.04	$1.25
1990	$1.74	$3.67	$1.16	$0.79	$1.03	$1.15	$7.84	$0.49	$2.85	$2.69	$2.64
1991	$1.52	$5.30	$1.01	$0.71	$0.87	$1.67	$8.08	$1.21	$2.55	$2.49	$3.26

Year	Albacore	Bigeye Tuna	Bluefin Tuna	Skipjack Tuna	Yellowfin Tuna	Unsp. Tuna	Swordfish	Blue Shark	Common Thresher Shark	Shortfin Mako Shark	Dorado/ Dolphinfish
1992	$2.07	$5.93	$0.92	$0.48	$0.97	$1.84	$6.28	$1.15	$2.38	$2.09	$1.71
1993	$1.64	$7.16	$1.16	$0.62	$1.10	$3.93	$6.35	$1.17	$2.44	$2.27	$2.16
1994	$1.59	$6.88	$1.55	$0.70	$0.76	$1.46	$6.93	$1.20	$2.55	$2.37	$1.70
1995	$1.47	$5.53	$1.23	$0.56	$0.83	$3.55	$6.78	$0.62	$2.46	$2.08	$0.91
1996	$1.56	$4.21	$0.70	$0.59	$0.79	$7.31	$5.92	$0.58	$2.59	$2.05	$0.90
1997	$1.41	$3.80	$0.99	$0.73	$0.84	$1.65	$4.87	$0.45	$2.50	$1.99	$1.82
1998	$1.08	$4.72	$1.21	$0.72	$0.80	$4.51	$4.79	$1.73	$2.30	$2.00	$2.63
1999	$1.42	$5.22	$3.77	$0.57	$0.82	$4.22	$4.68	$0.24	$2.23	$1.99	$2.30
2000	$1.44	$6.14	$1.34	$0.47	$0.81	$1.95	$4.91	$0.72	$2.26	$1.82	$1.32
2001	$1.38	$5.27	$1.79	$0.43	$0.53	$2.85	$4.29	$0.45	$1.97	$1.76	$0.98
2002	$1.04	$6.72	$2.80	$0.40	$0.80	$2.85	$3.95	$0.49	$2.09	$1.61	$1.98
2003	$1.05	$5.55	$1.48	$0.33	$0.69	C	$3.84	$0.34	$1.97	$1.73	$1.25
2004	$1.32	$5.03	$2.84	$0.25	$0.66	$4.21	$4.15	$0.66	$2.04	$1.83	$3.57
2005	$1.56	C	$0.45	$0.38	$0.75	C	$6.31	$0.33	$1.75	$1.70	$3.93
2006	$1.23	C	$3.28	$0.56	$1.55	C	$4.85	$0.52	$2.11	$1.66	$4.24
2007	$1.20	C	$0.83	$0.55	$0.92	C	$5.31	$0.13	$1.81	$1.64	$3.41
2008	$1.63	$4.73	$2.57	$0.78	$1.22	$3.53	$4.07	$0.89	$2.03	$1.70	$3.23
2009	$1.40	C	$0.67	$0.65	$2.39		$4.29	$1.48	$1.97	$1.63	$3.94
2010	$1.54	C	$2.97	C	$5.72	C	$5.34	$0.45	$1.72	$1.34	$2.93
2011	$2.38	$5.40	$1.23	$0.93	$2.41	C	$4.75	$0.42	$1.37	$1.73	$2.32
2012	$1.96	$5.39	$1.33	$1.01	$5.06		$4.48	$0.02	$1.57	$1.66	$2.28
2013	$1.90	C	$3.94	$2.03	$4.04	C	$4.30	$0.19	$1.73	$1.69	$3.53
2014	$1.52	$4.72	$0.88	$0.44	$0.58	$1.90	$4.46	$0.05	$1.67	$1.65	$2.00
2015	$1.48	$4.14	$0.77	$0.39	$0.64	$4.78	$4.82	$0.36	$1.56	$1.69	$1.92
2016	$2.04	$3.86	$1.09	$0.54	$0.90	$0.83	$4.90	$0.08	$1.69	$1.52	$2.05
2017	$2.59	$3.70	$0.80	$0.56	$0.77	C	$4.63	$0.33	$1.52	$1.49	$2.62
2018	$1.94	$3.54	$3.36	$0.46	$0.66		$4.19	$0.24	$1.51	$1.42	$2.38
2019	$1.96	$4.04	$1.44	$0.56	$1.22		$4.64	$0.27	$1.33	$1.27	$2.39
2020	$1.77	$3.77	$2.76	$0.49	$0.80		$4.52	$0.04	$1.34	$1.09	$2.30
2021	$2.24	$4.01	$4.26	$1.17	$3.26		$5.38	$0.05	$1.43	$1.33	$2.64
2022	$2.25	$4.16	$2.88	C	$1.10	C	$5.72	$0.11	$1.27	$1.66	$3.65
2023	$1.32	$4.34	$5.52	$1.84	$1.68		$6.40	$0.08	$1.35	$1.55	$2.96

4.10.3. Data for HMS Fisheries

Table 4-4. West Coast commercial HMS landings (round mt) by HMS fishery, 1990-2023. (Albacore hook-and-line fishery U.S. vessels only.)

Year	Albacore hook-and-line	Drift gillnet	Harpoon	Pelagic longline	Purse seine	Deep-set buoy gear	Other HMS landings
1990	2,976	1,521	67	C	6,517		5,532
1991	1,654	1,462	21	C	6,671		1,182
1992	4,704	1,669	78	54	5,762		1,347
1993	5,952	1,935	170	203	5,577		3,381

Year	Albacore hook-and-line	Drift gillnet	Harpoon	Pelagic longline	Purse seine	Deep-set buoy gear	Other HMS landings
1994	10,649	1,114	158	902	5,369		2,803
1995	6,408	1,080	99	355	8,840		1,826
1996	13,209	1,133	82	438	12,238		1,249
1997	10,832	1,145	87	760	11,539		1,554
1998	12,628	1,317	49	591	10,519		3,077
1999	8,769	843	82	1,392	4,026		1,675
2000	8,081	729	90	2,097	2,173		320
2001	10,264	586	53	2,008	805		193
2002	9,301	480	90	1,386	C		127
2003	13,488	443	107	1,852	862		115
2004	13,367	271	70	969	770		104
2005	8,217	387	77	C	1,006		22
2006	12,374	576	75	C	C		37
2007	11,151	670	59	C	223		28
2008	9,798	525	49	94	C		47
2009	11,624	325	51	144	460		38
2010	10,891	119	38	318			29
2011	9,832	206	25	557	C		18
2012	13,885	178	5	370	C		29
2013	12,031	179	7	460			20
2014	12,017	138	6	636	1,413	C	77
2015	11,026	146	5	1,006	758	12	46
2016	10,240	239	26	970	686	41	56
2017	7,180	236	28	1,029	2,206	44	68
2018	6,719	205	10	1,069	2,500	68	73
2019	7,162	93	11	897	598	105	197
2020	6,851	97	7	971	1,882	125	137
2021	3,493	76	7	618	C	55	216
2022	7,028	83	32	342	602	26	377
2023	3,160	74	36	383	167	31	452

Table 4-5.West Coast commercial HMS ex-vessel revenue (inflation adjusted, 2023, $1,000s) by HMS fishery, 1990-2023. (Albacore hook-and-line fishery U.S. vessels only.)

Year	Albacore hook-and-line	Drift gillnet	Harpoon	Pelagic longline	Purse seine	Deep-set buoy gear	Other HMS landings
1990	$11,370	$14,692	$1,124	C	$13,869		$13,398
1991	$5,550	$13,376	$363	C	$11,768		$2,595
1992	$21,352	$13,852	$1,156	$599	$8,839		$3,838
1993	$21,609	$14,876	$2,162	$2,071	$8,901		$8,276
1994	$37,315	$9,828	$2,377	$7,676	$9,972		$5,121
1995	$20,744	$9,413	$1,395	$2,642	$13,449		$2,648
1996	$45,733	$8,630	$1,141	$2,992	$18,055		$1,966
1997	$33,683	$7,442	$1,214	$4,449	$20,130		$3,029
1998	$29,956	$8,227	$705	$4,068	$18,441		$5,460

Year	Albacore hook-and-line	Drift gillnet	Harpoon	Pelagic longline	Purse seine	Deep-set buoy gear	Other HMS landings
1999	$27,480	$5,486	$1,058	$9,593	$5,869		$4,114
2000	$25,760	$4,608	$1,263	$15,018	$3,341		$1,602
2001	$30,898	$2,969	$772	$12,231	$1,149		$579
2002	$21,320	$2,961	$1,096	$6,980	C		$377
2003	$31,084	$2,303	$1,335	$9,774	$989		$429
2004	$37,537	$1,723	$1,040	$5,297	$827		$270
2005	$27,742	$2,188	$1,066	C	$1,071		$67
2006	$33,198	$3,258	$996	C	C		$129
2007	$29,293	$3,988	$848	C	$408		$90
2008	$34,615	$2,673	$636	$518	C		$181
2009	$35,823	$1,689	$649	$864	$646		$118
2010	$36,093	$674	$500	$2,351			$86
2011	$49,791	$1,257	$339	$3,686	C		$52
2012	$59,880	$1,234	$84	$2,282	C		$93
2013	$49,177	$1,094	$110	$2,856			$89
2014	$40,197	$997	$99	$4,659	$1,946	C	$389
2015	$36,057	$853	$92	$7,779	$785	$133	$242
2016	$45,732	$1,582	$368	$7,139	$922	$560	$441
2017	$40,573	$1,232	$382	$7,438	$3,275	$540	$421
2018	$28,704	$1,014	$150	$7,300	$2,899	$736	$480
2019	$30,715	$449	$156	$6,843	$745	$1,047	$1,107
2020	$26,818	$435	$88	$6,437	$2,373	$1,227	$1,208
2021	$17,242	$599	$102	$4,431	C	$700	$1,873
2022	$34,729	$463	$437	$2,581	$804	$348	$3,293
2023	$9,310	$478	$457	$2,894	$201	$366	$3,948

Table 4-6. Average price-per-pound (inflation adjusted dollars, 2023) from HMS landings by fishery, 1990-2023. (Albacore hook-and-line fishery U.S. vessels only.)

Year	Albacore hook-and-line	Drift gillnet	Harpoon	Pelagic longline	Purse seine	Deep-set buoy gear	Other HMS landings
1990	$1.73	$6.40	$10.98	C	$0.97		$1.12
1991	$1.52	$6.19	$11.43	C	$0.80		$1.04
1992	$2.06	$5.40	$9.71	$6.94	$0.70		$1.32
1993	$1.65	$4.87	$8.37	$5.99	$0.72		$1.12
1994	$1.59	$5.76	$9.91	$5.44	$0.84		$0.84
1995	$1.47	$5.65	$9.29	$4.72	$0.69		$0.66
1996	$1.57	$4.85	$9.11	$4.33	$0.67		$0.72
1997	$1.41	$4.20	$9.18	$3.71	$0.79		$0.89
1998	$1.08	$3.99	$9.49	$4.29	$0.81		$0.81
1999	$1.43	$4.06	$8.49	$4.32	$0.66		$1.19
2000	$1.45	$4.07	$9.18	$4.62	$0.70		$3.03
2001	$1.37	$3.26	$9.62	$3.93	$0.65		$1.74
2002	$1.04	$4.09	$7.97	$3.30	C		$2.08
2003	$1.05	$3.52	$8.21	$3.44	$0.52		$2.42

Year	Albacore hook-and-line	Drift gillnet	Harpoon	Pelagic longline	Purse seine	Deep-set buoy gear	Other HMS landings
2004	$1.27	$4.18	$9.80	$3.55	$0.50		$1.63
2005	$1.53	$3.79	$9.10	C	$0.48		$2.03
2006	$1.22	$3.79	$8.79	C	C		$2.42
2007	$1.19	$4.02	$9.38	C	$0.83		$2.29
2008	$1.60	$3.44	$8.62	$3.14	C		$2.61
2009	$1.40	$3.45	$8.40	$3.61	$0.64		$2.07
2010	$1.50	$3.84	$8.69	$4.61			$2.14
2011	$2.30	$3.97	$8.93	$4.22	C		$2.03
2012	$1.96	$4.56	$10.09	$3.82	C		$1.76
2013	$1.85	$4.07	$10.97	$3.96			$2.67
2014	$1.52	$4.80	$10.20	$4.18	$0.62	C	$3.10
2015	$1.48	$3.90	$11.17	$4.22	$0.47	$7.49	$2.81
2016	$2.03	$4.36	$9.22	$3.83	$0.61	$8.95	$4.10
2017	$2.56	$3.51	$8.92	$3.80	$0.67	$8.06	$3.40
2018	$1.94	$3.19	$9.72	$3.51	$0.53	$7.13	$3.44
2019	$1.95	$3.19	$9.15	$3.90	$0.57	$6.55	$3.38
2020	$1.78	$2.78	$8.48	$3.53	$0.57	$6.48	$4.56
2021	$2.24	$4.08	$9.38	$3.75	C	$8.39	$4.28
2022	$2.24	$3.55	$8.85	$3.95	$0.61	$8.73	$4.18
2023	$1.34	$3.97	$8.31	$3.54	$0.55	$7.75	$4.17

5. HMS Recreational Fisheries Description and Recent Catch and Effort

Washington recreational HMS fishery statistics are available from PSMFC through their Recreational Fisheries Information Network (RecFIN) website. RecFIN provides estimates based on field sampling of HMS catch and telephone survey for effort. While RecFIN also contains estimates for Oregon, ODFW's Ocean Recreational Boat Survey (ORBS) data are used here given nuances in recreational fishery sector differentiation. RecFIN does not contain estimates of HMS catch and effort for California, and CDFW similarly provides data from its Marine Logbook System (MLS) and California Recreational Fishing Survey (CRFS) estimates.

5.1. Albacore

Recreational anglers fishing from private vessels and from commercial passenger fishing vessels (CPFVs) target albacore in all three West Coast states. Albacore is targeted almost exclusively with rod-and-reel gear, and success is highly dependent upon the distance from port to the fish, weather and ocean conditions, and fuel prices.

In recent years albacore typically begin to show up within range of the recreational fishery in California in late spring, migrating northward and appearing off Oregon and Washington in mid to late June, and are available through late September or early October in most years.

5.1.1. Fishery performance

The following tables show recreational albacore catch, fishing effort, and catch per unit of effort (tables updated 09/28/2023).

Note: California and Oregon record catch and effort by angler day. Washington records catch and effort by angler trip, although the majority of trips are equal to one day. With very infrequent exceptions, the duration of Oregon recreational fishing trips by private anglers and by charter anglers is 24 hours or less, and encompasses one day of fishing activity. NAs represent data that are not collected/able to be calculated. Zeros represent no catch.

Table 5-1 (Table R1a). Recreational albacore catch (number of kept fish) for charter and private boats by year and port, 2021-2023 for trips targeting tuna.

