



PACIFIC STATES MARINE FISHERIES COMMISSION 2019 ANNUAL REPORT



PUBLISHED FOR THE CONGRESS OF THE UNITED STATES AND THE GOVERNORS AND LEGISLATURES OF
ALASKA • CALIFORNIA • IDAHO • OREGON • WASHINGTON



**72ND ANNUAL REPORT OF
THE PACIFIC STATES MARINE FISHERIES COMMISSION**

— Alaska, California, Idaho, Oregon, and Washington —

2019

Presented by the Commissioners of the Pacific States Marine Fisheries Commission
in compliance with the State enabling acts creating the Commission and Public Laws
232; 766; and 315 of the 80th; 87th; and 91st Congresses of the United States.

Respectfully submitted,

PACIFIC STATES MARINE FISHERIES COMMISSION

Randy Fisher, Executive Director

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COMMISSIONERS, ADVISORS, AND COORDINATORS 2019

STATE	COMMISSIONERS	ADVISORS	COORDINATOR
Alaska	Douglas Vincent-Lang Sen. Cathy Giessel Paul Gronholdt	Matt Alward Shannon Carroll Don Lane Matthew Moir	Karla Bush (ADFG)
California	Charlton Bonham Sen. Mike McGuire Barbara Emley	Jim Caito Ken Franke Donald Hansen Mike McCorkle	Sonke Mastrup (CDFW)
Idaho	Ed Schriever Sen. Lee Heider Vacant	Jim Fredericks Sharon Kiefer Paul Kline Joe Stegner	Lance Hebdon (IDFG)
Oregon	Ed Bowles Rep. Caddy McKeown Jeff Feldner	Walter Chuck Steve Fick Liz Hamilton Richard Heap Dorothy Lowman Brad Pettinger Lori Steele	Caren Braby (ODFW)
Washington	Michele Culver Rep. Brian Blake Phil Anderson	Robert Alverson Robert Jones Rich Lincoln Dale Myer Al (Butch) Smith	Heather Hall (WDFW)

MESSAGE FROM THE EXECUTIVE DIRECTOR

Randy Fisher, *Executive Director*

It is a pleasure to submit the 2019 Annual Report of the Pacific States Marine Fisheries Commission (PSMFC).

In addition to the PSMFC work that is reported here, we also joined with our sister Commissions to present our joint view to Congress regarding future funding priorities for the core missions of the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS).

The following are the Commission's views and comments on federal issues before Congress.

NOAA FISHERIES BUDGET

The Commission strongly supports full funding for NMFS in the Fiscal Year 2020 appropriation bill for the Commerce-Justice-Science line items. In an era of reduced federal and state spending, the Commission believes that funding for basic long-term fisheries management programs should be given priority over new initiatives. These priority programs include stock surveys, fisheries research, collection of fishery-dependent data, in-season management, and observer sampling programs. Adequate funding

should be provided to the States when Federal fisheries management or initiatives have been delegated to the States for implementation.

The Commission supports identifying new funding to address ecosystem management plan development and implementation activities associated with building the capacity to address issues associated with climate change. The Commission also believes that new funding should be identified to augment coastwide research and monitoring, addressing changing ocean conditions, harmful algal blooms, and ocean acidification.

We recommend that Congress continues to place special emphasis on collaborative programs such as the Inter-Jurisdictional Fisheries Act that combines State and Federal funding for fishery and ocean projects. The Commission also supports full funding for the Regional Fishery Management Councils (RFMCs) and the NMFS Regions. Fisheries conservation and management programs are administered regionally. Stable funding for the States, RFMCs, and the NMFS regions is critical to successful fishery management.

The Commission strongly supports the continuation of NOAA funding for habitat conservation and restoration. NOAA awards collaboration grants from funds appropriated under the Sustainable Habitat Management line

item for habitat restoration grants. These federal funds are leveraged with state, local, and private contributions for restoration projects. Each project has robust volunteer and community involvement.

HARMFUL ALGAL BLOOM TESTING AND MONITORING

The West Coast and Alaska are facing significant issues relating to the growing incidence of harmful algal blooms (HABs). The HABs are massive, toxic blooms of the marine diatom *Pseudo-nitzschia*. The HAB produces a potent neurotoxin, domoic acid, that can accumulate in shellfish, other invertebrates, and fish. Consumption of domoic acid can cause death in seabirds and marine mammals, and it can result in Amnesic Shellfish Poisoning when consumed by humans.

A significant HAB event was detected in 2015. Scientists were able to track its extent from the Channel Islands in California to Alaska. There appears to be a nexus between the HAB occurrences and ocean acidification and warming ocean trends. The HABs are suspected of contributing to Unusual Mortality Events (die-off of 30 large whales in the Western Gulf of Alaska; sea lion strandings in California); lethal levels of toxins (10 to 30 times higher in Monterey Bay, CA); shellfish closures (Puget Sound and Northern California razor clams; West Coast Dungeness crab); and fishery closures (anchovy and sardines in California). NOAA is still calculating the economic impacts of these closures. Information relating to the magnitude of marine life, sea birds, and marine mammals is anecdotal.

NOAA has funded programs in Alaska and on the West Coast to begin to track HAB hot spots and monitor the domoic acid levels in HAB species. The States also engage in tracking and testing. The States periodically test for levels of domoic acid in clams and mussels. The States also receive limited federal grants to take plankton samples offshore.

The long-term objective is to gather data and develop scientific protocols to better predict the occurrence of HABs. The Commission believes that additional funding should be provided to NOAA to expand its collaboration with state,

tribal, academic, and other partners to monitor, predict, track, and respond to HAB events.

Congress enacted the Fiscal Year 2020 Health & Human Services appropriations bill. The funding section for the Centers for Disease Control and Prevention includes 1 million dollars to enhance harmful algal bloom exposure activities, including surveillance, mitigation, and event response efforts, with a priority given to geographic locations subject to a state of emergency designation related to toxic algae blooms within the past 12 months.

AQUATIC INVASIVE SPECIES

Congress has enacted the Water Resources Development Act reauthorization. The bill increases the authorization for watercraft inspection stations intended to prevent the spread of aquatic invasive species across the Columbia River Basin, Upper Missouri River Basin, Upper Colorado River Basin, and South Platte and Arizona River Basins. The authorization provides 30 million dollars each for the Columbia River Basin, Upper Missouri, and Upper Colorado (including South Platte and Arizona Rivers).