Port Area	2021			2022			2023		
	Charter	Private	Combined	Charter	Private	Combined	Charter	Private	Combined
North Coast	0	42	42	0	942	942	0	282	282
Westport	3,405	3,115	6,520	10,350	24,389	34,739	7,210	16,086	23,296
Ilwaco	928	3,242	4,170	3,046	12,636	15,682	1,700	8,535	10,235
Washington Subtotal	**4,333**	**6,399**	**10,732**	**13,396**	**37,967**	**51,363**	**8,910**	**24,903**	**33,813**
Astoria	0	53	53	0	1,841	1,841	0	560	560
Pacific City	0	122	122	0	182	182	0	403	403
Garibaldi	59	1,437	1,496	0	5,446	5,446	365	5,359	5,724
Depoe Bay	36	1,045	1,081	396	2,494	2,890	912	1,784	2,696
Newport	56	2,157	2,213	168	4,369	4,537	786	11,976	12,762
Florence	0	186	186	0	0	0	0	0	0
Winchester Bay	0	4,948	4,948	0	619	619	0	1,295	1,295
Coos Bay	52	7,144	7,196	0	3,268	3,268	20	12,218	12,238

Port Area	2021			2022			2023		
	Charter	Private	Combined	Charter	Private	Combined	Charter	Private	Combined
Bandon	83	243	326	0	0	0	163	369	532
Gold Beach	0	0	0	0	0	0	0	0	0
Brookings	245	3,730	3,975	167	2,873	3,040	126	166	292
Oregon Subtotal	**531**	**21,065**	**21,596**	**731**	**21,092**	**21,823**	**2,372**	**34,130**	**36,502**
Redwood District	373	9,269	9,642	2,036	4,738	6,774	253	2,257	2,510
Wine District	55	0	55	377	24,940	25,317	1,270	14,653	15,923
San Francisco District	10	0	10	15	270	285	266	57	323
Central District	0	0	0	0	0	0	12	0	12
Channel District	0	0	0	0	0	0	0	0	0
South District	0	0	0	7	0	7	66	0	66
California Subtotal	**438**	**9,269**	**9,707**	**2,435**	**29,948**	**32,383**	**1,867**	**16,967**	**18,834**
Mex	0	0	0	0	0	0	0	0	0
Mexico Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Oregon-Washington Total	**4,864**	**27,464**	**32,328**	**14,127**	**59,059**	**73,186**	**11,282**	**59,033**	**70,315**
U.S. Total	**5,302**	**36,733**	**42,035**	**16,562**	**89,007**	**105,569**	**13,149**	**76,000**	**89,149**
Coastwide Total	**5,302**	**36,733**	**42,035**	**16,562**	**89,007**	**105,569**	**13,149**	**76,000**	**89,149**

Table 5-2 (Table R1b). Recreational albacore catch (number of kept fish) for charter and private boats by year and port, 2021-2023 regardless of trip type. (Note: For California, there is no equivalent target category between CPFV and private effort. Therefore, all catch is listed in table R1a)

Port Area	2021			2022			2023		
	Charter	Private	Combined	Charter	Private	Combined	Charter	Private	Combined
North Coast	0	42	42	0	705	705	0	248	248
Westport	3356	3034	6390	10219	23667	33886	7151	15664	22814
Ilwaco	928	3188	4117	3046	12152	15198	1700	8241	9941
Washington Subtotal	**4284**	**6264**	**10549**	**13265**	**36524**	**49789**	**8851**	**24153**	**33003**
Astoria	0	53	53	0	1670	1670	0	484	484
Pacific City	0	122	122	0	182	182	0	403	403
Garibaldi	59	1384	1443	0	5066	5066	365	5079	5444
Depoe Bay	36	1018	1054	396	2407	2803	893	1642	2535
Newport	56	1866	1922	168	4134	4302	786	11006	11792
Florence	0	186	186	0	0	0	0	0	0
Winchester Bay	0	4626	4626	0	592	592	0	1243	1243
Coos Bay	52	7144	7196	0	2967	2967	20	12030	12050
Bandon	83	243	326	0	0	0	163	282	445
Gold Beach	0	0	0	0	0	0	0	0	0
Brookings	233	3696	3929	167	2852	3019	126	164	290
Oregon Subtotal	**519**	**20338**	**20857**	**731**	**19870**	**20601**	**2353**	**32333**	**34686**
Redwood District	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wine District	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Francisco District	NA	NA	NA	NA	NA	NA	NA	NA	NA
Central District	NA	NA	NA	NA	NA	NA	NA	NA	NA
Channel District	NA	NA	NA	NA	NA	NA	NA	NA	NA
South District	NA	NA	NA	NA	NA	NA	NA	NA	NA

Port Area	2021			2022			2023		
	Charter	Private	Combined	Charter	Private	Combined	Charter	Private	Combined
California Subtotal	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Mex	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mexico Subtotal	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Oregon-Washington Total	**4803**	**26602**	**31406**	**13996**	**56394**	**70390**	**11204**	**56486**	**67689**
U.S. Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Coastwide Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Table 5-3 (Table R2). Recreational albacore effort (angler days*) for charter and private boats by year and port, 2020-2022.

Port Area	2021			2022			2023		
	Charter	Private	Combined	Charter	Private	Combined	Charter	Private	Combined
North Coast	0	49	49	5	149	154	0	94	94
Westport	613	1944	2557	863	4962	5825	856	4043	4899
Ilwaco	630	1310	1940	936	2682	3618	592	2485	3078
Washington Subtotal	**1,243**	**3303**	**4546**	**1,804**	**7793**	**9597**	**1,448**	**6622**	**8071**
Astoria	0	61	61	0	413	413	0	210	210
Pacific City	0	43	43	0	73	73	0	74	74
Garibaldi	38	762	800	0	1207	1207	136	1230	1366
Depoe Bay	33	260	293	236	535	771	314	376	690
Newport	10	536	546	104	1003	1107	246	2324	2570
Florence	0	34	34	0	4	4	0	0	0
Winchester Bay	0	1117	1117	0	226	226	0	474	474
Coos Bay	31	1730	1761	7	1093	1100	25	3198	3223
Bandon	32	98	130	0	0	0	66	139	205
Gold Beach	0	0	0	0	0	0	0	0	0
Brookings	38	984	1022	36	385	421	29	91	120
Oregon Subtotal	**182**	**5625**	**5807**	**383**	**4939**	**5322**	**816**	**8116**	**8932**
Redwood District	47	NA	NA	488	NA	NA	41	NA	NA
Wine District	5	NA	NA	130	NA	NA	283	NA	NA
San Francisco District	8	NA	NA	29	NA	NA	108	NA	NA
Central District	0	NA	NA	0	NA	NA	7	NA	NA
Channel District	0	NA	NA	0	NA	NA	0	NA	NA
South District	0	NA	NA	4	NA	NA	65	NA	NA
California Subtotal	**60**	**NA**	**NA**	**651**	**NA**	**NA**	**504**	**NA**	**NA**
Mex	0	NA	NA	0	NA	NA	0	NA	NA
Mexico Subtotal	**0**	**NA**	**NA**	**0**	**NA**	**NA**	**0**	**NA**	**NA**
Oregon-Washington Total	**1,425**	**8928**	**10353**	**2,187**	**12732**	**14919**	**2,264**	**14738**	**17003**
U.S. Total	**1,485**	**NA**	**NA**	**2,838**	**NA**	**NA**	**2,768**	**NA**	**NA**
Coastwide Total	**1,485**	**NA**	**NA**	**2,838**	**NA**	**NA**	**2,768**	**NA**	**NA**

*Note: California and Oregon record catch and effort by angler day. Washington records catch and effort by angler trip, although the majority of trips are equal to one day. With very infrequent exceptions, the duration of Oregon recreational fishing trips by private anglers and by charter anglers is 24 hours or less, and encompasses one day of fishing activity.NAs represent data that are not collected/able to be calculated. Zeros represent no catch.

Table 5-4 (Table R3). Recreational albacore catch per unit of effort (number of kept fish/angler day, see note above) for charter and private boats by year and port, 2021-2023.

Port Area	2021			2022			2023		
	Charter	Private	Combined	Charter	Private	Combined	Charter	Private	Combined
North Coast	0.0	0.9	0.9	0.0	4.7	4.6	0.0	2.6	2.6
Westport	5.5	1.6	2.5	11.8	4.8	5.8	8.4	3.9	4.7
Ilwaco	1.5	2.4	2.1	3.3	4.5	4.2	2.9	3.3	3.2
Washington Subtotal	**3.5**	**1.9**	**2.4**	**7.4**	**4.9**	**5.4**	**6.2**	**3.8**	**4.2**
Astoria	0.0	0.9	0.9	0.0	4	4	0.0	2.3	2.3
Pacific City	0.0	2.8	2.8	0.0	2.5	2.5	0.0	5.4	5.4
Garibaldi	1.6	1.8	1.8	0.0	4.2	4.2	2.7	4.1	4
Depoe Bay	1.1	3.9	3.6	1.7	4.5	3.6	2.8	4.4	3.7
Newport	5.6	3.5	3.5	1.6	4.1	3.9	3.2	4.7	4.6
Florence	0.0	5.5	5.5	0.0	0	0	0.0	0	0
Winchester Bay	0.0	4.1	4.1	0.0	2.6	2.6	0.0	2.6	2.6
Coos Bay	1.7	4.1	4.1	0.0	2.7	2.7	0.8	3.8	3.7
Bandon	2.6	2.5	2.5	0.0	0	0	2.5	2	2.2
Gold Beach	0.0	0	0	0.0	0	0	0.0	0	0
Brookings	6.1	3.8	3.8	4.6	7.4	7.2	4.3	1.8	2.4
Oregon Subtotal	**2.9**	**3.7**	**3.7**	**1.9**	**4.3**	**4.1**	**2.9**	**4.2**	**4.1**
Redwood District	7.9	NA	NA	4.2	NA	NA	6.2	NA	NA
Wine District	11.0	NA	NA	2.9	NA	NA	4.5	NA	NA
San Francisco District	1.2	NA	NA	0.5	NA	NA	2.5	NA	NA
Central District	0.0	NA	NA	0.0	NA	NA	1.7	NA	NA
Channel District	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA
South District	0.0	NA	NA	1.8	NA	NA	1.0	NA	NA
California Subtotal	**7.3**	**NA**	**NA**	**3.7**	**NA**	**NA**	**3.7**	**NA**	**NA**
Mex	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA
Mexico Subtotal	**0.0**	**NA**	**NA**	**0.0**	**NA**	**NA**	**0.0**	**NA**	**NA**
Oregon-Washington Total	**3.4**	**3.1**	**3.1**	**6.5**	**4.6**	**4.9**	**5.0**	**4**	**4.1**
U.S. Total	**3.6**	**NA**	**NA**	**5.8**	**NA**	**NA**	**4.8**	**NA**	**NA**
Coastwide Total	**3.6**	**NA**	**NA**	**5.8**	**NA**	**NA**	**4.8**	**NA**	**NA**

5.2. Other HMS (Southern California)

Recreational anglers in California take the entire suite of management unit species (MUS) included within the HMS FMP using rod-and-reel gear almost exclusively; in addition, a nominal amount of fish, primarily tunas and dorado, are taken by free divers using spear guns. In Oregon and Washington anglers only occasionally take HMS species other than albacore, such as blue sharks, and more recently Pacific bluefin tuna.

CPFVs also make trips from Southern California ports (primarily San Diego) into Mexican waters. Yellowfin, bluefin, and skipjack tunas as well as dorado are the most commonly caught HMS species.

Private vessel data for California are collected by the CRFS program while the state's mandatory logbook program provides an estimate of fishing activity for CPFVs. The fact that a much higher overall percentage of highly migratory MUS catches are represented in logbook data than in CRFS samples is why logbooks

are preferred over CRFS in determining the catch of these species by anglers fishing from CPFVs. Logbooks also have the advantage of supplying catch information on MUS taken in Mexico. However, CRFS data are the best available for making catch estimates of anglers fishing from private boats. Statistics for the CPFV fishery are also available from the federal charter logbook program. In Oregon statistics for recreational fisheries, including private, CPFV, and tournament fisheries, are available from the ODFW ORBS Program. Beginning in 2005, a mandatory charter boat tuna logbook program was implemented in Washington to provide additional information on location and effort in the charter albacore fishery.

5.2.1. Fishery performance

The following tables present recreational catch in Southern California waters (tables updated September 29, 2023). NAs represent data that are not collected/able to be calculated. Zeros represent no catch. CONFID represents data excluded for confidentiality.

Table 5-5 (Table R-4). Estimated number of highly migratory MUS kept and thrown back alive by recreational anglers fishing from California private vessels in U.S. EEZ waters, 2021-2023.

•	2021		2022		2023	
	No. Fish		No. Fish		No. Fish	
Species	**Kept**	**Released**	**Kept**	**Released**	**Kept**	**Released**
Tuna						
Tuna, albacore	9,269	194	29,948	0	16,967	311
Tuna, bigeye	0	0	70	0	98	0
Tuna, bluefin	4,363	361	4,061	139	3,255	54
Tuna, skipjack	52	49	0	0	115	6
Tuna, yellowfin	373	0	1,063	102	2,954	288
Billfish						
Marlin, striped	0	0	11	57	16	11
Swordfish	44	0	12	0	8	0
Sharks						
Shark, blue	0	302	0	256	37	425
Shark, shortfin mako	10	60	96	332	18	235
Shark, thresher	396	678	181	531	201	256
Other Fish						
Dolphin (fish)	3,418	351	48,268	3,815	6,093	1,077
Total	**17,925**	**1,995**	**83,710**	**5,232**	**29,762**	**2,663**

Table 5-6 (Table R-5). Estimated number of highly migratory MUS kept and thrown back alive by recreational anglers fishing from California private vessels in Mexico waters, 2021-2023

	2021		2022		2023	
	No. Fish		No. Fish		No. Fish	
Species	Kept	Released	Kept	Released	Kept	Released
Tuna						
Tuna, albacore	0	0	0	0	0	0
Tuna, bigeye	0	0	0	0	0	0
Tuna, bluefin	1,673	11	916	111	712	13
Tuna, skipjack	12	16	83	0	0	0
Tuna, yellowfin	670	11	492	50	309	0
Billfish						
Marlin, striped	0	0	11	14	0	0
Swordfish	0	0	0	0	0	0
Sharks						
Shark, blue	0	22	0	105	10	32
Shark, shortfin mako	11	23	13	83	0	9
Shark, thresher	0	0	0	0	0	0
Other Fish						
Dolphin (fish)	815	785	5,575	765	2,707	795
Total	**3,181**	**868**	**7,090**	**1,128**	**0**	**0**

Table 5-7 (Table R-6). Reported number of highly migratory MUS kept and thrown back by recreational anglers fishing from California Commercial Passenger Fishing Vessels (CPFVs) in U.S. EEZ waters, 2021-2023.

	2021		2022		2023	
	No. Fish		No. Fish		No. Fish	
Species	**Kept**	**Released**	**Kept**	**Released**	**Kept**	**Released**
Tuna						
Tuna, albacore	438	0	2,435	5	1,867	20
Tuna, bigeye	0	0	0	0	8	0
Tuna, bluefin	34,931	311	24,823	253	60,394	671
Tuna, skipjack	374	182	25	3	146	54
Tuna, yellowfin	2,985	19	6,487	57	18,382	89
Billfish						
Marlin, striped	3	CONFID	8	9	4	6
Swordfish	6	0	CONFID	0	8	0
Sharks						
Shark, blue	0	40	CONFID	60	5	155
Shark, shortfin mako	31	81	41	102	40	170
Shark, thresher	10	CONFID	15	11	5	4
Other Fish						
Dolphin (fish)	6,499	98	72,832	1,431	21,710	780
Total	**45,277**	**729**	**106,664**	**1,931**	**102,569**	**1,949**

Table 5-8 (Table R-7). Reported number of highly migratory MUS kept and thrown back by recreational anglers fishing from California Commercial Passenger Fishing Vessels (CPFVs) in Mexico waters, 2021-2023.

	2021		2022		2023	
	No. Fish		No. Fish		No. Fish	
Species	Kept	Released	Kept	Released	Kept	Released
Tuna						
Tuna, albacore	0	0	0	0	0	0
Tuna, bigeye	206	0	12	0	182	0
Tuna, bluefin	29,844	157	19,609	104	19,990	149
Tuna, skipjack	88	55	1,527	2,828	15	45
Tuna, yellowfin	44,318	3,508	35,431	2,008	39,432	1,746
Billfish						
Marlin, striped	CONFID	343	CONFID	61	0	20
Swordfish	0	0	CONFID	0	0	0
Sharks						
Shark, blue	0	CONFID	0	0	0	4
Shark, shortfin mako	7	CONFID	CONFID	3	7	0
Shark, thresher	0	0	0	0	CONFID	0
Other Fish						
Dolphin (fish)	36,304	1,780	7,367	738	9,385	1,633
Total	**110,766**	**5,841**	**63,943**	**5,742**	**69,010**	**3,597**

Data from these tables are summarized in the figures below.

This figure shows estimated catch (retained plus discarded) by fleet, zone (Mexico or US waters), and species group for the years 2021 to 2023. The Tuna species group accounted for the most catch at 63%. The CPFV fleet in Mexico waters accounted for 42% of catch followed by the CPFV fleet in US waters at 33%.