WEST COAST WHALE ENTANGLEMENTS

NOAA Fisheries has been using funds from the Bycatch Reduction Engineering Program to initiate collaborative efforts between marine mammal researchers and West Coast pot and longline fishermen to better understand the increase in the number of large whales that have become entangled in recent years. A NOAA grant to the Commission allowed us to bring fishermen and marine mammal specialists together to explore new gear configurations or practices that may help reduce entanglements last March. Subsequent to the meeting, the Center for Biological Diversity sued the State of California under the Endangered Species Act for its alleged failure to reduce interactions with threatened whale species. The Center has also petitioned NOAA under the Marine Mammal Protection Act to place the West Coast Dungeness Crab fishery into "Category 1" status in an effort to trigger a Take Reduction Team process. The Commission remains concerned about the impact of these lawsuits on the West Coast crab fleet.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) VESSEL INCIDENTAL DISCHARGE PERMIT MORATORIUM

The Commission continues to strongly support legislation to make permanent the moratorium on NPDES Vessel Incidental Discharge Permits for commercial fishing and small passenger fishing vessels regardless of size and for all commercial use vessels less than 79 feet in length. Congressional bill S.371 was not enacted because it became politically intertwined with efforts by large vessel operators to pre-empt State regulation of ballast water discharges in favor of a uniform international standard. The States of Alaska, California, Oregon, and Washington voted in prior Commission meetings to oppose Federal pre-emption of State ballast water management. The NPDES Incidental Discharge Permit Moratorium expired on January 19, 2018. We again urge Congress to permanently resolve this issue.

REVITALIZING THE ECONOMY OF FISHERIES IN THE PACIFIC (REFI) LEGISLATION

Congress enacted the REFI act as part of the Fiscal Year 2015 National Defense Authorization Act. The legislation would allow for the refinancing of the Pacific Coast Groundfish Fishing Capacity Reduction Loan (longer term, reduced repayment fees, and the current low Treasury rate). The federal Office of Management and Budget has ruled that Congress must appropriate 10 million dollars to offset the revenues lost to the Treasury from accelerated repayment of principle, with an additional \$300,000 to meet the fiscal set-aside requirements of the Federal Credit Reform Act to secure the new loan refinancing. The REFI Legislation is an important element of the long-term plan to stabilize the West Coast groundfish industry and its dependent coastal communities. The Commission urges Congress to either enact a waiver of the offset requirement or appropriate the 10 million dollars so that the refinancing can go forward.

COAST GUARD ALTERNATIVE SAFETY COMPLIANCE PROGRAM

Congress tasked the U.S. Coast Guard with working with the commercial fishing industry

to develop an alternative safety compliance program (ASCP) for vessels in excess of twenty-five years of age. The Coast Guard initiated the development of a mandatory alternative safety compliance program in 2016 to mixed results, triggering significant opposition from a wide swath of the commercial industry. On July 20, 2016, the agency announced that it was discontinuing efforts to develop a mandatory program in favor of a voluntary Enhanced Oversight Program. In doing so, the Coast Guard appears to have reserved the right to resume future development of a mandatory ASCP.

The Commission is supporting the position that the Coast Guard's Enhanced Oversight Program should remain voluntary on a permanent basis. The Commission supports the introduction and enactment of legislation to retain the voluntary nature of the program.

MARINE SANCTUARIES AND MONUMENTS

There continues to be concern expressed within the Congress about the use of executive authority to establish marine national monuments or marine sanctuaries. Both President Bush and President Obama used Antiquities Act authority to establish large segments of the marine environment as National Monuments, with fishing activity either eliminated entirely or severely restricted. The Magnuson-Stevens Act (MSA) reauthorization bill, passed in the House in 2017, contained a provision that would require the MSA conservation and management regime be used in regulating fishing within National Marine Monuments established unilaterally by the President pursuant to the Antiquities Act.

The eight, U.S. Regional Fishery Management Councils sent a letter to President Obama on June 26, 2016 urging the continuing use of the MSA to regulate fishing activities in any future protected area designation. The Commission supports the resolution issued by the eight Regional Councils. We believe the established and transparent scientific MSA regional management process is the best approach to regulating commercial and recreational fishing activities within protected marine sanctuaries and monuments.

NORTH PACIFIC GROUND FISH SURVEYS

NMFS is reviewing budget options for the North Pacific region, which could result in a reduction in the groundfish surveys traditionally performed off the coast of Alaska. Five charter vessels have been traditionally used to conduct two annual surveys on the Bering Sea shelf and three Gulf surveys during odd numbered years. During even numbered years, those three surveys are shifted to the Aleutian Islands and the Bering Sea slope. NMFS is considering reducing those surveys to three or four vessels.

PACIFIC SALMON TREATY

The Pacific Salmon Commission has recommended to the governments of Canada and the United States a 10-year conservation and harvest sharing agreement under the Pacific Salmon Treaty. The proposed agreement covers the five, Pacific salmon species from the Pacific Northwest, Canada, and Alaska and will go into effect January 1, 2020 if approved by U.S. and Canada diplomatic officials. The new agreement calls for a 7.5 percent reduction in Alaska king salmon harvest, a 12.5 percent reduction for Canada, and 5 to 15 percent reductions for Washington and Oregon depending on species abundance.

SALTONSTALL-KENNEDY GRANTS ADVISORY COMMITTEE

The Senate has passed legislation authored by Senator Sullivan to establish an outside advisory committee to provide greater oversight over NMFS' funding award from the Saltonstall-Kennedy grants program.

MARINE DEBRIS

Congress has passed legislation (the Save Our Seas Act) to reauthorize NOAA's marine debris program. It emphasizes marine debris clean-up, promotes greater inter-agency coordination on debris prevention and removal, and more concerted international action on reducing marine debris.



72ND ANNUAL BUSINESS MEETING SUMMARY

Pacific States Marine Fisheries Commission

Skamania Lodge | Stevenson, Washington | September 25, 2019

Chair Representative Brian Blake called the meeting to order at 7:40 a.m. In attendance:

Paul Gronholdt, *Alaska Commissioner*

Doug Vincent-Lang, *Alaska Commissioner*

Sonke Mastrup, *California Coordinator*
representing *California Commissioner*
Charlton Bonham

Barbara Emley, *California Commissioner*

Senator Mike McGuire, *California Commissioner*

Paul Kline, *Idaho Advisor*, representing
Idaho Commissioner Ed Schriever

Ed Bowles, *Oregon Commissioner*

Jeff Feldner, *Oregon Commissioner*

Representative Caddy McKewon,
Oregon Commissioner

Representative Brian Blake,
Washington Commissioner

Michele Culver, *Washington Commissioner*

Chair Blake requested a roll call of each state:
All PSMFC Member States were present.

Chair Blake requested an introduction of new
commission members to PSMFC.

- Alaska – Introduced Doug Vincent-Lang as a Commissioner and Karla Bush as the Alaska Coordinator.
- California – Introduced Sen. Mike McGuire as a Commissioner.
- Idaho – Introduced Paul Kline representing ID Commissioner Ed Schriever.

- Oregon – No new members
- Washington – No new members

Chair Blake: Called for motion to approve the PSMFC Budget Fiscal Year 2020. The budget was approved unanimously.

Chair Blake: Called for an approval for the 2018 PSMFC Business Meeting Summary. The summary was approved unanimously.

Chair Blake: Called to move onto voting on PSMFC resolutions that were submitted by the states on Tuesday.

Washington Issue 1 – Electronic Monitoring

PSMFC shall continue to provide the third-party video review for EM coverage of the West Coast groundfish fisheries, which has proven to be professional, cost-effective, and supported by the industry, contingent upon the receipt of funds in advance from either NOAA or the industry instead of a cost-reimbursement basis.

Vote: Passes unanimously.

Oregon Issue 2 - Whale Entanglement

Modify 2016 Resolution: PSMFC commits to work with States, federal entities, Fisherman, and NGOs “to understand,” minimize, and reduce whale entanglements.

2019 Addition: PSMFC will explore federal funding opportunities for NMFS West Coast Region to fulfill NEPA requirements to assess environmental effects associated with issuance of ESA Section 10 incidental take permits in the states of CA, OR, and WA and compliance with MMPA.

Vote: Passes unanimously.

Alaska Issue 3 - Support for the “Young Fisherman’s Development Act” HR 1240 / S496

PSMFC supports taking actions to address opportunities for young people to enter the commercial fishing industry, for example, the Young Fisherman’s Development Act.

It is essential for the health of coastal communities to support opportunities for the professional growth of young fisherman. The Young Fisherman’s Development Act establishes a national grant program to support initiatives to educate, train, and mentor young and beginning fishermen.

Vote: Passes unanimously.

Issue 4 – Duplicate of Oregon Issue 2

No Vote

Idaho Issue 5 - Fish Hatchery Deferred Maintenance Funding

PSMFC supports new and increased funding of anadromous hatcheries in Commission States to support deferred maintenance needs critical to meet fish production goals.

Adopted language: PSMFC supports new and increased funding of federally funded anadromous hatcheries in Commission States to support deferred maintenance needs critical to meet fish production goals.

Vote: Passes unanimously.

Alaska Issue 6 - NMFS Budget Priorities

Pacific States strongly supports increased, dedicated funding for fishery independent stock assessment surveys, coastwide. To address declining support for fisheries assessments in the Pacific and North Pacific regions.

Vote: Passes unanimously.

California Issue 7 - HAB Monitoring - 2016 Resolution #1

Addition: West Coast needs to improve sampling for bio-toxins to ensure public safety. To facilitate sample collection, additional funding is needed.

Adopted language: PSMFC States needs to improve sampling for bio-toxins to ensure public safety. To facilitate sample collection, additional funding is needed.

Vote: Passes unanimously.

Alaska Issue 8 - Warming Ocean Conditions

Warming ocean conditions are of concern to resource managers coastwide. PSMFC supports ongoing and expanded collection of data to assess offshore marine conditions and their impact on the marine ecosystem with particular emphasis on management implications.

Vote: Passes unanimously.

Oregon Issue 9 - Section 120 Pinniped Removal

Pursue adequate funding to fully implement Pinniped removal associated with new Section 120 authorization.

Vote: Passes unanimously.

California Issue 10 - Energy Projects - 2013 Resolution #23

Addition: Coastal state regulators should be in coordination on all aspects of review and approval processes along with mitigation measures and potential compensation plans so there is consistency for the commercial and recreational fishing industry related to the development of offshore wind and energy projects.

Any offshore wind proposal must consider impacts to the commercial and recreational fishing industry in their planning, including, but not limited to: all environmental review, fishing grounds impact, staging, construction, installation, operations and maintenance, vessel traffic, trawl surveys, navigation safety, shoreside infrastructure, and decommissioning.

BOEM and all other federal agencies should work with the commercial and recreational fishing industries to help determine the impact on the fishery and commercial fishing operations.

Projects must include long-term funding for mitigation, monitoring, and compensation to fishermen and fishing communities for any short or long-term harm of their operations and loss of fishing grounds.

Amend current language: PSMFC expresses concern over the development of offshore wind energy and other alternative energy sources.

Adopted language: Regulators and stakeholders should work in coordination on all aspects of review and approval processes along with mitigation measures and potential compensation plans so there is consistency for the commercial and recreational fishing industry related to the development of offshore wind and energy projects.

BOEM and all other federal agencies should work with the commercial and recreational fishing industries to help and determine the impact on fishery and fishing operations and identify measures to mitigate those impacts.

Projects must include long-term funding for mitigation, monitoring, and compensation to fishermen and fishing communities for any short or long-term harm of their operations and loss of fishing grounds.

Vote: Passes unanimously.

Alaska Issue 11 - Marine Debris Update

Pacific States supports legislation and initiatives to fund comprehensive marine debris cleanup/removal program. Update the existing resolution on Marine Debris.

Adopted language: PSMFC supports legislation and initiatives to address comprehensive marine debris prevention, cleanup, and removal program. In order to protect marine resources, the funding should come from new resources, not existing federal fisheries research and management funds.

Vote: Passes unanimously.

Oregon Issue 12 - Oyster Pathogen Resistance Research Funding

Pursue adequate funding for research of pathogen resistance (OsHV-1) in West Coast shellfish stocks.

Vote: Passes unanimously.

California Issue 13 - Fishery Disasters - 2016 Resolution #4

Amendment: PSMFC to explore options for coastal state-run insurance program for fishery disasters.

Vote: California, yes. Alaska, Idaho, Oregon, and Washington, no. Issue does not pass.

California Issue 14 - Marine Mammal Act - Resolution #20

Addition: PSMFC requests expedited policy reconciliation by NMFS of ESA/MMPA inconsistencies in incidental take allowances of marine mammals.

Adopted language: PSMFC requests expedited policy reconciliation by NMFS of ESA/MMPA inconsistencies in incidental take allowances of humpback whales in the Dungeness crab fisheries.

Vote: Passes unanimously.

California Issue 15 - Electronic Monitoring of Fleet Dynamics

California requests PSMFC to explore development of a vessel dynamics model using current technologies to support whale entanglement mitigation and domoic acid monitoring.

Adopted language: PSMFC to continue to explore development and funding of a vessel electronic monitoring program to support whale entanglement and domoic acid actions.

Vote: Passes unanimously

Chair Blake: On behalf of all Commission members, I wanted to say thank you to the PSMFC Staff, and we appreciated all the work.

Meeting Adjourned.

ANNUAL AWARD RECIPIENT

The Pacific States Marine Fisheries Commission presents an annual award that honors an individual, agency, or organization from the host state for outstanding contributions in support of the Pacific Coast marine fisheries resources.