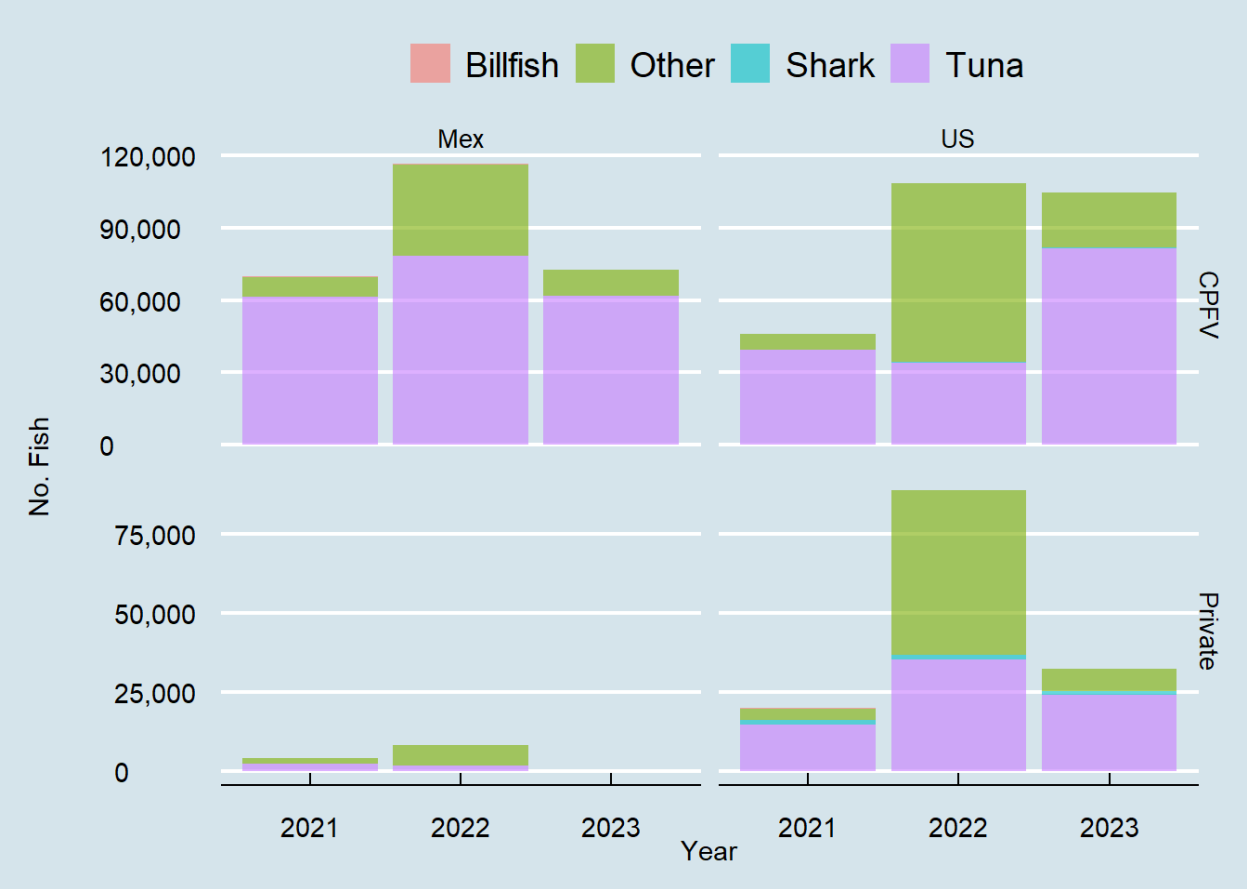


Figure 5-1. Total recreational catch (retained plus discarded) by fleet and zone, 2020 - 2023.

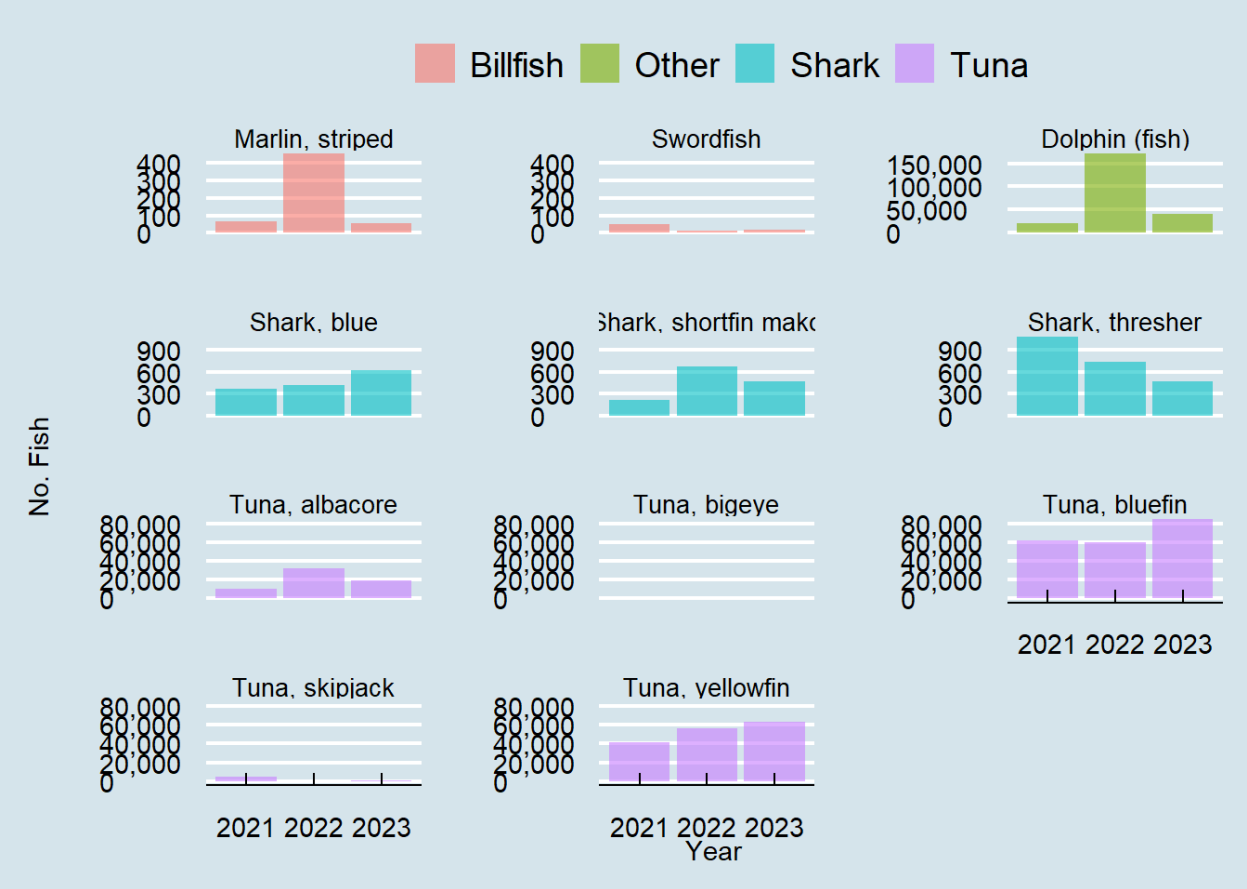


Figure 5-2. Total catch (retained plus discarded) by species, 2021-2023.

6. U.S.-Canada Albacore Treaty Data Exchange

National Marine Fisheries Service and Department of Fisheries and Oceans – Canada collaborate through the Data Working Group (DWG) to develop a mutually agreed upon data summary of catch and landings of North Pacific albacore landed on west coast of Canada and the United States. The DWG has developed a Data Exchange Template, designed to provide relevant data to the delegations for the treaty between the United States and Canada on Pacific Coast Albacore Tuna vessels and Port Privileges. The summary tables are available here thanks to the respective governments' willingness to allow public dissemination of this information. (As noted in the tables, the most recent year's data are considered preliminary and may be subsequently updated.)

The tables are included in Appendix A as well as online.

Data Description

U.S. Fishery Data

The Data Exchange Template was designed to provide relevant data to the delegations for the treaty between the United States and Canada on Pacific Coast Albacore Tuna vessels and Port Privileges. It has been agreed that the time-series would be constrained to the years for which all of the data are reliable and comparable; therefore, not all data considered reliable has been provided. The sources are self-reported logbooks from albacore harvesters and fish tickets provided by the States of Washington, Oregon and California to the PacFIN database.

While a U.S. fishery for north Pacific albacore has existed since the early 1900's, the collection of logbook data began in 1951 as a voluntary program. In 2004 the fishery management plan for highly migratory species made logbook submission mandatory for the albacore fleet operating in or adjacent to the U.S. exclusive economic zone thereby increasing the coverage rate considerably. The average coverage rate based on the ratio of trip landings weights recorded in logbooks to the sum of landings from PacFIN and foreign ports is 40% for years 1996 through 2004 and 78% for 2005 through 2011. Although similar coverage rates of around 40% prior to 1995, the template is constrained by the year for which Canada can provide reliable data.

Since 1974 there have been attempts to coordinate State landings data. First through the Albacore Coordination Committee and later through the Pacific States Marine Fisheries Commission's database PacFIN. Within the PacFIN system, Fish Ticket data are considered complete for years since 1981. Again, data has been constrained by the year 1995 due to limitations in Canadian data.

A sales slip system was implemented in 1951 and data compiled from these records were used to estimate Canadian total annual albacore catch until 1994. This system provides a better estimate of total catch because it captures fish landed at all Canadian ports, but it still underestimates catch because sales slips do not account for albacore landed at US or other foreign ports nor do they fully account for direct sales of albacore to the public, i.e., dockside sales. Effort data were not compiled nor reported for this period. Although the sales slip system has been used to capture some of the spatial and temporal resolution of landings in other domestic, these data were not compiled nor reported for albacore.

Canadian Fishery Data

The Data Exchange Template was designed to provide relevant data to the delegations for the treaty between the United States and Canada on Pacific Coast Albacore Tuna vessels and Port Privileges. It has been agreed that the time-series would be constrained to the years for which all of the data are reliable and comparable.

Canadian data sources include logbooks completed by albacore harvesters turned end at the end of the fishing season, sales slips recording the landing weight of all albacore on a trip, and hail records, which identify vessels participating in the fishery and the zone in which those vessels are fishing. Logbooks, sales slips from domestic buyers, and at-sea trans-shipment slips, completed at the time fish are landed and sold, must be returned to Fisheries and Oceans Canada (DFO) for entry into the Canadian albacore tuna catch-effort database (Stocker et al. 2007). Entering new data into the database creates a new version of the database on that date. Canadian data are always reported with the database version number, which reflects the date of data entry (YY.MM.DD). For example, Database version 12.12.01 was created 01 Dec 2012.

The Canadian fishery for north Pacific albacore tuna (Thunnus alalunga) began in 1939. Total catch data from 1939 to 1951 are based on landings and were estimated by converting canned weights shipped by Canadian canneries to landed weights using standard conversion factors for salmon and were reported in annual statistical reports. These data are not reliable estimates of activity by the Canadian fishery because: (1) albacore landed in United States ports were not included in the estimates, (2) albacore imported from foreign sources by Canadian processors were included in these estimates, and (3) no measure of effort is available for this period. In addition, the spatial distribution of catch and effort is unknown beyond narratives in the annual reports noting that catches were occurring in BC and WA waters.

The Canadian fishery for north Pacific albacore tuna (Thunnus alalunga) began in 1939. Total catch data from 1939 to 1951 are based on landings and were estimated by converting canned weights shipped by Canadian canneries to landed weights using standard conversion factors for salmon and were reported in annual statistical reports. These data are not reliable estimates of activity by the Canadian fishery because: (1) albacore landed in United States ports were not included in the estimates, (2) albacore imported from foreign sources by Canadian processors were included in these estimates, and (3) no measure of effort is available for this period. In addition, the spatial distribution of catch and effort is unknown beyond narratives in the annual reports noting that catches were occurring in BC and WA waters.

Fishery statistics reported since 1995 are based on data compiled in the Canadian Albacore Tuna Catch and Effort Database from hails, sales slips, and logbooks. These data are considered the most reliable estimates of fishery activity by the Canadian fleet because: (1) they account for fish caught and landed in foreign waters, (2) they have high spatial and temporal resolution in catch and effort (daily position by vessel), (3) sales slip weights provide independent validation of logbook data, and (4) data are obtained from all known vessels active in the fishery in a given year.

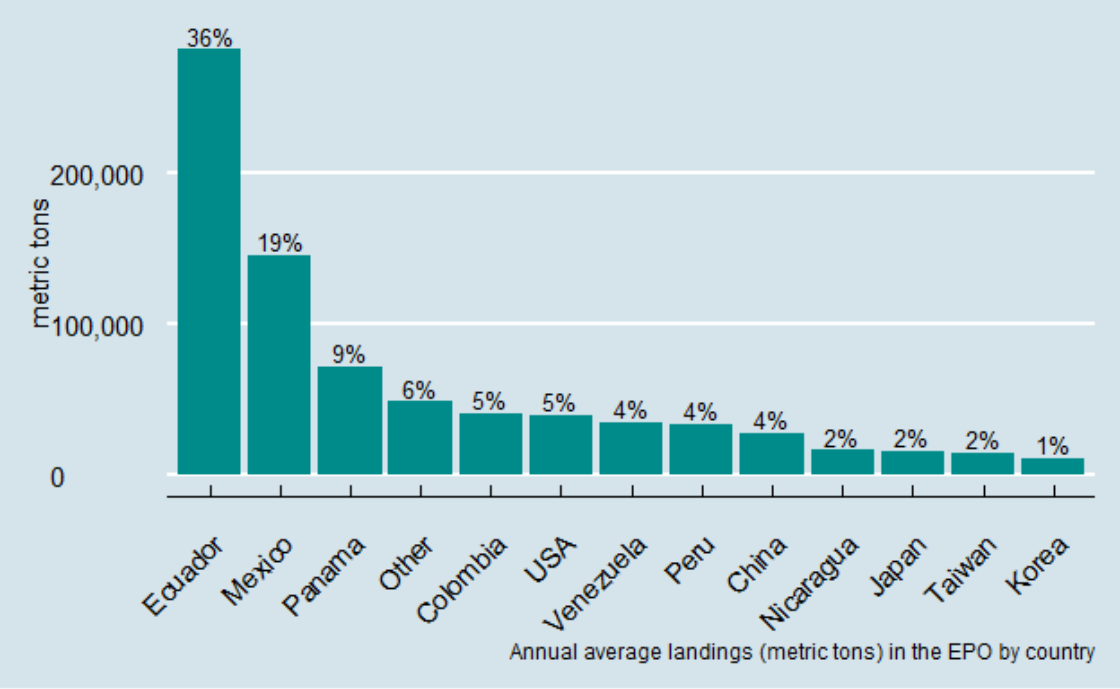
7. Pacific-Wide Catch

The data used in the graphs and summaries below use Inter-American Tropical Tuna Commission (IATTC) public domain data, Western and Central Pacific Fisheries Commission (WCPFC) Tuna Fishery Yearbook annual catch estimates, and International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) annual catch tables.

7.1. Eastern Pacific Ocean Landings (IATTC Data): 2013 - 2022

7.1.1. Landings by Country

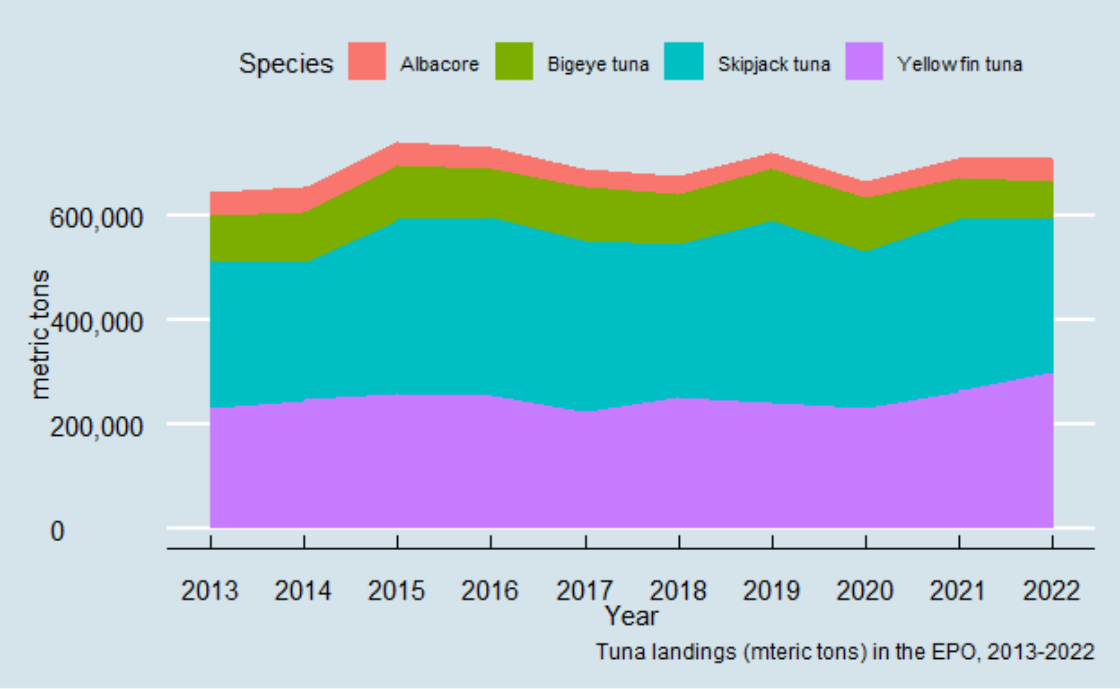
The plot below shows average annual landings by country for all species recorded in IATTC data.