The Pacific States Marine Fisheries Commission is pleased to present the 2019 Award to:

JESSI DOERPINGHAUS

Jessi Doerpinghaus served as an outstanding Intergovernmental Ocean Policy Analyst with the Washington Department of Fish and Wildlife (WDFW) before departing in August 2019 for another state. During her five years with WDFW, she was an integral member of the Ocean Policy team and contributed significantly to the efforts of West Coast marine fisheries, WDFW, and the Pacific Fishery Management Council.

Jessi arrived at WDFW with baseline analytical skills. However, she quickly and meritoriously strengthened her competency through self-study. Collaborating with associates at National Marine Fisheries Service and with other West Coast partners, Jessi produced analyses to calculate the probabilities of Darkblotched rockfish and Pacific Ocean perch bycatch in the at-sea whiting fishery and salmon bycatch in West Coast whiting and bottom trawl groundfish fisheries. Jessi also managed and improved the sablefish daily trip limit model for limited entry and open access fisheries and proved indispensable when conducting the analysis of the sablefish primary fishery for the 2017 Five-Year Review. She was instrumental in the development of the Marine Spatial Plan for Washington's Pacific Coast, proficiently analyzing the effects of proposed, vital fish habitat conservation areas; rockfish conservation area revisions; and bycatch reduction areas as salmon mitigation measures. Jessi also worked with Pacific States Marine Fisheries Commission and additional participants to address Pacific Fisheries Information Network data issues; advanced the successful expansion of the e-tickets (E-Tix) system to coastal fisheries; and updated WDFW's fish ticket regulations for E-Tix compliance.

Jessi's numerous achievements were implemented through effective communication with fishery managers, scientists, data staff, and sponsors - transparent and clearly perceived. She welcomed opinions and encouraged involvement.

Her legacy of excellence continues as she provides contracted, analytical expertise for the Pacific Fishery Management Council.

Alaska Fisheries Information Network

The **Alaska Fisheries Information Network (AKFIN)** is one of five, regional, cooperative state/federal programs that provides a framework to consolidate and support the collection, analysis, and reporting of varied and essential information for management of U.S. fisheries. Funding for the program is provided by an annual grant from National Marine Fisheries Service (NMFS) to the Pacific States Marine Fisheries Commission (PSMFC) and benefits the AKFIN Support Center and an annual subcontract with the Alaska Department of Fish and Game (ADF&G) for related tasks.

AKFIN supports the data needs of fisheries analysts, managers, and economists by consolidating commercial fisheries data and dispensing those data upon request using custom programming services and online tools. Information is aggregated from the ADF&G Division of Commercial Fisheries, the Commercial Fisheries Entry Commission, NMFS Alaska Region, the Alaska Fisheries Science Center (AFSC), the North Pacific Fishery Management Council (NPFMC), and PSMFC. AKFIN reports catch data, harvest, and value from commercial fisheries in Alaska utilizing the best available data from source agencies. Once this data is loaded into the database, AKFIN staff append value added fields and reports information that identifies and quantifies impacts related to changes in fisheries management. These include species, area, gear, vessel, processor, community, fleet, and fishery participants by season.

STAFF

AKFIN is comprised of a small, cohesive team of five positioned at NPFMC in Anchorage, AK; at AFSC in Seattle, WA; and at PSMFC's headquarters in Portland, OR. Four employees are subsidized by the AKFIN grant, with the fifth one funded through other NMFS sponsored projects.

PRODUCTS SUPPORTED BY AKFIN

- The AKFIN website (akfin.psmfc.org) contains program information and current announcements, news, and metadata, as well as links to applications and related websites.
- AKFIN Answers is an online reporting tool that provides authorized stock assessors, social scientists, and economists with direct access to the program's analytical database and metadata resources. This application allows users to access prepared reports and to formulate ad hoc queries that can be saved and shared with other analysts. Participants performed over 10,000 Answers queries in 2019.
- The AKFIN APEX reports application (<https://reports.psmfc.org/akfin/>) was developed to provide data to public and authorized users. This technology provides easy navigation of various report categories and allows individuals to quickly filter and download data in common formats. Multiple confidential reports were generated in 2019 for the American Communities Survey, the U.S. Census Bureau, seabird bycatch, and prohibited species catch.
- AKFIN provides data services for the Fisheries Economic Data Reporting (EDR) program. This includes hosting the data, data management, and validation applications. For a comprehensive description of the EDR project, view the Fisheries Economics Data Reports Program summary in PSMFC's Annual Report.
- In collaboration with NPFMC staff, AKFIN developed a web-based application for Council staff, committee members, and stakeholders to track and prioritize NPFMC research projects. AKFIN continues to maintain and enhance application (<https://research.psmfc.org/>).
- With NPFMC staff support, AKFIN also created a web-based application to enable management of council agendas and public comments and designed a search and view feature for historical Council documents (<https://www.npfmc.org/>).

- AKFIN provides annual data support for the community snapshots section of the AFSC website (<https://www.afsc.noaa.gov/REFM/Socioeconomics/Projects/communities/snapshots.php>). The site provides visitors with the ability to view key indicators of fisheries dependence and other economic and demographic characteristics for Alaska communities.
- Annual data contributions to national reports include:
 - Fisheries of the U.S.
 - U.S. Coast Guard to support vessel safety inspections
 - Fisheries One-Stop Shop – A single data report summarizing data by species for an NMFS Science and Technology online reporting system.
 - National Bycatch Report (<https://www.fisheries.noaa.gov/resource/document/national-bycatch-report>)
 - Catch Share and Non-Catch Share Performance Indicators
- AKFIN provides comprehensive data management and data analysis services for production of the Groundfish SAFE Economic Status Report, AFSC’s Bering Sea/Aleutian Islands (BSAI) Crab Economic Status Report, and its Economic and Social Science Research Program. These annual reports compile economic statistics on the federally managed groundfish and crab fisheries off the Alaskan coast and serve as the primary venue for publication of data from the EDR programs for BSAI crab, Gulf of Alaska trawl groundfish, and Amendment 91 Chinook Salmon.

2019 Highlights:

- Completed the integration of environmental and fisheries data into the AKFIN data warehouse. Database sources for environmental variables such as sea surface temperature (SST), bottom depth, sea surface height, and chlorophyll have been identified; SST and bottom depth are now linked to specific landings and survey data tables.
- Provided data management support for NOAA enforcement through the development of web-based applications that deliver custom views of data for agent identification of potential violations.
- AKFIN continues to supply extensive data management assistance to NPFMC staff; a senior data analyst works in the NPMFC office.