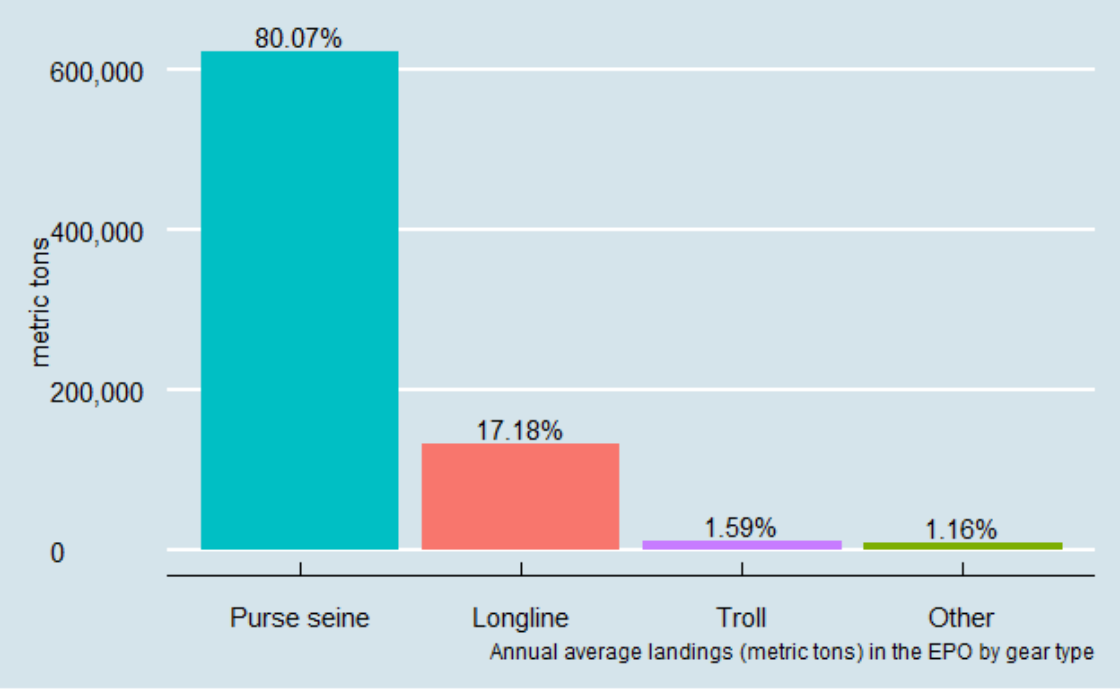
The Other category includes Costa Rica, Chile, Vanuatu, Canada, Belize, Unknown, Guatemala, El Salvador, each of which has landings less than 1% of the total, and others not specified in the source data.

7.1.2. Landings by Species

During 2013-2022 Albacore accounted for 5.8% of total landings, Bigeye tuna for 13.3%, Skipjack tuna for 44.7%, and Yellowfin tuna for 36.1%.



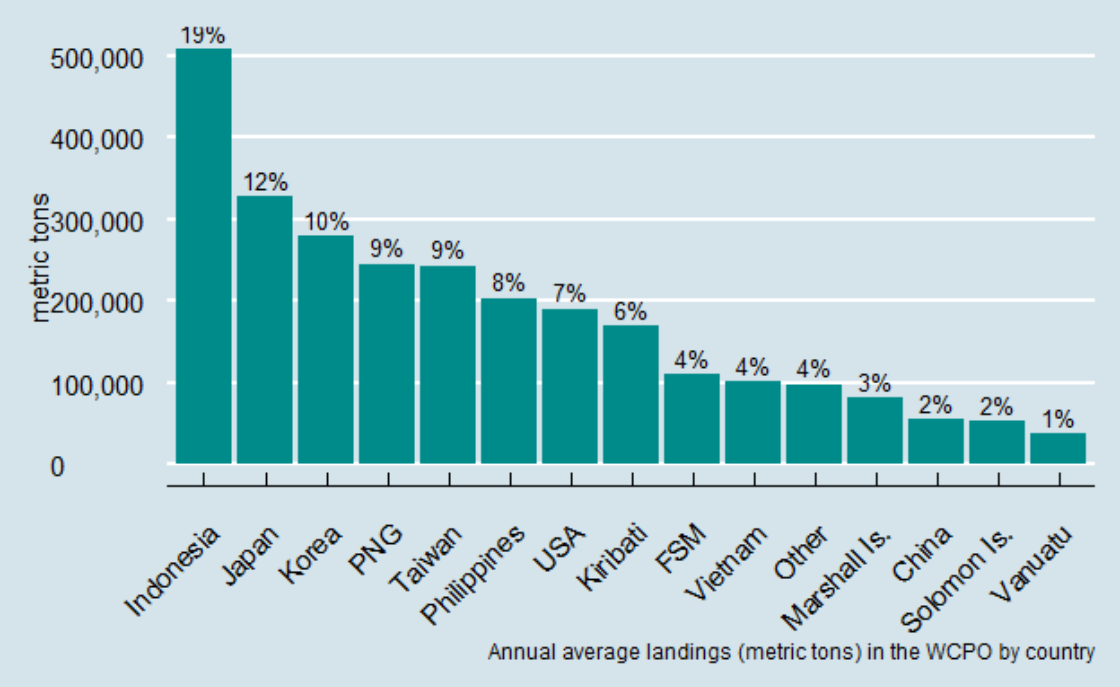
7.1.3. Landings by Gear



The Other category includes Gillnet, Recreational, Pole-and-line, Harpoon, Trawl and others not specified in the source data.

7.2. Western and Central Pacific Ocean (WCPFC Data): 2013 - 2022

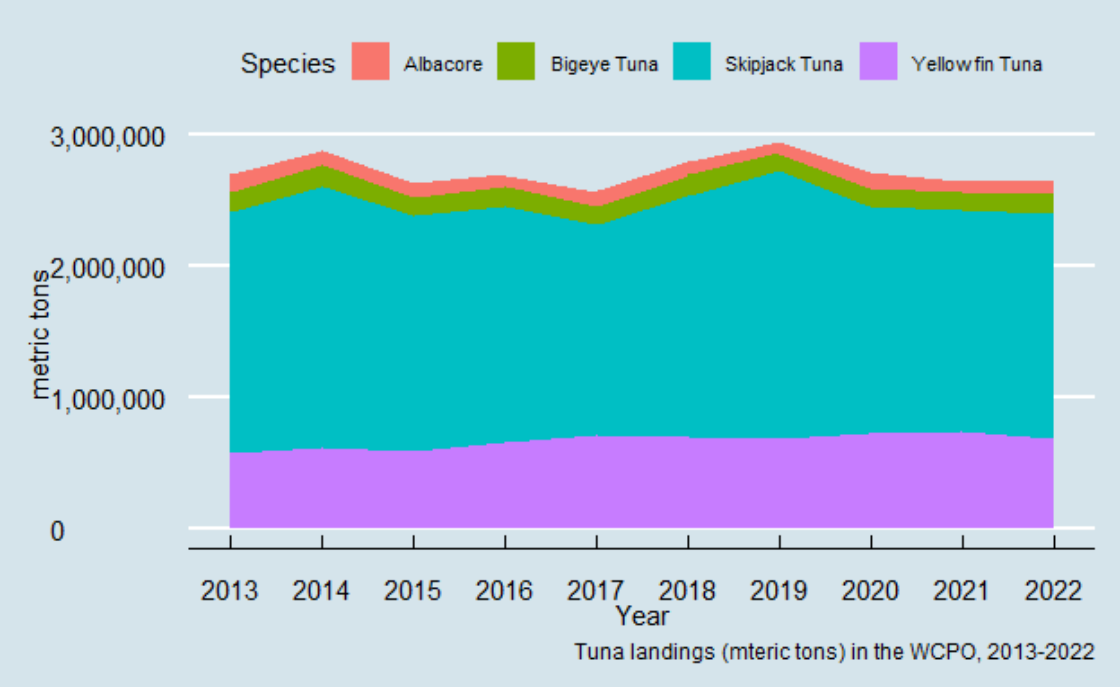
7.2.1. Landings by Country



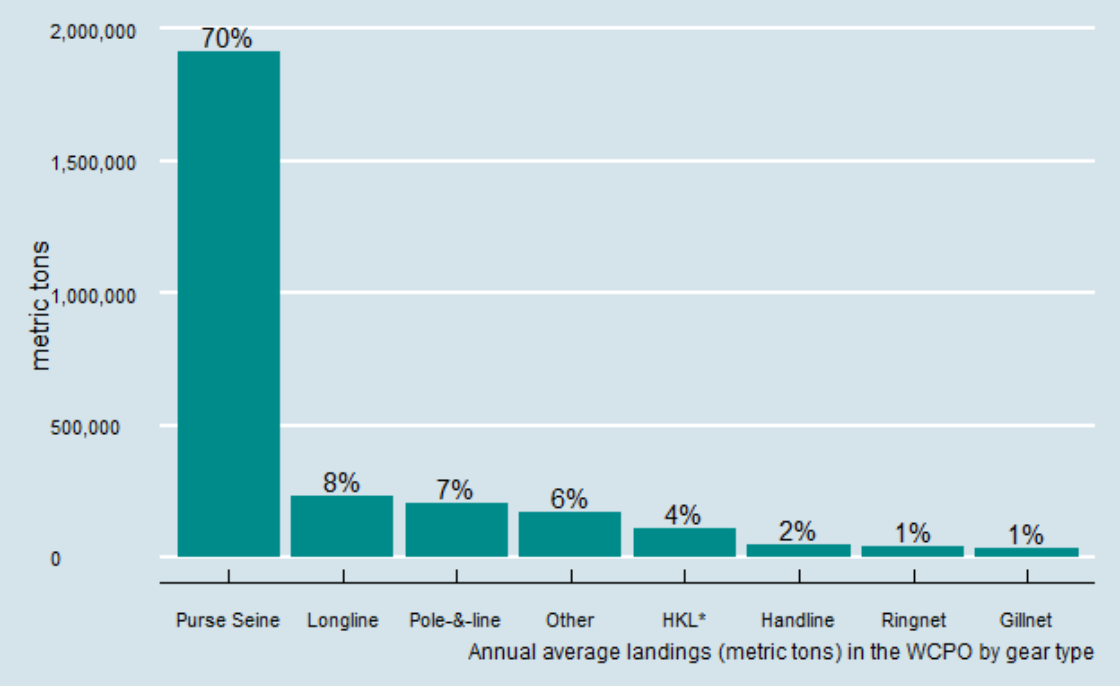
PNG: Papua New Guinea, FSM: Federated States of Micronesia; the Other category includes Ecuador, Spain, New Zealand, Tuvalu, Fiji, El Salvador, Australia, Cook Islands, New Caledonia, Samoa, French Polynesia, Palau, Tonga, Tokelau, Belize, Canada, Niue, each of which has landings less than 1% of the total.

7.2.2. Landings by Species

During the 2013- 2022 period, Albacore accounted for 3.8% of total landings, Bigeye Tuna accounted for 5.4%, Skipjack Tuna accounted for 66.2%, and Yellowfin Tuna accounted for 24.6%.



7.2.3. Landings by Gear



*Small-scale hook-and-line (Philippines and Indonesia). The Other category from source data.

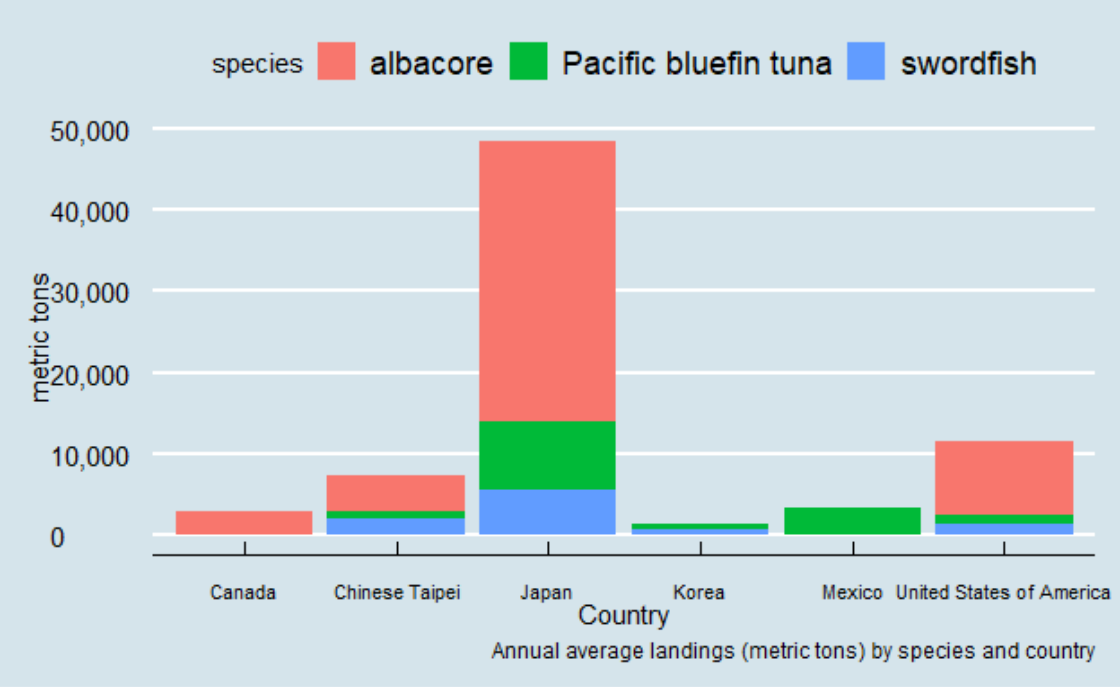
7.3. North Pacific (ISC Data): 2014 - 2023

The ISC provides member country catch data for the species it assesses. Of these, landings of North Pacific albacore, Pacific bluefin tuna, and swordfish are summarized here. (The other assessed species are blue and

short-fin mako sharks, and striped and blue marlins.). ISC catch table data provided in a suitable format for processing by the ISC Data Manager, Kiara Nishikawa.

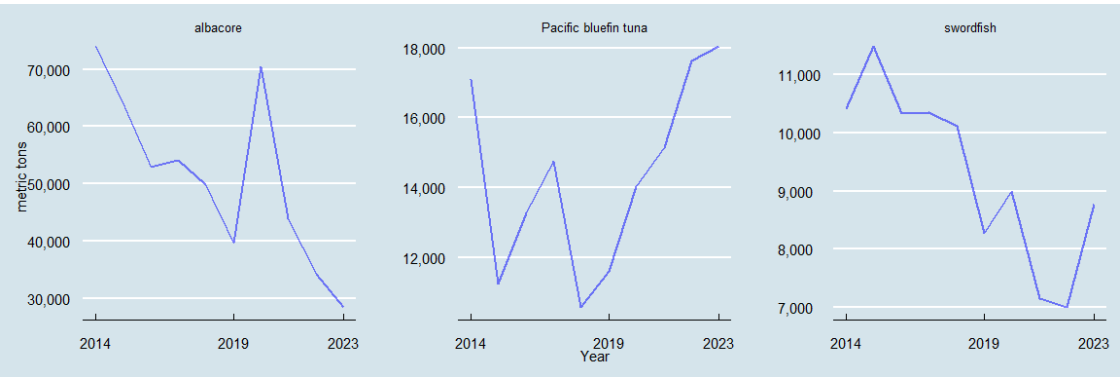
7.3.1. Landings by Country

Japan accounts for the largest proportion of these three species landings, 65%, averaging 48,495 metric tons annually during the 2014-2023 period. U.S. landings averaged 11,412 metric tons or 15% of total landings.



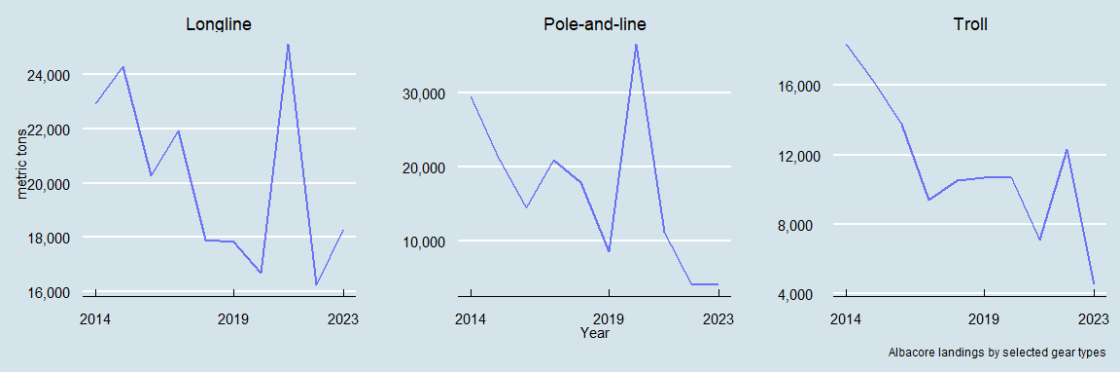
7.3.2. Landings by Species

As depicted below, landings of albacore, Pacific bluefin, and swordfish have declined over this 10-year period. Albacore landings were lowest in 2023 at 28,442 mt, Pacific bluefin landings were lowest in 2018 at 10,565 mt, and swordfish landings were lowest in 2022 at 7,004 mt. Note that Pacific bluefin is managed bu catch limits pursuant to the WCPFC Northern Committee's stock rebuilding plan.



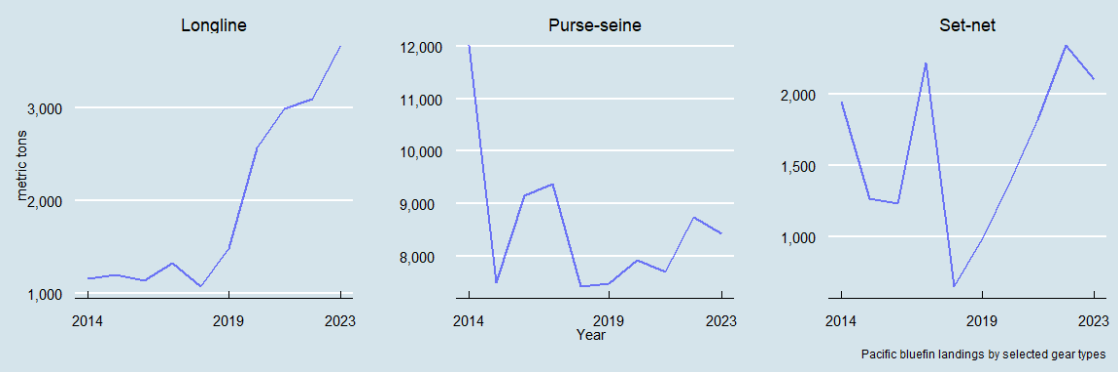
7.3.3. Albacore Landings by Gear Type

The gear types depicted below are the three top ranked in terms of landings and accounted for 94% of total albacore landings.



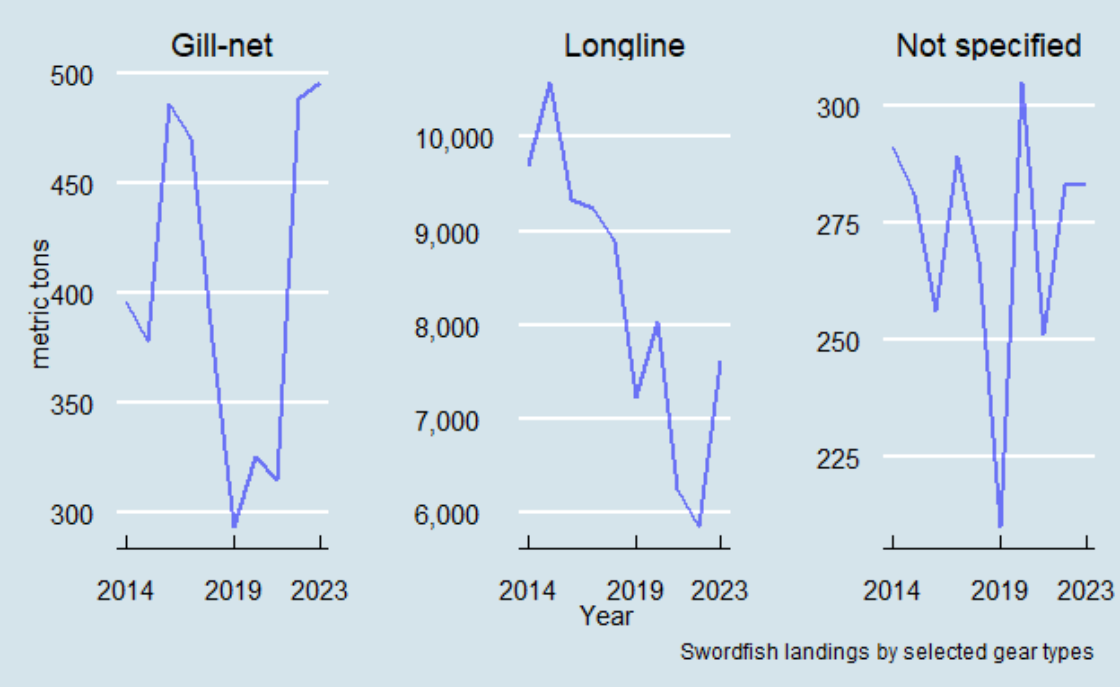
7.3.4. Pacific Bluefin Tuna Landings by Gear Type

The gear types depicted below are the three top ranked in terms of landings and accounted for 85% of total Pacific bluefin landings. Setnet landings increased markedly in 2017.



7.3.5. Swordfish Landings by Gear Type

The gear types depicted below are the three top ranked in terms of landings and accounted for 97% of total swordfish landings.


Gill-net
Longline
Not specified
metric tons
500
450
400
350
300
10,000
9,000
8,000
7,000
6,000
300
275
250
225
2014
2019
2023
Year
Swordfish landings by selected gear types

8. Status of HMS Stocks

Under the Magnuson-Stevens Act (MSA), Councils must identify status determination criteria (SDC) that can be used to decide whether overfishing is occurring (fishing mortality is above a maximum fishing mortality threshold, MFMT) or the stock is overfished (biomass is less than a minimum stock size threshold, MSST). They are derived from an estimate of maximum sustainable yield (MSY), "the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological, environmental conditions and fishery technological characteristics (e.g., gear selectivity), and the distribution of catch among fleets." Frequently MSY is difficult to estimate for HMS stocks, either due to stock dynamics or the lack of sufficient information to conduct a stock assessment. In those cases, proxy values may be determined for MSY and related status determination criteria. In general, the Council considers the biological reference points, or related proxies, adopted by regional fishery management organizations, to be the 'best available science.' The HMS FMP defines these thresholds as follows:

> MFMT equals F_{MSY}. The overfishing limit (OFL) is the annual amount of catch that corresponds to the estimate of MFMT applied to a stock or stock complex's abundance and is expressed in terms of numbers or weight of fish. Overfishing occurs when fishing mortality F is greater than the MFMT mortality or catch exceeds OFL for one year or more.
>
> MSST is calculated as the greater of:
>
> $B_{MSST} = (1\text{-}M)B_{MSY}$ when M (natural mortality) ≤ 0.5, or
> $B_{MSST} = 0.5B_{MSY}$ when $M > 0.5$
>
> MSST or a reasonable proxy must be expressed in terms of spawning biomass or other reproductive potential. Should the estimated size of an HMS stock in a given year fall below this threshold, the stock is considered overfished.

Additional information on status determination criteria and related management quantities may be found in Chapter 4 of the HMS FMP.

In the case of HMS in the Pacific, most stock assessments are conducted by several international organizations established through conventions that function akin to treaties among sovereign governments. This makes it difficult, if not impossible, for the U.S., or any participating country, to unilaterally peer review the assessments sponsored by these organizations. Therefore, NMFS employs "other peer review processes" to determine whether the assessments constitute the best scientific information available for these transboundary stocks (81 FR 54561; August 16, 2016), including through participation by the U.S. government in these organizations. Once NMFS makes a best scientific information available (BSIA) determination on the outputs of an assessment produced by an international organization, the agency uses this information to determine the status of stocks relative to SDC identified in the FMP for the purposes of domestic management. In instances where the use of proxies is necessary for making status determinations for domestic management based on the best scientific information available from internationally produced assessments, the Council and its advisory bodies may review and comment on the suitability of such proxies. International organizations that conduct stock assessments for HMS FMP management unit species are:

- In the Eastern Pacific Ocean (EPO) scientific staff employed by the Inter-American Tropical Tuna Commission (IATTC) conduct stock assessments mainly for tropical tunas (bigeye, yellowfin, and skipjack) and some billfish (striped marlin, swordfish). The Fishery Status Reports summarize fisheries and stock status and the most recent stock assessment reports may be accessed on

Scientific Advisory Committee (SAC) meeting webpages. All IATTC staff assessments and analyses are reviewed by the Scientific Advisory Committee.

- In the Western and Central Pacific Ocean (WCPO), the Secretariat of the Pacific Community Oceanic Fisheries Program (SPC-OFP) conducts stock assessments as the science provider to the Western and Central Pacific Fisheries Commission (WCPFC). Like the IATTC, they tend to focus on the tropical tunas, but SPC has also completed stock assessments for species other than the tropical tunas. Their stock assessments may be accessed by visiting the SPC-OFP stock assessment webpage or webpages for relevant WCPFC Scientific Committee meetings.
- In the North Pacific Ocean (NPO) the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) conducts stock assessments, also as a science provider for the WCPFC, and specifically that organization's Northern Committee. The ISC has formed working groups for North Pacific albacore, Pacific bluefin tuna, billfish (marlins and swordfish), and sharks. Shark species of interest include blue, shortfin, mako, bigeye thresher, pelagic thresher, silky, oceanic whitetip, and hammerhead species. The ISC Plenary reviews assessments and analyses, and ISC annual Plenary Reports provide stock status updates and conservation recommendations. ISC stock assessments can be found on its Stock Assessment webpage.

In addition to stock assessments prepared by these international organizations, in 2016 NMFS Southwest Fisheries Science Center (SWFSC) scientists, in collaboration with scientists from Mexico, assessed the status of the stock of common thresher shark (*Alopias vulpinus*) along the West Coast of North America.

Based on these stock assessments, NMFS West Coast Region and Southwest Fisheries Science Center (SWFSC) make BSIA and status determinations for some but not all stocks of HMS FMP management unit species. These status determinations are presented to the Council as part of the biennial management process described in Chapter 5 in the HMS FMP. When appropriate, the Council's SSC may provide advice on the basis for such determinations, which the Council may transmit as recommendations to NMFS. The Pacific Islands Regional Office and Pacific Islands Fisheries Science Center (PIFISC) are the lead in making status and BSIA determinations for Western and Central Pacific and may co-lead with the SWFSC for certain North Pacific-wide stocks (blue shark, shortfin mako shark).

The stock assessments upon which the status determination is based and resulting determinations are described below. (Status determinations are excerpted from Agenda Item J.3.a, NMFS Report 1, September 2024 and previous NMFS Reports, if necessary with pending determinations updated, as appropriate.)

8.1. Albacore (Thunnus alalunga)

Two albacore tuna stocks are defined and assessed in the Pacific Ocean, a North Pacific stock and a South Pacific stock. The North Pacific stock is managed under the HMS FMP.

The most recent stock assessment was completed by the ISC in 2023:

> Stock Assessment of Albacore Tuna in the North Pacific Ocean in 2023. Report of the Albacore Working Group. International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean. 12-17 July 2023.

The ISC23 (Plenary Report section 6.1.2) found that:

1. The stock is likely not overfished relative to the threshold (30%SSBcurrent, F=0) and limit (14%SSBcurrent, F=0) reference points adopted by the WCPFC and IATTC;
2. The stock is likely not experiencing overfishing relative to the adopted target reference point (F45%SPR); and

3. Current fishing intensity (F2018-2020) is lower than the average fishing intensity from the 2002-2004 period (the reference level for IATTC Resolution C-05-02 and WCPFC CMM-2019-03).

Both the IATTC and WCPFC have adopted a harvest strategy for this stock that includes reference points and harvest control rules. See IATTC Resolution C-23-02.

The current NMFS status determination is based on the 2023 ISC stock assessment. In 2024 NMFS reported to the Council:

> The ISC assessed albacore in the North Pacific Ocean (NPO) through 2020. The assessment refers to fishing mortality based on the spawning potential ratio (SPR), and conveys $F_{\%SPR,\ MSY}$ is 16.4%SPR. The estimate of SSB_{MSY} for the stock is 23,154 mt.
>
> To evaluate whether fishing mortality exceeded MFMT, NMFS evaluated the ratio of fishing mortality for the assessment years of 2018-2020 ($F_{\%SPR,\ 2018\text{-}20}$) relative to $F_{\%SPR,\ MSY}$ (see Table 8-1). This ratio equals 3.6. It should be noted that, in this case, higher %SPR values indicate lower fishing intensity levels, and values greater than 1.0 for ratios of $F_{\%SPR}$ to $F_{\%SPR}$-based reference points indicate fishing intensity levels lower than the reference point. Therefore, the ratio of 3.6 indicates that current fishing mortality is lower than the MFMT and the stock is not subject to overfishing.
>
> To evaluate whether current biomass is above the MSST, NMFS compared SSB during the most recent assessment year (2021), which was estimated as 70,229 mt, to MSST. The assessment indicates M for females age 3+ is 0.48. Therefore, NMFS estimates that SSB_{2021} relative to MSST equals 5.83, which indicates that the stock is not overfished (see Table 8-2).

8.1. Pacific Bluefin Tuna (Thunnus orientalis)

Pacific bluefin tuna is considered a single stock across the North Pacific. However, its major spawning grounds occur in the Western Pacific in waters between the Ryukyu Islands in Japan and the east of Taiwan, in the southern portion of the Sea of Japan, and possibly the Kuroshio-Oyashio transition area in the coastal area of northeastern Japan. A portion of juvenile fish migrate from spawning grounds in the Western Pacific to forage in the California Current System before returning west at ages 3-7+ years. Since 1990, about 80% of the catch has occurred in waters around Japan, Korea, and Taiwan with almost all remaining catch occurring in waters off the west coasts of Mexico and the U.S. A small portion of the stock may migrate into waters in the Southwest Pacific and Indian Ocean. This single North Pacific stock is subject to management under the HMS FMP.

The most recent stock assessment was completed by the ISC in 2024:

Stock Assessment of Pacific Bluefin Tuna in the Pacific Ocean in 2024. ISC Pacific Bluefin Tuna Working Group. International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean 12-18 July 2022.

The 2024 assessment was reviewed at ISC24 and it provided the following stock status information (Plenary Report section 6.2.2):

PBF spawning stock biomass (SSB) has increased substantially in the last 12 years. These biomass increases coincide with a decline in fishing mortality, particularly for fish aged 0 to 3, over the last decade. The latest (2022) SSB is estimated to be 23.2% of $SSB_{F=0}$ and the probability that it is above $20\%SSB_{F=0}$ is 75.9%.

Based on these findings, the following information on the status of the Pacific bluefin tuna stock is provided by the ISC24 Plenary:

1. No biomass-based limit or target reference points have been adopted for PBF, but the PBF stock is not overfished relative to $20\%SSB_{F=0}$, which has been adopted as a biomass-based reference point for some other tuna species by the IATTC and WCPFC. SSB of PBF reached its initial rebuilding target ($SSB_{MED} = 6.3\%SSB_{F=0}$) in 2017, seven years earlier than originally anticipated by the RFMOs, and its second rebuilding target ($20\%SSB_{F=0}$) in 2021; and
2. No fishing mortality-based reference points have been adopted for PBF by the IATTC and WCPFC. The recent (2020-2022) F%SPR is estimated to be 23.6% and thus the PBF stock is not subject to overfishing relative to some of F-based reference points proposed for tuna species (Table 2), including F20%SPR.

Both the IATTC and WCPFC have adopted a rebuilding plan as part of a long-term management framework. See IATTC Resolution C-23-01. The rebuilding plan includes two rebuilding targets: 1) $SSB_{med,1952-2014}$ (the median point estimate for 1952-2014) to be achieved by 2024 with at least 60% probability; and (2) $20\%_{SSBF=0}$ to be achieved within 10 years of reaching the initial rebuilding target or by 2034, whichever is earlier, with at least 60% probability. Stock rebuilding is being accomplished through national/fishery catch limits for fish ≤30 kg and >30 kg. According to the 2024 stock assessment, the second rebuilding target has been exceeded. The management framework also describes interim measures for the period between when the second rebuilding target is met and when the long-term harvest strategy is agreed to, based on management strategy evaluation results.

Based on the 2024 ISC stock assessment, in 2024 NMFS reported to the Council:

> The ISC assessed PBF in the NPO through 2022. As with the 2022 status determinations, NMFS proposes continuing to use $1\text{-}SPR_{20\%}$ and $20\%SSB_{F=0}$ as proxy F_{MSY} and B_{MSY} reference points, respectively (see Agenda Item I.4, NMFS Report 1, from the September 2022 Briefing Book).
>
> To evaluate whether fishing mortality exceeds MFMT, NMFS evaluated the $F_{\%SPR}$ for the assessment years (2020-2022) relative to the proxy F_{MSY} reference point, $1\text{-}SPR_{20\%}$. The resulting ratio is 0.76, indicating that fishing mortality is below MFMT (Table 8-1) and that the stock is not subject to overfishing.
>
> To evaluate whether current biomass is above the MSST, NMFS evaluated SSB in 2022 as 144,483 mt relative to MSST. With $20\%SSB_{F=0}$ reported as 124,451, and M for fish age 2+ equal to 0.25, MSST is 93,338.[1] This results in a ratio of 1.55, indicating that biomass is above MSST (Table 8-2) and that the stock is not overfished.