Alaska Fisheries Science Center, Fisheries Monitoring and Analysis

The National Marine Fisheries Service (NMFS) **Alaska Fisheries Science Center (AFSC) Fisheries Monitoring and Analysis (FMA)** Division oversees the North Pacific Observer Program (Observer Program) that monitors groundfish fishing activities in the U.S. Exclusive Economic Zone off the coast of Alaska. Pacific States Marine Fisheries Commission (PSMFC) personnel work alongside Observer Program staff to support fisheries monitoring activities in the Alaskan commercial groundfish fisheries. The Observer Program is one of the largest in the U.S., placing over 400 observers onto fishing vessels annually in addition to installing electronic monitoring systems in a portion of the Alaska fishing fleet.

The information that fisheries observers collect is critical to the sustainable management of groundfish fisheries in the North Pacific. In addition to collecting data used for in-season quota monitoring and stock assessments, observer data is also integral to ecosystem investigations, compliance monitoring, documentation of incidental injury and mortality of marine mammals and birds, and a range of scientific activities.

In 2019, PSMFC assisted Observer Program training staff as they prepared 409 observers scheduled for deployment with training classes, briefing sessions, and safety-emphasized water exercises. Ten, three-week training classes for new observers were conducted with 23 annual briefings and 26 fish identification classes for returning observers. PSMFC and Observer Program in-season advising staff provided oversight to observers during their assignments, both at-sea on fishing vessels and while stationed at shoreside processing facilities. PSMFC staff are an active part of the debriefing team; 47% of the 715 debriefings of returning observers were conducted by PSMFC staff. Throughout 2019, PSMFC worked with the Observer Program to ensure efficient safety and sampling gear issue and check-in, maintenance, and procurement of replacement gear.

Central to the Observer Program's mission is the storage of large quantities of data (in the North Pacific ([NORPAC]) Database) with emphasis on the quality control (QA/QC) of incoming data and on making data available to users in near real-time.

Data collected by observers are transmitted to AFSC either daily (larger vessels) or at the end of each fishing trip. These data are available for either immediate use or post-final QA/QC upon the observer's return, depending on operational need. This functionality requires a suite of IT and database tools. PSMFC provides IT support by maintaining and updating existing database and web applications, increasing data transmission capabilities, and developing new database and web applications as required.

PSMFC analytic assistance encompassed development and evaluation of sampling methods, analysis of sampling results, analytic and statistical consulting, and outreach to observers. Participation also included contributing to the North Pacific Observer Program Annual Report (<https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program>); the analysis for the proposed adjustment to the partial coverage observer fee (<https://www.fisheries.noaa.gov/resource/document/environmental-assessment-regulatory-impact-review-proposed-regulatory-amendment>); and the Annual Deployment Plan for Observers and Electronic Monitoring in the Groundfish and Halibut Fisheries off Alaska (<https://www.fisheries.noaa.gov/resource/document/2020-annual-deployment-plan-observers-groundfish-and-halibut-fisheries-alaska>).

PSMFC staff collaborates with the FMA Division through NOAA Outreach activities, the presentation of research at conferences and the North Pacific Fisheries Management Council, and through short-term staff assignments at the AFSC field station in Dutch Harbor, AK (in rotation with NMFS staff). Program deployments to Dutch Harbor enabled the field station to remain in daily operation for observer support during the demanding fisheries season. In 2019, PSMFC staff spoke at the International Fisheries Observer and Monitoring Conference, the North Pacific Marine Science Organization (PICES) Annual Meeting, and the American Fisheries Society Annual Meeting.

In 2019, as many as eleven PSMFC positions augmented NMFS Observer Program training, debriefing, and operational staffing. In addition, the Program funds a statistician, a database application developer, one and a half-time data analysts, and a programmer, all of whom work primarily on Alaska fisheries and observer-related projects. These individuals are also available to supplement other activities, such as electronic monitoring, research, or administrative projects.

Aquatic Nuisance Species Program

Aquatic nuisance (ANS) or aquatic invasive species (AIS) are non-indigenous species that threaten the diversity or abundance of native species; the ecological stability of infested waters; or commercial, agricultural, aquacultural, or recreational activities dependent on a region's waters. These species may occur in inland, estuarine, and marine waters and can threaten ecological processes and natural resources. In addition to adversely affecting U.S. aquatic activities, invasive species can harm individuals and their health. One important criterion that Pacific States Marine Fisheries Commission (PSMFC) uses to designate a species as a nuisance is whether it can damage commercial and recreationally important fisheries.

2019 Highlights:

RAPID RESPONSE PLANNING

With funding from Bonneville Power Administration (BPA) and U.S. Fish and Wildlife Service (USFWS), PSMFC continued to lead the effort for zebra and quagga (dreissenid) mussel rapid response planning in the Columbia River Basin (CRB) (<https://www.westernais.org/rr-plans-exercises-groups>). Related to the rapid response plan is the eradication of a dreissenid mussel population if discovered in the CRB. Ensuring that best management practices are implemented throughout the sequence of control actions for a dreissenid, introduction will maximize cost-effectiveness of actions, minimize impacts to non-target organisms and the environment, and result in a coordinated, effective response that achieves the goal of controlling the introduction as possible. In 2014, PSMFC developed Best Management Practices and Effects Analysis, and Decision Matrix tools to assist the response to a mussel control action. In May 2019, PSMFC sponsored a Rapid Response Tabletop in Hells Canyon, ID. The exercise addressed containment of a theoretical dreissenid mussel infestation in Flathead Lake (<https://www.westernais.org/rr-plans-exercises-groups>).

In 2019, PSMFC continued to work with USFWS, leading an effort to produce background information for a manual to inform Section 7 consultation with USFWS and the National Marine Fisheries Service. This manual delineates a suite of the most feasible rapid response eradication actions for a potential dreissenid introduction in the CRB and associated states and assesses the potential for those actions to affect associated Endangered Species Act (ESA)-listed species and critical habitat (e.g., impacts of the biocide potash on the threatened bull trout and its critical habitat). This project was completed in fall 2019 (<https://www.westernais.org/esa-manual>). Additionally, the CRB rapid response plan was updated and its content placed on a stand-alone website, the Columbia River Basin Dreissenid Incident Response Toolkit (<http://www.crbdirt.com/>).

VULNERABILITY ASSESSMENT

PSMFC has also led the preparations of the region's hydro and fish facilities for a potential dreissenid mussel invasion. Vulnerability assessments itemize and inspect all hydropower facility structures and components in contact with raw water and determine the degree to which dreissenid mussels could impair the performance of the structures and their components. Understanding these factors in advance of an introduction can best prepare the facility to both prevent and deal with an introduction. A Vulnerability Assessment Team was formed after the regional Preventing an Invasion meeting in 2013. The Team completed *Strategies To Conduct Vulnerability Assessments for High Priority Columbia River Basin Hydropower and Dam Facilities* in April 2014 (updated June 2019) (<https://www.westernais.org/vulnerability-assessments>).