8.2. Bigeye Tuna (Thunnus obesus)

Two bigeye tuna stocks are identified in the Pacific Ocean, the EPO stock and the WCPFO stock, defined by the IATTC and WCPFC Convention Areas. The stock managed under the HMS FMP is the EPO stock.

The most recent stock assessment for the EPO stock was completed by the IATTC scientific staff in 2024:

> Stock Assessment of Bigeye Tuna in the Eastern Pacific Ocean: 2024 Benchmark Assessment. Haikun Xu, Mark N. Maunder, Carolina Minte-Vera, Juan L. Valero, and Cleridy Lennert-Cody.

[1] MSST = (1-0.25)*124,554 = 93,416.

Prepared for the Fifteenth Meeting of the Inter-American Tropical Tuna Commission (IATTC) Scientific Advisory Committee. Document SAC-15-02 Revised.

This stock assessment found that "According to the thirty-three converged reference models in this benchmark assessment, the spawning biomass of bigeye at the beginning of 2024 range from 45% to 292% of the spawning biomass at dynamic MSY and the fishing mortality of bigeye in 2021-2023 ranges from 42% to 136% of the fishing mortality at MSY" (p. 27).

The current NMFS status determination is based on the 2024 IATTC stock assessment. In 2024 NMFS reported to the Council:

> Similar to the 2020 assessment, the 2024 benchmark assessment for bigeye tuna in the EPO is based on a 'risk analysis' methodology, which uses several reference models to represent various plausible assumptions about the biology of the fish, the productivity of the stocks, and/or the operation of the fisheries. During the 2020 biennial management cycle, the Council and its advisory bodies reviewed and made recommendations on suitable proxies and approaches to determining stock status for these assessments (see, Agenda Item H.5.a, NMFS Report 1 and Agenda Item H.5.a, Supplemental SSC Report, from the March 2021 Briefing Book). Using a similar approach to that used in 2020, NMFS computed a median F/F_{MSY} ratio of 0.79 for the terminal years of the assessment (2021-2023). This indicates that current fishing mortality is below MFMT and the stock is not subject to overfishing (Table 8-1). NMFS also computed a median $B/0.5B_{MSY}$ ratio of 2.1, again using the approach reviewed by the SSC in 2020. This indicates that current stock size is above MSST and the stock is not overfished (Table 8-2).

8.3. Skipjack Tuna (Katsuwonus pelamis)

Two skipjack tuna stocks are identified in the Pacific Ocean, the EPO stock and the WCPO stock, defined by the IATTC and WCPFC Convention Areas. The stock managed under the HMS FMP is the EPO stock.

The most recent interim stock assessment for the EPO stock was conducted by the IATTC scientific staff in 2024:

> Stock Assessment of Skipjack Tuna in The Eastern Pacific Ocean: 2024 Benchmark Assessment. Rujia Bi, Mark N. Maunder, Haikun Xu, Carolina Minte-Vera, Juan Valero, and Alexandre Aires-da-Silva, A. Prepared for the Scientific Advisory Committee 15th Meeting La Jolla, California (USA) 10 - 14 June 2024 Document SAC-15-04 REV.

The stock assessment presents the following estimates of stock status (p. 21-22, figure and table references omitted):

> The reference model estimates that the spawning biomass is currently above the target proxy of 30% of the unexploited spawning biomass under either the static (SBR) or the dynamic (dSBR) spawning biomass ratio. Only one of the sensitivity analyses, which removed the ECHO index, estimates that the stock is below the proxy target and only when based on the static definition). None of these scenarios estimate that the stock is below the limit reference point.
>
> The IATTC harvest control rule takes uncertainty into consideration, particularly for the limit reference point. The estimates of uncertainty for the reference model do not exceed the limit reference point. The pessimistic model that excludes the echosounder buoy index comes close but does not exceeding the limit reference point by 10% for the start of 2024.

The historical trajectories show that the stock size fluctuates and can go below the targetreference point. It should be noted that the initial values for dSBR are misleading because the model is not fit to an initial equilibrium catch and the initial fishing mortality is just used as a way to construct the initial age-structure and therefore does not represent the real initial fishing mortality.

The current fishing mortality is lower than that corresponding to the biomass target for the reference model. It is also the case in all sensitivity analyses. SAC-15-04 Skipjack tuna benchmark assessment 2024 22

Stock status relative to the *status quo* defined by the average fishing mortality over 2017-2019 was evaluated using an approximation to the exploitation rate, which was the total catch divided by the biomass of fish ages 2 quarters and older. The reference model estimated that the exploitation rates in 2022 and 2023 were less than *status quo*. Only the pessimistic model that excludes the echosounder buoy index estimated exploitation rates that exceeded the status quo in 2022 and 2023 slightly.

The current NMFS status determination is based on the 2024 IATTC stock assessment. In 2024 NMFS reported to the Council:

> The IATTC scientific staff completed a benchmark assessment for skipjack tuna in the EPO in 2024. Consistent with the Council's recommendation, NMFS used conservative proxies for F_{MSY} and B_{MSY}, based on the fishing mortality associated with 30% of the unfished level ($30\%SSB_{F=0}$). Using the results of this assessment, NMFS calculated a median $F_{2021\text{-}2023}/F_{0.3SSB0}$ ratio of 0.42, indicating that current fishing mortality is below MFMT and the stock is not subject to overfishing (Table 8-1). NMFS also calculated a median $SSB_{current}/(0.5*30\%SSB_{F=0})$ ratio of 3.13, indicating that current stock size is above MSST and the stock is not overfished (Table 8-2).

8.4. Yellowfin Tuna (Thunnus albacares)

Two yellowfin tuna stocks are identified in the Pacific Ocean, the EPO stock and the WCPO stock, defined by the IATTC and WCPFC Convention Areas. The stock managed under the HMS FMP is the EPO stock.

The most recent assessment of the EPO stock was completed by IATTC scientific staff in 2020:

> Yellowfin Tuna in the Eastern Pacific Ocean, 2019: Benchmark Assessment. Carolina Minte-Vera, Mark N. Maunder, Haikun Xu, Juan L. Valero, Cleridy E. Lennert-Cody, and Alexandre Aires-da-Silva. Prepared for the Eleventh Meeting of the Inter-American Tropical Tuna Commission (IATTC) Scientific Advisory Committee. Doc SAC-10-07.

This assessment integrated an ensemble of 12 different reference models tested against four different steepness assumptions s (0.7, 0.8, 0.9, and 1.0), for a total of 48 models. The assessment was used as the basis for a risk assessment by IATTC scientific staff (SAC-11-08 Rev1). "[T]he overall results of the risk analysis, which include all 48 reference models, indicate only a 9% probability that the fishing mortality corresponding to the maximum sustainable yield (F_{MSY}) has been exceeded. There is a 12% probability that the spawning stock biomass corresponding to the maximum sustainable yield (S_{MSY}) has been breached."

In its November 2020 report (Agenda Item I.3.a, Supplemental NMFS Report 1) NMFS concluded:

> The 2020 assessment indicates a 12 percent probability that spawning biomass at the beginning of 2020 (S) is below a maximum sustainable yield (MSY) level (i.e., $P(S_{CUR}<S_{MSY})= 12\%$), and a nine percent probability that 2017-19 fishing mortality exceeds the MSY level (i.e., $P(F_{CUR}>F_{MSY})$ =

9%). Because the IATTC's target biomass threshold (S_{MSY}) is more conservative than MSST (i.e., 1-M*B_{MSY}, where M is natural mortality), the assessment results suggest that the EPO yellowfin tuna stock is unlikely to be overfished. Because the IATTC's target fishing mortality threshold (F_{MSY}) is the same reference level as MFMT, the assessment results suggest it is also unlikely that the stock is subject to overfishing. There is zero probability that both IATTC's S and F limit reference points have been exceeded ($P(S_{CUR}<F_{LIMIT}) = 0\%$; $P(F_{CUR}>F_{LIMIT}) = 0\%$).

The current NMFS overfishing status determination is based on the 2020 IATTC stock assessment and finds the stock is not subject to overfishing, see Table 8-1. Because of issues in deriving a proxy for MSST from a probabilistic assessment framework, the overfished status determination is based on the 2018 IATTC stock assessment (see Stock Assessment Report 20). Based on that assessment, NMFS finds the stock is not overfished, see Table 8-2

8.5. Striped marlin (Kajikia audax)

Stock assessments have been performed on three striped marlin stocks in the Pacific Ocean: a northern EPO stock (assessed by the IATTC in 2009), a WCNPO stock (assessed by the ISC in 2024),[2] and a Southwest Pacific Ocean stock (assessed by the SPC in 2019). The stock managed under the HMS FMP is the EPO stock.

The assessment for the northern EPO stock, completed by IATTC scientific staff in 2010 is:

> Assessment of Striped Marlin in the Eastern Pacific Ocean In 2008 and Outlook for the Future. Michael G. Hinton. Inter-American Tropical Tuna Commission. Document SAC-01-10 and also included in Stock Assessment Report 10.

Stock status as reported in the assessment for 2009, the terminal year of the assessment:

> …the northern EPO stock of striped marlin is not being overfished [C(2009)/MSY = 0.36, F_{mult} = 6.4], and that the stock biomass is increasing from the low biomass (about 750 t) and SBR (about 0.16) observed in 2003. The estimates of biomass and SBR for 2009 were about 3,600 t and 0.31, respectively.
>
> The results of the base case assessment indicate that at present the SBR for the stock is about 0.31, and that $S(2009)/S_{MSY} = 1.2$, which indicates that the spawning biomass is above the level expected to support harvests at the estimated MSY of 2,000 t.
>
> The results of the assessment ($F_{mult} = 6.4$) also indicate that levels of fishing effort are below those which would be expected to harvest striped marlin at the MSY level. Recent catches, which are estimated to be about 750 to 850 t, are about 40 percent of MSY. If harvests continue at this level, then it is expected that the biomass of the northern EPO stock of striped marlin will continue to increase over the near term.

The current NMFS status determination is based on the 2009 IATTC stock assessment and finds the stock is not subject to overfishing (Table 8-1) and is not overfished (Table 8-2), based on the framework in the HMS FMP.

[2] Although not managed under the HMS FMP, the tables in Agenda Item J.3.a, NMFS Report 1, September 2024, present reference points, stock status criteria, status determinations for this stock and this information is reproduced in Table 8-1 and Table 8-2.

8.6. Swordfish (*Xiphias gladius*)

Three swordfish stocks have been assessed in the Pacific Ocean: A North Pacific Stock, a Southeast Pacific Ocean stock (south of 10°N in the IATTC Convention Area), and a southwest Pacific stock in the WCPFC Convention Area south of the equator. The North Pacific stock is the stock managed under the HMS FMP.

The most recent stock assessment for swordfish in the North Pacific was completed by the ISC Billfish Working Group in 2023:

> Stock Assessment Report for Swordfish (*Xiphias gladius*) in the North Pacific Ocean Through 2021. ISC Billfish Working Group. Prepared for the Twenty-third Meeting of the ISC, July 12-17, 2023. The assessed stock is defined to be the waters of the North Pacific Ocean contained in the WCPFC Convention Area bounded by the equator and the waters of the IATTC Convention Area north of 10°N.

The following information on the status of this stock was provided by ISC23 (Plenary Report section 6.5):

1. Female spawning stock biomass was estimated to be 35,778 mt in 2021, with a relative SSB ratio of $SSB/SSB_{MSY} = 2.18$ in 2021;
2. Estimated F (arithmetic average of F for ages 1 – 10) averaged roughly F=0.09 yr-1 during 2019-2021 with a relative fishing mortality of $F/F_{MSY} = 0.49$ in 2021; and
3. Relative to MSY-based reference points, overfishing is very likely not occurring (>99% probability) and the NPO SWO stock is very likely not overfished (>99% probability).

The current NMFS status determination is based on this stock assessment. In 2024 NMFS Reported to the Council:

> This assessment, completed in 2023, indicates that the spawning stock biomass at MSY (SSB_{MSY}) is 16,388 metric tons (mt) and F_{MSY} is 0.18.
>
> To evaluate whether fishing mortality exceeded the MFMT, NMFS evaluated a ratio of fishing mortality for swordfish aged between 1 and 10 years, from the time period 2019-2021. If $F_{ages1\text{-}10\ in\ 2019\text{-}2021}/F_{MSY} > 1.0$, the stock would be considered subject to overfishing. The recent fishing mortality (as an average for ages 1-10 in 2019-2021) was 0.09, so $F_{ages1\text{-}10\ in\ 2019\text{-}2021}/F_{MSY}$ is 0.49, which indicates that the stock is not subject to overfishing (Table 8-1).
>
> To evaluate whether current biomass is above the MSST, NMFS considered that $SSB_{current(2021)}$ is assessed at 35,788 mt, and assumed natural mortality (M) to be equal to 0.5 (though, M varies with age). Therefore MSST is 8,194 mt. The resulting ratio of $SSB_{current(2021)}/MSST$ is 4.37, which indicates the stock is not overfished (Table 8-2). The 2023 assessment results showed SSB estimates have been relatively stable, and began increasing above historic levels in 2015.

8.7. Blue shark (*Prionace glauca*)

Two blue shark stocks are recognized in the Pacific Ocean, a North Pacific stock and a South Pacific stock or stocks. (WCPFC conducted a stock assessment on the South Pacific stock in its Convention Area in 2021. IATTC is currently developing an assessment for the SEPO.) The North Pacific stock is subject to management under the HMS FMP.

The most recent NPO blue shark stock assessment was completed by the ISC in 2022:

Stock Assessment and Future Projections of Blue Shark in the North Pacific Ocean Through 2020. Report of the Shark Working Group. International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. 12-18 July 2022.

The following information on the status of the NPO blue shark stock was provided by the ISC23 Plenary based on the 2022 stock assessment (Plenary Report section 6.3):

1. Target and limit reference points have not been established for pelagic sharks in the Pacific Ocean. Stock status is reported in relation to MSY-based reference points;
2. Median female SSB in 2020 (SSB_{2020}) was estimated to be 1.170 of SSB_{MSY} (80th percentile, 0.570 - 1.776) and is likely (63.5% probability) not in an overfished condition relative to MSY-based reference points;
3. Recent annual F (F2017-2019) is estimated to be below FMSY and overfishing of the stock is very likely (91.9% probability) not occurring relative to MSY-based reference points; and
4. The base case model results show that there is a 61.9% joint probability that NPO BSH stock is not in an overfished condition and that overfishing is not occurring relative to MSY-based reference points.

The NMFS status determination is based on the 2022 ISC stock assessment and finds the stock is not subject to overfishing (Table 8-1) and is not overfished (Table 8-2), based on the framework in the HMS FMP.

8.8. Common Thresher Shark (Alopias vulpinus)

Although a pelagic species, common thresher sharks are relatively coastal, occurring primarily within 40-75 miles of land, over continental and insular shelves and slopes, and occupy cooler, more temperate waters. Although distributed around the Pacific basin (and circumglobally), an assessment has only been completed on the stock occurring off the west coast of North America (see below), which is the stock managed under the HMS FMP.

The most recent stock assessment was completed by NMFS in 2018:

Status of Common Thresher Sharks, *Alopias vulpinus*, along the West Coast of North America: Updated Stock Assessment Based on Alternative Life History. Teo, S., Garcia Rodriguez, E. and Sosa-Nishizaki. O. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-595. https://doi.org/10.7289/V5/TM-SWFSC-595

This is the first assessment completed for this stock. This assessment was peer reviewed in 2017 and revised in 2018. The assessment found:

> The estimated fishing intensity (1-SPR) on common thresher sharks off the west coast of North America is currently relatively low at 0.097 (average of 2012 – 2014) and substantially below the estimated overfishing threshold (MFMT), with $(1\text{-}SPR_{12\text{-}14})/(1\text{-}SPR_{MSY})$ at 0.21. Similarly, the estimated number of mature female sharks in 2014 (S_{2014}) for this stock is at 62% of its unexploited level and is substantially larger than the estimated MSST, with S_{2014}/MSST at 1.40. Thus, this stock of common thresher sharks is unlikely to be in an overfished condition nor experiencing overfishing. (Table references excluded.)

Based on the 2018 assessment NMFS determined the stock is not subject to overfishing (Table 8-1) and is not overfished (Table 8-2), based on the framework in the HMS FMP.

8.9. Shortfin Mako Shark (Isurus oxyrinchus)

Stock assessments (see below) support a single well-mixed stock in the North Pacific Ocean with distinct parturition sites: eastern (Southern California Bight, and Baja California) and western (waters east of Japan). A Southwest Pacific Ocean stock has also been assessed (WCPFC-SC18-2022/SA-WP-02-Rev1, August 3, 2022). The North Pacific stock is managed under the HMS FMP.