WATERCRAFT INSPECTION AND DECONTAMINATION TRAINING

It is generally agreed that the most effective means to prevent the spread of dreissenid mussels is by mandatory inspection stations at key highway points for all recreational watercraft.

(Note: In 2017, PSMFC added a regional watercraft inspection station viewer [<http://psmfc.maps.arcgis.com/apps/webappviewer/index.html?id=aa6a6527a26a44ddbff097b99241462e>].)

Resource managers have been broadening the capacity of state law enforcement and marine safety personnel to detect and intercept contaminated watercraft. The expansion of these programs has reinforced the need for the PSMFC Watercraft Inspection Training (WIT) program. WIT began in 2006, with USFWS and BPA funding, to train boating law enforcement personnel in the western U.S. on the background, biology, and impacts of zebra mussels; methods to identify high risk watercraft and conduct an inspection of all watercraft types; process for performing a vessel decontamination; and the legal authority to stop, detain, and require decontamination of watercraft suspected of harboring zebra mussels. To date, over 125 WIT training courses have occurred in nineteen Western States and Canada for 5,100 individuals representing in excess of 100 different state, federal, local, and tribal agencies and organizations.

Beginning in April 2007, training was divided into two levels. Level I (or basic) trainings are typically a one-day class and consist of an overview on the dreissenid threat, basic mussel biology, distribution, transport vectors, the *Don't Move a Mussel* video, direct watercraft inspection experience, and a written exam. Level II training is more intensive and is designed for professionals in all fields that expect to be involved in the inspection and decontamination of trailered watercraft, including those who intend to become trainers within their state or work group. Level II training is dispensed over two days (12 hours) at Lake Mead on the Nevada/Arizona border near Las Vegas. This course focuses on actual field inspection of various types of watercraft that may be contaminated with quagga mussels and on the decontamination of those watercraft requiring it. In recent years, Level II trainings have expanded and been held at Lake Lewis and Clark, SD; Lake Powell, UT; Lake Pleasant, AZ; Kalispell, MT; Salt Lake City, UT; Navajo Lake State Park, NM; and Castaic Lake, CA. In 2015, PSMFC added a Level III course that serves as a “trainer

training,” and in 2017, the WIT IV Advanced Decontamination course was added. Obtain WIT program information at www.westernais.org/ and select “Training.”

In 2019, PSMFC also released four, new decontamination videos:

- How to Perform Ballast Tank Decontamination (2018) (<https://www.youtube.com/watch?v=alTMHclwwZk>)
- How to Perform Inboard Engine Decontamination (2018) (<https://www.youtube.com/watch?v=rX8eNk2Hhvc>)
- How to Perform Inboard/Outboard Engine Decontamination (2018) (<https://www.youtube.com/watch?v=2opOHN65izQ>)
- How to Perform Plant Decontamination (2018) (<https://www.youtube.com/watch?v=pqtc1WDKKII>)

COORDINATION

The ANS program provides administrative support, staffing, and participation in numerous ANS interjurisdictional efforts, including the Columbia and Missouri River Basin 100th Meridian Initiative Teams, the Pacific Ballast Water Group, the Western Regional Panel on Aquatic Nuisance Species, the WGA Invasive Mussel Leadership Forum, the Department of Interior Safeguarding the West from Invasive Species initiative, the Quagga-Zebra Mussel Action Plan Committee, and the West Coast Green Crab Technical Group (<https://www.westernais.org/regional>).

PSMFC compiles, maintains, and shares information on the regulations each state implements to combat AIS, improving state efficiencies for reduced duplication of effort. The subpage of the website, <https://www.westernais.org/regulations>, includes a National Sea Grant Law Center searchable compilation of Western States AIS laws and regulations relevant to watercraft inspection programs and a list of AIS-related, federal legislation that is regularly updated.

In FY2016, the U.S. Army Corps of Engineers (USACE) Water Resources Developmental Act

(WRDA) funds (a.k.a. Water Resources Reform and Developmental Act [WRRDA] or Water Infrastructure for Improvements to the Nation [WIIN]) were appropriated to support expansion and establishment of watercraft inspection stations and monitoring in the CRB. PSMFC entered into a cooperative agreement with USACE Walla Walla in 2017, designated as the non-federal sponsor to represent and coordinate the efforts of the four, CRB states. In 2019, PSMFC administered over 5 million dollars in watercraft inspection station and monitoring funding.

OUTREACH AND EDUCATION

Recreational watercraft are the obvious means by which zebra-quagga mussels spread into other western watersheds. PSMFC and cooperating agencies have ANS information and education campaigns that target recreational anglers, boaters, marinas, enforcement personnel, and others on the zebra-quagga mussel threat. For the past seventeen years, PSMFC has attended sport and commercial fishing shows throughout the region (e.g., Boise, Portland, Sacramento, Seattle), exhibiting its booth and distributing information to those in contact with nuisance species. Since 2008, PSMFC has produced the electronic newsletter *AIS in the News* to inform AIS specialists. Past issues are available (<https://www.westernais.org/news>).

MONITORING

For the past fifteen years, PSMFC has partnered with Portland State University (PSU) in a zebra mussel monitoring program. Since 2010, with funding from BPA and PSMFC, PSU has collaborated with USACE to expand monitoring at Corps' projects in the CRB.

In 2010, PSMFC, in cooperation with the U.S. Geological Survey, hosted a monitoring database and map for the CRB states. By 2014, the monitoring data included Idaho, Montana, Oregon, Washington, Wyoming, Utah, and British Columbia. PSMFC created a new monitoring website in 2016 (<http://www.westernais.org/monitoring>).

PSMFC also manages the WRDA monitoring funding for the states of Idaho, Montana, Oregon, and Washington in cooperation with USACE Walla Walla. Monitoring work was conducted by Montana Fish Wildlife & Parks, Washington State University, Oregon Department of Fish and Wildlife, PSU, and Washington Department of Fish and Wildlife (WDFW). WRDA cost share monitoring funds resulted in an approximate doubling of dreissenid monitoring efforts by the states in 2018 as compared to 2016.

European Green Crab (EGC) - California, Oregon, Washington: For the past seventeen years, PSMFC has supported coastwide green crab monitoring. In 2019, monitoring was maintained in Washington (WDFW) and Oregon (Oregon State University). Data collected by PSMFC-supported researchers has yielded important insight into the abundance and population structure of the green crab in the three states. This information is of critical importance as resource managers and the commercial shellfish industry develop management options to address the threat posed by this species. PSMFC will continue to support a temporary monitoring staffer at WDFW with funds in 2020. Additionally, PSMFC and its GIS services staff are in the initial phases of developing an EGC database for the West Coast. An EGC database committee has also been formed.