The most recent stock assessment for swordfish in the North Pacific was completed by the ISC Shark Working Group in 2024:

Stock Assessment of Shortfin Mako Shark in the North Pacific Ocean Through 2022. ISC Shark Working Group. June 2024. ISC/24/ANNEX/14.

The following information on the status of this stock was provided by ISC24 (Plenary Report section 6.4.3):

1. No biomass-based or fishing mortality-based limit or target reference points have been established for NPO SMA by the IATTC or WCPFC;
2. Recent median D ($DD_{2019-2022}$) is estimated from the model ensemble to be 0.60 (95% CI = 0.23-1.00). The recent median $DD_{2019-2022}$ was 1.17 times DD_{MMMMM} (95% CI = 0.46-1.92) and the stock is likely (66% probability) not in an overfished condition relative to MSY-based reference points;
3. Recent U ($U_{2018-2021}$) is estimated from the model ensemble to be 0.018 (95% CI = 0.004-0.07).
4. $U_{2018-2021}$ was 0.34 times (95% CI = 0.07-1.20) UU_{MMMMM} and overfishing of the stock is likely not occurring (95% probability) relative to MSY-based reference points;
5. The model ensemble results show that there is a 65% joint probability that the North Pacific SMA stock is not in an overfished condition and that overfishing is not occurring relative to MSY based reference points; and
6. Several uncertainties may limit the interpretation of the assessment results including uncertainty in catch (historical and modeled period) and the biology and reproductive dynamics of the stock, and the lack of CPUE indices that fully index the stock.

In 2024 NMFS Reported to the Council:

> The ISC assessed shortfin mako shark in the NPO through 2021. The MSY-based proxies used for determining the status of this stock based on the 2018 assessment are not reported in the 2024 assessment (see Agenda Item E.3.a, Supplemental NMFS Report 1, from the September 2020 Briefing Book). The F_{MSY} and B_{MSY} reference points utilized in the 2024 assessment are based on exploitation (U) and depletion (D) relative to carrying capacity, respectively.
>
> U_{MSY} is the exploitation rate which produces MSY, and is assessed at a median value of 0.055. To evaluate whether fishing mortality exceeds MFMT, NMFS recommends using U_{MSY} as a proxy for F_{MSY}. U for 2018-2021 is 0.018, so the ratio of $U_{2018-2021}$ to U_{MSY} is 0.34. This indicates that the exploitation rate (i.e., fishing mortality) is below MFMT and the stock is not subject to overfishing.
>
> Total depletion (D) is the total number of shortfin mako sharks divided by the unfished carrying capacity. D_{MSY} is the depletion rate at MSY, and is assessed at a median value of 0.51. $D_{2019-2022}$ is assessed as 0.60. NMFS recommends using the D_{MSY} as a B_{MSY} proxy by which to evaluate whether the current biomass is above the MSST. Using this approach, NMFS calculates MSST as equal to

0.435, where M is 0.147.[3] This results in a ratio of 1.38, indicating that the current biomass is above MSST and the stock is not overfished.

8.10. Dorado (Coryphaena hippurus)

Dorado, or mahi mahi, are found circumglobally in tropical and subtropical waters but stock structure in the Pacific is poorly understood. Throughout their range they are often found associated with both natural and manmade floating objects. In the Eastern Pacific, dorado are most abundant off Mexico, Panama, Ecuador, Peru, and around the Galapagos Islands. They move into U.S. waters as far north as Point Conception, California, primarily during warm water years. The exploratory stock assessment referenced below found "the available information does not provide strong evidence that there is more than one stock of dorado in the EPO, although there are indications of some spatial structure." For the purposes of management under the HMS FMP, the stock is considered the portion of the population occurring in the EPO.

The IATTC conducted an exploratory assessment for a EPO stock south of the equator in 2016:

> Exploratory Stock Assessment of Dorado (*Coryphaena Hippurus*) in the Southeastern Pacific Ocean (DRAFT). Alexandre Aires-da-Silva, Juan L. Valero, Mark. N. Maunder, Carolina Minte-Vera, Cleridy Lennert-Cody, Marlon H. Román, Jimmy Martínez-Ortiz, Edgar J. Torrejón-Magallanes and Miguel N. Carranza. Inter-American Tropical Tuna Commission, Scientific Advisory Committee Sixth Meeting. May 9-13, 2016.

Although, a single stock may occur over a larger area of the EPO, data were only sufficient to conduct the assessment on the population south of the equator, based on a "core area" located off Ecuador and Peru. The assessment executive summary concludes:

> Although the assessment results contribute to knowledge about the population dynamics of dorado and its history of exploitation in the EPO, the IATTC staff is unable to draw conclusions about stock status, because no reference points, target or limit, have been defined for dorado in the EPO. Nonetheless, some management quantities are presented and discussed for consideration. Recent catches are near the estimates of maximum sustainable yield (MSY) from the stock assessment. However, yield-per-recruit (YPR) analyses show that the yield curve is very flat, and the fishing mortality required to achieve the MSY is poorly defined. A complementary study presents an exploratory management strategy evaluation (MSE) for dorado in the southern EPO. Overall, this study shows that Stock Synthesis is a promising tool for conducting stock assessments of this species in the EPO. More research is needed to refine the model and the data used, and to prioritize collection of new data for assessing dorado. Analyses expanding the spatial extent of the assessment and including data from more fisheries (e.g., Central America, Mexico, and Chile) could be considered in the future.

NMFS concluded that the status of the stock is unknown given the lack of data available to assess status.

[3] We calculated natural female mortality to be 0.147, based on an average of three assessed estimates (0.133, 0.139, and 0.169)

Table 8-1. Stock assessment information for determining whether HMS FMP stocks are subject to overfishing.

Stock	Assessment Year	Assessment Lead	MFMT (F_{MSY} orProxy)	Current F_{MSY} or proxy estimate	Current F quantity estimate	RFMO reference point	F/F_{MSY} ratio	Subject to Overfishing?
Assessments Conducted in 2023-2024								
NPO Albacore	2023	ISC	F%SPR, MSY*	16.4 %SPR	$F\%SPR_{2018-20}$= 59.0 %SPR	F45%SPR	3.6†	No
NPO Pacific bluefin tuna	2024	ISC	1-20%SPR	0.8	$1\text{-}SPR_{2020-22}$= 0.76	N/A	0.88	No
EPO Bigeye tuna	2024	IATTC	F_{MSY}	N/A	N/A	F_{MSY}	0.79	No (Pending)
EPO Skipjack tuna	2024	IATTC	F_{MSY} proxy = $0.3B_0$	N/A	N/A	F_{MSY}	0.42	No (Pending)
WCNPO Striped marlin††	2023	ISC	F_{MSY}	0.63	0.68	N/A	1.08	Yes
NPO Swordfish	2023	ISC	F_{MSY}	0.18	0.09	N/A	0.5	No (Pending)
NPO Shortfin mako shark	2024	ISC	U_{MSY}	0.055	$U_{2018-2021}$ = 0.018	N/A	0.34	No (Pending)
Most Recent Assessment from Previous Years								
Yellowfin tuna in the EPO	2020	IATTC	FMSY	NA	NA	NA	median of F2017-19/Fmsy = 0.65	No
Blue shark in the NPO	2022	ISC	FMSY	0.76	F2017-19 = 0.33	NA	0.45	No
Common thresher shark	2018	NMFS	1-SPRMSY	0.45	1-SPR2012-14= 0.097	NA	0.21	No
EPO striped marlin	2010	IATTC	F	NA	NA	NA	0.16	No
Dorado								Unknown

† Note that for these SPR-based reference points, higher ratios indicate lower fishing mortality, so values greater than 1.0 indicate fishing mortality lower than MFMT.

†† Not managed under the HMS FMP.

Table 8-2. Stock assessment information for determining whether HMS FMP stocks are overfished.

Stock	Assessment Year	Assessment Lead	B_{MSY} or proxy	Current B_{MSY} or proxy estimate	Current B quantity estimate	MSST (1-M*B_{MSY} or 0.5B_{MSY})	Current B/MSST	RFMO reference point	Overfished?
Assessments Conducted in 2023-2024									
NPO Albacore †	2023	ISC	SSB_{MSY}	23,154 mt	SSB_{2021} = 70,229 mt	(1-M)*SSB_{MSY}=12,040 mt†	5.83	30%$SSB_{current, F=0}$(threshold) 14%$SSB_{curren\ t, F=0}$ (limit)	No
NPO Pacific bluefin tuna	2024	ISC	20%$SSB_{F=0}$	124,451 mt	SSB_{2022} =144,483 mt, or 23.2%$SSB_{F=0}$	93,338 mt	1.55	N/A	No (Pending)
EPO Bigeye tuna	2024	IATTC	B_{MSY}	N/A	N/A	0.5B_{MSY}	median B/0.5B_{MSY} = 2.1	B_{MSY}	No
EPO Skipjack tuna	2024	IATTC	30%$SSB_{F=0}$	11,367 mt	17,809 mt	5,684 mt	median B/0.5B_{MSY} = 3.13	B_{MSY} proxy = 0.3$B_{F=0}$	No
WCNPO Striped marlin††	2023	ISC	SSB_{MSY}	2,920 mt	SSB_{2020} = 1,696 mt	1,460 mt	1.16	N/A	No (Pending)
NPO Swordfish	2023	ISC	SSB_{MSY}	16,388 mt	SSB_{2021} = 35,778 mt	0.5*SSB_{MSY} =8,194 mt	4.37	N/A	No
NPO Shortfin mako shark	2024	ISC	D_{MSY}	0.51	$D_{2019\text{-}2022}$ = 0.60	(1-0.147)*D_{MSY} =0.435	1.38	N/A	No
Most Recent Assessment from Previous Years									
Yellowfin tuna in the EPO	2018	IATTC	S_{MSY} (S=unitless spawning biomass index)	3,634	S = 3,925 (S=unitless spawning biomass index)	1,817	2.1	NA	No
Blue shark in the NPO	2022	ISC	Female SSBmsy	83,545	SSB_{2020} = 92,954	63,494-71,013	1.3-1.46	NA	No
Common thresher shark	2018	NMFS	SSB_{MSY}	101,500 mature females	SSB = 136,800 mature females	97,500 mature females	1.4	NA	No
Dorado									Unknown

† Natural female mortality for North Pacific albacore is estimated at 0.48.

†† Not managed under the HMS FMP.

8.11. Assessments for Other Pacific Ocean Stocks

Other stocks of HMS management unit species occur in the Pacific Ocean. These stocks are not managed under the HMS FMP. For reference the most recent assessments for these stocks are listed below.

- Albacore (South Pacific) (2021); Stock assessment of South Pacific albacore tuna; 2024 (Rev 03). WCPFC Scientific Committee Twentieth Regular Session, August 14-21, 2024. WCPFC-SC20- SA-WP-02.
- Bigeye (WCPO) (2023): Stock assessment of bigeye tuna in the western and central Pacific Ocean: 2023 - Rev.02 (Final). J. Day, A. Magnusson, T. Teears, J. Hampton, N. Davies, C. Castillo Jordan, T. Peatman, R. Scott, J. Scutt Phillips, S. McKechnie, F. Scott, N. Yao, G. Pilling, P. Williams, P. Hamer. Scientific Committee Nineteenth Regular Session, August 16-24, 2023. SC16-SA-WP-03.
- Skipjack (WCPO) (2022): Stock assessment of skipjack tuna in the western and central Pacific Ocean (Rev.3). Jordán, C.C., Teears, T., Hampton, J., Davies, N., Phillips, J.S., McHenchie, S., and others . Scientific Committee Eighteenth Regular Session. Western and Central Pacific Fisheries Commission, August 10-18, 2022. WCPFC-SC18-2022/SA-WP-01.
- Yellowfin (WCPO) (2023): Stock assessment of yellowfin tuna in the Western and Central Pacific Ocean: 2023 - Rev.02 (Final). A. Magnusson, J. Day, T. Teears, J. Hampton, N. Davies, C. Castillo Jordán, T. Peatman, R. Scott, J. Scutt Phillips , S. McKechnie, F. Scott, N. Yao, G. Pilling P. Williams, P. Hamer. Scientific Committee Nineteenth Regular Session, August 16-24, 2023. SC19-SA-WP-04,

- Striped Marlin (WCNPO) (2023): Stock assessment report for striped marlin (*Kajikia audax*) in the Western and Central North Pacific Ocean through 2020. 23rd Meeting of the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean, July 12-17, 2023. ISC/23/ANNEX/14.
- Striped Marlin (SW Pacific – WCPO) (2024): Stock assessment of SW Pacific striped marlin in the WCPO: 2024 (Rev. 2). C. Castillo-Jord an1, J. Day1, T. Teears1, N. Davies, J. Hampton, S. McKechnie, A. Magnusson, T. Peatman, T. Vidal, P. Williams, P. Hamer. Scientific Committee Twentieth Regular Session. Western and Central Pacific Fisheries Commission, August 14-21, 2024. WCPFC-SC20-2024/SA-WP-03 (Ver. 2.01.
- Swordfish (SWPO) (2021): Stock Assessment for Southwest Pacific swordfish. N. Ducharme- Barth, C. Castillo-Jordan, J. Hampton, P. Williams1, G. Pilling, P. Hamer. WCPFC-SC17- 2021/SA-WP-04. July 21, 2021.
- Swordfish (SEPO) (2022): South EPO swordfish benchmark assessment in 2019. Carolina Minte- Vera, Mark N. Maunder, Haikun Xu, Juan Valero, Alexandre Aires-da-Silva. IATTC 100th Meeting, August 1-5, 2022. Document IATTC-100 INF-B.

- Blue shark (SWPO) (2021). 2021 Stock assessment of Southwest Pacific blue shark. Philipp Neubauer, Kath Large and Stephen Brouwer. WCPFC-SC17-2021/SA-WP-03 Rev. 1. August 10, 2021.
- Shortfin Mako Shark (SWPO) (2022): Stock assessment of Southwest Pacific shortfin mako shark. Large, K., Neubauer, P. and Brouwer, S. Western and Central Pacific Fisheries Commission, August 10-18, 2022. WCPFC-SC18-2022/SA-WP-02-Rev1.

8.12. Catches of HMS Management Unit Species in West Coast Fisheries

Except for North Pacific albacore, Pacific bluefin tuna, and swordfish, West Coast fisheries catch of HMS FMP management unit species has comprised less than one percent of stockwide catch. Historically, West Coast North Pacific albacore catch has been about one-fifth of the stockwide total. For Pacific bluefin tuna and swordfish it has been about 5% of stockwide catch. These catch fractions can inform considerations of the "relative impact of U.S. fishing vessels on the stock" when the Council considers responses to a notification that a stock is subject to overfishing or overfished "due to excessive international fishing pressure." When notified by NMFS, Magnuson-Stevens Act section 304(i) requires the Council to develop recommendations for domestic regulations and international actions taking into account this relative impact.

Appendix A: US-Canada Albacore Treaty Data Exchange Tables

Table 1. Catch of Albacore by Canadian and U.S. Albacore Troll and Pole-and-Line Vessels in the North Pacific Ocean [1]

	Canadian Fleet [2, 3]					U.S. Fleet [5, 9]				
Year	*Canadian EEZ (%)*	*U.S. EEZ (%)*	*High Seas (%)*	*Total catch (metric tons)*	*Logbook coverage (%) [4]*	*U.S. EEZ (%)*	*Canadian EEZ (%)*	*High Seas (%)*	*Total catch (metric tons) [6]*	*Logbook coverage (%) [7]*
1995	88	2.2	9.8	1,761	18	5.4	5.7	88.9	8,125	*63*
1996	16.9	45.8	37.3	3,321	24	13.5	0.1	86.4	16,962	*42*
1997	7.2	30.5	62.3	2,166	30	16.5	3.5	80.0	14,325	38
1998	7.3	43.6	49.1	4,177	50	14.8	0.1	85.1	14,489	35
1999	16.6	66.8	16.6	2,734	71	65.3	0.8	33.9	10,120	35
2000	9.6	73.1	17.4	4,531	68	69.6	0.2	30.2	9,714	41
2001	13.5	72.7	13.9	5,248	81	57.0	0.3	42.7	11,349	49
2002	7.8	86.2	5.9	5,379	74	63.9	2.0	34.0	10,768	38
2003	8.0	85.3	6.6	6,847	96	86.0	0.6	13.3	14,161	36
2004	16.9	80.7	2.4	7,857	92	92.9	1.2	5.9	13,473	47
2005	33.1	62.6	4.3	4,829	94	92.0	2.3	5.8	8,479	73
2006	18.5	70.1	11.3	5,833	95	82.5	1.0	16.5	12,547	93
2007	21.5	78.5	0.1	6,041	92	98.8	0.7	0.5	11,908	86
2008	4.5	86.4	9.1	5,464	93	78.5	6.0	15.5	11,761	79
2009	7.1	91.3	1.5	5,693	97	93.1	2.5	4.4	12,340	86
2010	35.9	51.2	12.9	6,526	96	72.1	2.1	25.9	11,689	76
2011	12.4	85.7	2.0	5,415	98	94.9	0.4	4.7	10,143	84
2012	83.0	0.0	17.0	2,484	100	99.2	0.0	0.8	14,149	81
2013	59.6	37.9	2.5	5,088	99	96.4	1.5	2.1	12,310	76
2014	55.3	44.6	0.1	4,780	100	94.6	5.2	0.2	13,398	84
2015	66.5	33.4	0.1	4,391	100	96.5	3.3	0.2	11,595	86
2016	54.8	44.4	0.8	2,842	100	97.9	1.4	0.7	10,777	79
2017	11.2	75.0	13.8	1,830	100	91.2	0.2	8.7	7,430	81
2018	30.8	68.9	0.3	2,717	100	95.4	3.8	0.8	7,728	72
2019	51.7	44.9	3.4	2,402	100	93.0	4.2	2.8	7,797	76
2020	71.5	19.6	8.9	2,376	100	77.8	9.5	12.7	7,516	73
2021	70.1	27.9	2.0	2,419	100	80.3	13.6	6.1	4,209	85.6
2022	67.7	31.0	1.3	3,639	100	86.6	12.2	1.2	8,441	93.5
2023 [8]	87.6	0.0	12.4	1,143	100	77.9	0.0	22.1	3,161	83.3

Data Sources and Notes:

[1] Locations are based on logbook records, which are self-reported by vessels.