WEBSITE

PSMFC renovated its invasive species website in 2014. It also contains the Pacific Ballast Water Group website, as well as information on WIT, Rapid Response, economic impacts of invasive species, particularly zebra and quagga mussels, and an archive of state and federal AIS regulations.

Columbia Basin PIT Tag Information System

The **Columbia Basin PIT Tag Information System (PTAGIS)** is a coordination and data management project of Pacific States Marine Fisheries Commission (PSMFC). PTAGIS develops and maintains software used to collect and contribute Passive Integrated Transponder (PIT) tag data; manages and provides those data for download and reporting via the PTAGIS website; and operates and maintains large scale PIT tag detection sites throughout the Columbia Basin. This project is an important prerequisite component of all PIT tag research conducted for the Bonneville Power Administration (BPA) Fish and Wildlife Program.

Tagging data is collected when fish are first marked with PIT tags or recaptured after having been previously PIT-tagged. Researchers from twenty-nine organizations released over 1.9 million PIT-tagged fish in 2019, bringing the cumulative total to over 49 million fish PIT-tagged since 1987.

Observation data is collected when PIT-tagged fish pass through automated antenna systems, called interrogation sites, installed in facilities or streams. The 293 interrogation sites contributing data to PTAGIS detected 854,000 unique fish this year. One fish can generate many observation records as it passes through multiple PIT tag antennas at an interrogation site; 15.2 million observations were reported to PTAGIS in 2019, totaling 247 million observations since 1987.

To give additional scope to the overall data management efforts in 2019, PTAGIS processed 781,000 data files with 150 million database rows updated or inserted. All data is available to anyone through the PTAGIS website; this year 583 users executed 444,000 queries resulting in 10.9 billion rows of returned data.

PTAGIS maintains and develops software for collecting tagging and observation data. Five new updates to the current PTAGIS field tagging software, P4, were released in 2019 that primarily focused on correcting defects and implementing ergonomic changes. A pre-release version of the next generation interrogation field software, M5, was completed this year along with associated server infrastructure to support data submission, processing, and reporting. In support of M5 and other PTAGIS services, the PTAGIS web application programming interface (API) was upgraded and published into a development environment. It will become the replacement for file transfer protocol and email data file transmissions when the new software is transitioned into production. Most of the complex processing of transceiver messages, called data parsing, was migrated from the field software itself to the database server so that frequent transceiver firmware updates can be accommodated far more efficiently without the need of redeploying updated applications to the field sites. Development of M5 and associated server upgrades (*Image 1*) is continuous, with plans to conduct rigorous performance evaluations in the lab and in-situ next year.

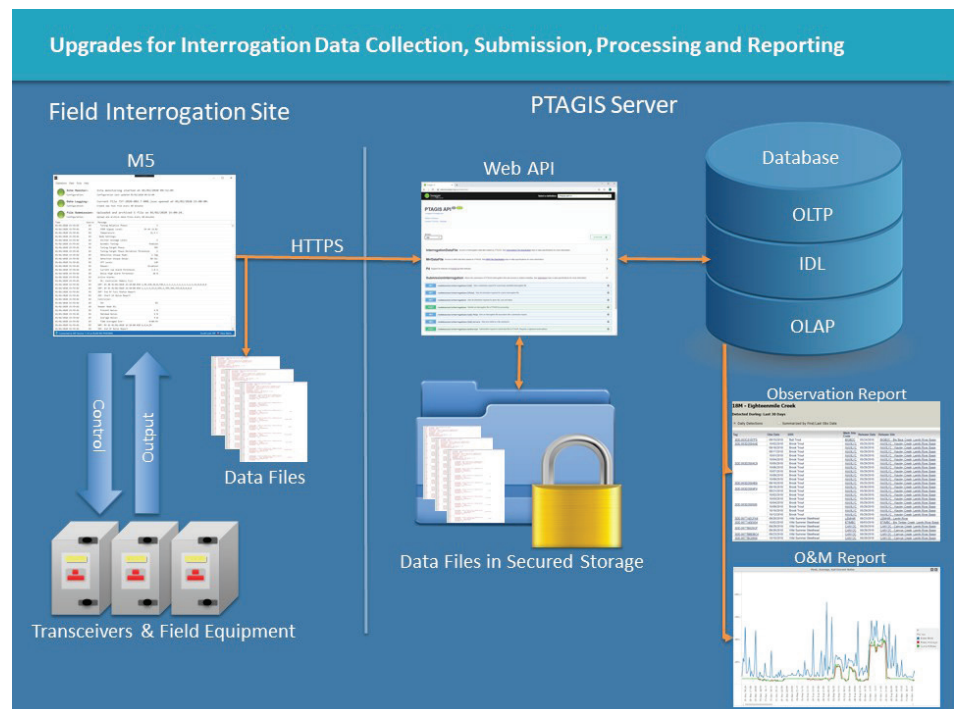


Image 1. Conceptual drawing of systems and processes developed to support M5. Image courtesy of John Tenney, PSMFC

Ongoing data management and coordination activities include maintenance of validation codes used in data entry and reporting systems in addition to metadata and contact information for interrogation sites; publication of newsletters and news items; and technical support to PTAGIS users. New online video tutorials were produced to guide users in configuring some of the more complex features of the P4 tagging software. PTAGIS staff worked with the PIT Tag Steering Committee to develop a charter and to recruit members for the Instream PIT Tag Detection System Subcommittee to improve coordination and support of numerous instream interrogation sites operated by various agencies throughout the Basin. In cooperation with BPA, a Portable PIT Tag Reader Loan program was implemented that allows programs to borrow this relatively expensive equipment for short-term needs.

PTAGIS Operations and Maintenance (O&M) staff, based out of Kennewick, WA, provides direct management and maintenance of thirty, large scale interrogation sites throughout the Columbia Basin, primarily at mainstem dam locations. This involves daily monitoring and regular onsite visits to maintain the detection equipment that provides the majority of 247 million observation events available in the database system. PTAGIS also supports the Separation by Code systems at nine locations, which enables researchers to selectively segregate individual PIT-tagged fish from other tagged and non-tagged fish. Separation by Code was used in 2019 to target forty-nine groups of fish (633,000 target tags) for sampling or to have them treated as the untagged population at transport dams. The detection and diversion efficiencies at these sites remained very high (> 97%) throughout the year.

O&M staff participate in the design, planning, and installation of new interrogation sites and detection technology. After many years of research and development, eleven new antennas were successfully installed into Spillway 1 at Lower Granite Dam at the end of 2019 (*Image 2*). These antennas and the associated infrastructure will form the first interrogation site to monitor PIT-tagged fish passage through a spillway.