[2] Canadian data during 1995-2011 are taken from Canadian Tuna Database version 13.02.11.

[3] Percentage of Canadian catch in various zones is based catch locations recorded in logbook. Total Canadian catch data reported in this table are expanded to account for non-reporting vessels based on logbook coverage (cf. Table 2).

[4] Canadian logbook coverage rates are calculated by dividing the number of logbook reporting vessels with the total number of vessels.

[5] USA catch in various zones are based on the percentage of catch recorded by logbooks in each zone.

[6] USA total catch is the sum of landings in the USA west coast ports (from PacFIN) and landings in foreign ports. Since these data sources are considered to be complete, total catch is not expanded based on logbook coverage.

[7] USA logbook coverage rates are based on the ratio of trip landings weights recorded in logbooks to the sum of landings from PacFIN and foreign ports (see Footnote 6).

[8] Preliminary data subject to change. Canadian data from Canadian tuna database version 24.01.24

[9] Proportion of US catch in high seas zone was estimated from logbook data, and includes catch in U.S. EEZ off Alaska due to shapefile used. Catch in waters off Alaska were limited and do not affect the estimates substantially.

Table 2. Landings of Albacore (by country of landing port) by Canadian and U.S. Albacore Troll and Pole-and-Line Vessels in the North Pacific Ocean

Year	Canadian Fleet [1]										
	Landings (metric tons) [2]					Number of Landings			Number of Landing Vessels		
	Canadian Ports	*U.S. Ports (DFO estimates) [3]*	*U.S. Ports (NOAA estimates) [4]*	*Other Ports [5,8]*	*Total [10]*	*Canadian Ports*	*U.S. Ports (DFO estimates) [3]*	*U.S. Ports (NOAA estimates) [4]*	*Canadian Ports*	*U.S. Ports (DFO estimates)*	*U.S. Ports (NOAA estimates) [9]*
1995	230	67	67	104	401	*76*	4	7	53	3	4
1996	662	311	868	106	1,636	93	33	102	62	20	66
1997	563	294	399	147	1,109	67	25	54	51	14	32
1998	1,892	281	961	82	2,935	173	30	67	104	16	29
1999	1,574	484	713	193	2,480	274	69	106	158	35	52
2000	2,432	537	889	424	3,745	346	79	110	160	44	57
2001	3,474	617	806	364	4,644	520	51	92	193	31	52
2002	3,866	181	702	347	4,915	465	29	71	169	17	38
2003	3,781	2,132	3,118	655	7,554	464	241	285	177	87	105
2004	2,586	977	1,130	3,590	7,306	659	141	89	198	67	52
2005	3,473	745	811	286	4,570	513	88	85	195	49	45
2006	5,281	327	397	300	5,978	495	35	31	161	18	19
2007	5,596	283	357	73	6,025	559	29	35	191	20	22
2008	3,693	1,236	1,359	122	5,174	341	106	114	123	42	46
2009	4,662	642	650	298	5,610	434	53	47	134	30	26
2010	4,961	811	958	446	6,364	502	78	76	154	45	42
2011	4,059	1,094	1,179	170	5,408	453	89	93	174	47	47
2012	2,219	0	0	265	2,484	276	0	0	174	0	0
2013	4,301	609	650	168	5,119	278	39	41	177	19	22
2014	4,130	395	415	256	4,801	339	26	28	147	12	12
2015	3,978	244	245	160	4,383	408	19	19	160	11	11
2016	2,634	186	189	22	2,845	388	17	17	150	9	9
2017	1,583	248	236	0	1,831	240	21	20	121	12	11
2018	2,483	234	221	0	2,717	275	20	19	121	9	8
2019	2,235	139	136	28	2,402	269	12	12	122	7	7
2020	2,376	0	^	0	2,376	247	0	^	104	0	^
2021	2,419	0	^	0	2,419	270	0	^	113	0	^
2022	3,487	144	84	8	3,639	202	10	6	117	10	5
2023 [12]	1,140	0	^	3	1,143	116	0	^	78	0	^

Table 2 (continued-1)

	US fleet[13]									
	Landings (metric tons)						Number of Landings			
Year	*Canadian Ports (DFO estimates from offload slips)* [6]	*Canadian Ports (DFO estimates from port access applications)* [14]	*Canadian Ports (NOAA estimates)*	*U.S. Ports* [9]	*Other Ports* [11]	*Total* [10]	*Canadian Ports (DFO estimates from offload slips)* [6]	*Canadian Ports (DFO estimates from port access applications)* [14]	*Canadian Ports (NOAA estimates)*	*U.S. Ports* [9]
1995				6,407	1,753	8,160				1,000
1996				13,209	2,188	15,397				1,710
1997				10,831	3,009	13,840				3,674
1998				12,628	1,135	13,763				2,470
1999				8,809	1,422	10,231				2,619
2000				8,086	1,574	9,660				2,230
2001				10,263	972	11,235				3,453
2002			^	9,298	163	9,461			<3	2,432
2003			^	13,491	487	13,978			<3	2,821
2004			444	13,367	24	13,835			10	2,727
2005			83	8,217	9	8,309			4	1,761
2006			^	12,374		12,374			<3	2,163
2007			674	11,143		11,817			13	2,471
2008	721		455	9,768		10,489	19		9	1,700
2009	721		664	11,621		12,342	16		12	2,596
2010	919		601	10,871		11,790	24		17	2,339
2011	611		282	9,840		10,451	21		12	2,560
2012	0		0	13,861		13,861	0		0	3,309
2013	514		289	12,019		12,533	16		9	2,559
2014	1459		1,290	12,108		13,567	36		30	2,513
2015	756		557	11,038		11,794	30		20	2,389
2016	482		511	10,266		10,777	22		22	2,488
2017	659		328	7,102		7,761	27		16	2,008
2018	680	1,043	855	6,873		7,916	28		28	1,656
2019	367	1,126	578	7,188		8,314	12		18	2,229
2020	282	1,360	648	6,868		8,228	7		15	1,422
2021	209	1,212	719	3,490		4,702	8		22	845
2022		1,775	1412	7,029		8,804	0	43	32	1,415
2023 [12]		0	0	3,161		3,161	0	0	0	830

Table 2 (continued-2)

	US fleet[13]			
	Number of Vessels that landed fish [7]			
Year	*Canadian Ports (DFO estimates from offload slips)* [6]	*Canadian Ports (DFO estimates from port access*	*Canadian Ports (NOAA estimates)*	U.S. Ports [9]
1995				472
1996				658
1997				1,160
1998				838
1999				772
2000				707
2001				929
2002			<3	696
2003			<3	782
2004			<3	727
2005			3	552
2006			<3	615
2007			9	651
2008	11		6	477
2009	11		8	655
2010	16		9	609
2011	13		8	640
2012	0		0	816
2013	12		6	684
2014	18		17	590
2015	19		13	560
2016	12		15	557
2017	14		13	495
2018	13		20	434
2019	7		12	540
2020	5		11	391
2021	3		17	292
2022		27	19	399
2023 [12]		0	0	300

Data Sources and Notes:

[1] Canadian landings data prior to 2012 are from Canadian Tuna Database version 13.02.11

[2] Landings for Canadian fleet are based on salesslip weights (where available) or estimated weights in logbooks and are not expanded to account for non-reporting vessels (cf. Table 1).

[3] DFO estimates of Canadian landings in US ports are based on estimated weights in logbooks and are not expanded.

[4] NOAA estimates of landings data by Canadian fleet are derived from PacFIN and are not expanded.

[5] Other ports category is used for landings in non-US and non-Canada ports or where the landing port was unknown due to missing data. Occasional landings in American Samoa (Pago pago) are included early in the time series.

[6] DFO estimates of US landings in Canadian ports based on offloading fish slip data. These are not expanded likely to be a minimum bound because of incomplete fish slip data and reports from Canadian buyers/processors.

[7] Number of landing vessels may be slightly inaccurate due to landing slips with invalid or missing vessel IDs (0.15 to 3.9%)

[8] The majority of Canadian landings in 2004 did not include information on landing port but the majority of these landings were likely made in Canadian ports.

[9] U.S. DATA Source: Pacific Fisheries Information Network (PacFIN) retrieval dated , 03/28/2023. Number of landings estimated from unique vessel ID and Fish Ticket Dates

[10] Where both DFO and NOAA estimates exist, total is calculated by adding the greater of the two values

[11] USA landings in Other Ports (non-US West Coast & non-Canadian ports) include American Samoa and Hawaii

[12] Preliminary data subject to change. Canadian data from Canadian tuna database version 24.01.24

[13] U.S. landings data do not include <200 mt of albacore landings in Alaskan ports made by U.S. vessels during 1994-2015.

[14] DFO estimates of US landings in Canadian ports based port access applications submitted by US vessels. To be reviewed in detail by Data WG in 2024.

* = no data, 0 = more than 0 mt but less than 1, ^ = confidential data (less than 3 vessels)

Table 3. Distribution of Canadian and U.S. Albacore Troll and Pole-and-Line Fleet Fishing Effort in the North Pacific Ocean [1]

Year	Canadian Fleet [1]						
	Number of vessels/months allowed to fish in US EEZ	*Number of vessels that fished in US EEZ* [3]	*Number of vessels that fished in Canadian EEZ* [5]	*Vessel Months Used* [4]	*Fishing Effort in US EEZ (boat fishing days)* [2]	*Fishing Effort in Canadian EEZ (boat fishing days)* [2]	*Fishing Effort on high seas (boat fishing days)* [2]
1995	Unlimited	9	175	N/A	191	5,535	197
1996	Unlimited	83	90	N/A	4,222	2,813	1,130
1997	Unlimited	59	67	N/A	1,972	1,010	1,339
1998	Unlimited	91	92	N/A	3,234	1,274	1,507
1999	Unlimited	176	162	N/A	4,316	1,689	965
2000	Unlimited	184	131	N/A	6,738	1,189	842
2001	Unlimited	207	176	N/A	7,697	1,754	570
2002	Unlimited	200	124	N/A	7,207	686	431
2003	Unlimited	177	119	N/A	7,111	892	425
2004	170 vessels or 680 vessel fishing mor	202	172	627	7,551	2,125	266
2005	140 vessels or 560 vessel fishing mor	154	196	410	5,309	2,940	315
2006	125 vessels or 500 vessel fishing mor	139	148	396	4,500	1,401	342
2007	94 vessels or 376 vessel fishing mont	119	191	368	4,809	2,081	12
2008	94 vessels or 376 vessel fishing mont	122	79	338	4,993	360	420
2009	110	107	116	N/A	5,722	675	143
2010	110	109	153	N/A	3,848	2,887	559
2011	110	108	146	N/A	6,549	1,771	285
2012	0	0	174	N/A	0	5,084	890
2013	45 vessels	43	181	N/A	1,870	4,299	296
2014	45 vessels	44	156	N/A	1,774	2,944	27
2015	45 vessels	43	161	N/A	1,435	3,792	17
2016	45 vessels	43	151	N/A	1,892	3,407	60
2017	45 vessels	45	101	N/A	2,865	1,343	770
2018	45 vessels	45	118	N/A	2,228	1,924	44
2019	45 vessels	42	119	N/A	1,621	2,008	253
2020	45 vessels	34	104	N/A	573	2,542	187
2021	45 vessels	41	113	N/A	937	2,664	86
2022	45 vessels	39	117	N/A	1,134	2,849	90
2023 [9]	0 vessels	0	79	N/A	0	1,851	249

Table 3 (continued)

	U.S. Fleet[11]					
Year	*Number of vessels allowed to fish in Canadian EEZ* [6]	*Number of vessels that fished in US EEZ* [7,8]	*Number of vessels that fished in Canadian EEZ* [7, 8]	*Fishing Effort in US EEZ (boat fishing days)* [10]	*Fishing Effort in Canadian EEZ (boat fishing days)* [10]	*Fishing Effort on high seas (boat fishing days)* [10, 11]
1995	Unlimited	472	71	1,461	960	6,786
1996	Unlimited	658	6	3,574	14	10,229
1997	Unlimited	1160	46	4,520	570	10,838
1998	Unlimited	838	3	3,042	26	8,834
1999	Unlimited	772	19	12,560	273	7,859
2000	Unlimited	707	12	8,883	67	4,970
2001	Unlimited	929	15	9,280	75	5,560
2002	Unlimited	696	31	8,132	212	3,552
2003	Unlimited	782	9	10,919	126	2,395
2004	170 vessels or 680 vessel fishing mor	727	21	11,079	213	1,184
2005	140 vessels or 560 vessel fishing mor	552	31	9,943	316	914
2006	125 vessels or 500 vessel fishing mor	615	32	9,883	96	1,043
2007	94 vessels or 376 vessel fishing mont	651	14	10,713	135	233
2008	94 vessels or 376 vessel fishing mont	477	39	7,947	327	1,031
2009	Historical level	655	27	12,002	262	719
2010	Historical level	609	51	10,542	342	1,961
2011	Historical level	640	30	13,619	117	941
2012	0	816	^	14,636	^	380
2013	Historical level	703	21	12,242	229	452
2014	Historical level	617	35	11,425	659	116
2015	Historical level	574	39	10,770	549	186
2016	Historical level	569	31	12,280	251	213
2017	Historical level	518	15	11,293	39	1,287
2018	Historical level	452	26	10,255	476	363
2019	Historical level	554	16	10,108	416	546
2020	Historical level	404	34	7,117	745	819
2021	Historical level	311	54	5,231	894	587
2022	Historical level	433	66	6,983	603	271
2023 ᵛ	0	319	3	3,442	4	1302

Data Sources and Notes:

[1] Effort in different zones are based on logbook records, where locations are self-reported by vessels.

[2] Estimates of Canadian effort in boat fishing days are expanded using the methodology described in Stocker et al. (2007: CTRFAS 2701). 1995-2011 data from Canadian Tuna Database version 13.02.11

[3] Number of vessels that fished in US EEZ: 1995-2008 data from Canadian Tuna Database version 13.02.11, 2009-2011 data from DFO Pacific Licensing System

[4] Vessel Months during 1995-2011 used data from Canadian tuna database v. 13.02.11

[5] Number of vessels that fished in Canadian EEZ: 1995-2011 data from Tuna Database version 13.02.11

[6] Although the historical level of fishing effort for the US fleet was permitted in the Canadian EEZ during 2009-2011, the historical level of fishing effort is not presently quantified.

[7] Number of US vessels that fished in US or Canadian EEZs are not expanded.

[8] Number of US vessels that fished in US or Canadian EEZs refers to vessels that recorded fishing days in those zones in their logbooks and do not include vessels that only had transit days. Where logbook coverage rate is less than 100%, it is assumed that all US vessels that landed fish, had fished in the US EEZ

[9] Preliminary data subject to change. Canadian data from Canadian tuna database version 24.01.24

[10] Estimates of US effort in US EEZ, Canadian EEZ and high seas in boat fishing days are expanded and calculated by multiplying the proportion of reported logbook effort in each zone by the estimated annual effort. Estimation of annual effort has changed in 2017 (Documented in ISC working paper ISC17/STATWG/WP-1)

[11] Proportion of US effort in high seas zone was estimated from logbook data, and includes effort in U.S. EEZ off Alaska.

* = no data, ^ = confidential data (less than 3 vessels)