Image 2. Lower Granite Dam Spillway interrogation site displaying the black covers that allow access to antenna components for maintenance. Photo courtesy of PSMFC Staff

The following actions performed by O&M personnel were instrumental in the accomplishments of this multi-agency project:

- Designed electrical infrastructure for PIT tag rooms in two, stacked, Conex boxes.
- Designed hard-wired infrastructure control systems.
- Designed transceiver remote and automated control systems.
- Created and presented CAD drawings to the U.S. Army Corps of Engineers.
- Designed, prototyped, and tested a split antenna to accommodate an expansion joint within the spillway.
- Designed conduit layout to ensure shortest possible route for best antenna performance (*Image 3*).
- In partnership with the National Oceanic and Atmospheric Administration, tested all equipment post-installation.

O&M staff also provided designs for the relocation of the PIT tag room and for a new configuration of the interrogation site monitoring the Cascades Island fish ladder at Bonneville

Dam. The current PIT tag room can no longer be used due to sinking ground, and the U.S. Army Corps of Engineers has agreed to relocate it to an office near the upstream counting window. In conjunction with the PIT tag room relocation, the old weir orifice antennas will be retired, and four new antennas will be installed to provide 100% pass-through detection.

In addition to designing new sites, continual maintenance is performed on existing sites 365 days a year. A real-time control system was implemented to alert O&M employees when equipment parameters are outside of limits. All transceivers are repaired in-house and returned to service rather than replaced. A custom, high-performance serial-to-Ethernet converter was developed by staff to replace costly equipment that connects transceivers to data collection computers in the field.

In 2019, PTAGIS continued to provide high quality data collection, validation, management, and reporting of PIT tag data for the Columbia River Basin, while upgrading the system to improve support and efficiency. Hundreds of users from dozens of fisheries organizations utilized PTAGIS on a daily basis to collect, contribute, and retrieve PIT tag data for salmonid and other fish species of interest in the region.

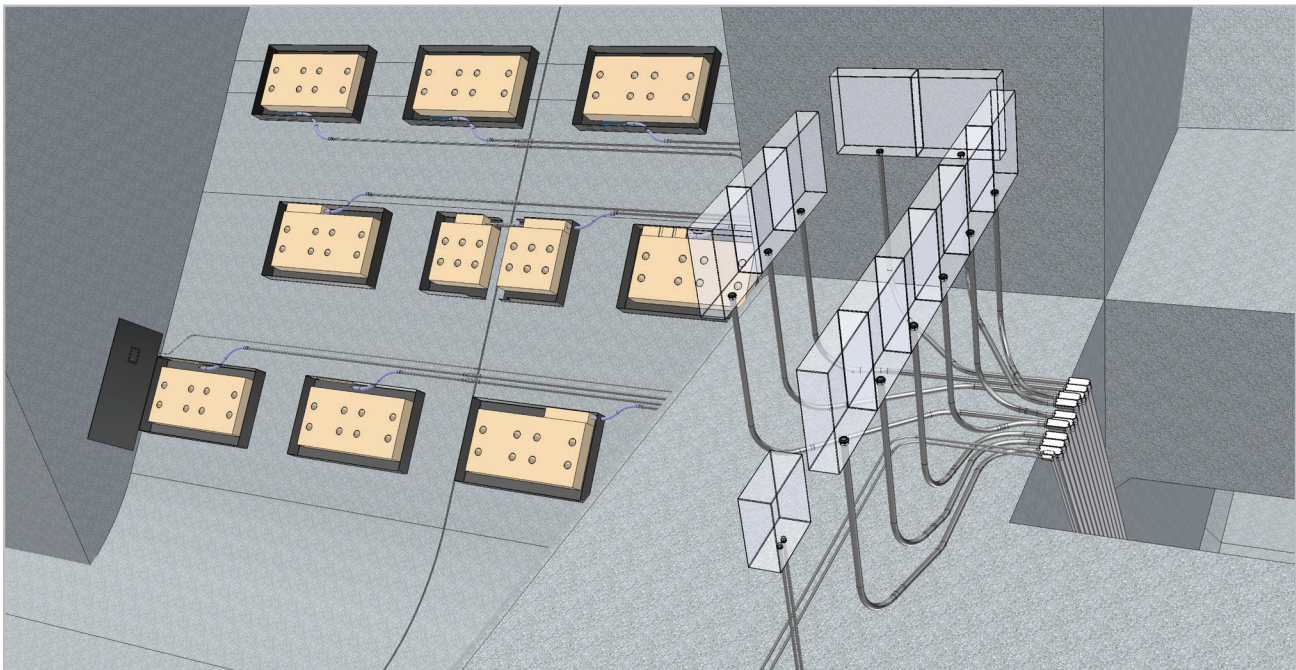


Image 3. Drawing depicting the routing of exciter cables from the antennas on the spillway face to the transceiver enclosures in the PIT tag electrical room. Image courtesy of Alan Brower, PSMFC

Cooperative Ageing Project

The Cooperative Ageing Project (Ageing Lab) is a collaborative effort between the National Oceanic and Atmospheric Administration (NOAA) and Pacific States Marine Fisheries Commission. It was established to production-age marine groundfish structures. The lab is located in Newport, OR at the Northwest Fisheries Science Center (NWFSC) Newport Research Station. Age structures collected from federal surveys, observer programs, and commercial catch are aged by this lab to directly support West Coast stock assessments. Age specific estimates of biomass, mortality, and population trends are required to rigorously evaluate the status of a fish stock. While this lab is primarily a production age reading lab, there are opportunities on an annual basis to conduct age-related research and to assist in National Marine Fisheries Service's at-sea surveys.

- Four age reading personnel attended the Committee of Age Reading Experts conference in Seattle, WA. All personnel attended the subsequent Fourier Transform Near-Infrared Spectroscopy workshop hosted by the Alaska Fisheries Science Center.
- The Ageing Lab concluded 2019 with five staff (one supervisor and four, full-time age reading specialists).

In 2019, Ageing Lab personnel:

- Production-aged 20,318 and double read 7,508 age structures to support five, U.S. West Coast groundfish stock assessments.
- Released 30,257 ages from four species.
- Added 15,881 specimen records from 58 different species collected from NWFSC programs. This archive now has 585,342 records of age structures collected from 87 species between 1983 and 2019. The sources of these structures are from the following: At-Sea Hake Observer Program, West Coast Groundfish Bottom Trawl Survey, Pot Survey, Acoustic Survey, and Hook and Line Survey.
- Received 17,079 age structures from U.S. West Coast state agencies.
- Collected 8,731 new otolith weights from different species. The Ageing Lab has collected weight data on 151,015 otoliths. NWFSC scientists are developing algorithms that use otolith weight as a proxy for age.

Electronic Monitoring and Reporting

CAMERAS

WEST COAST

Pacific States Marine Fisheries Commission (PSMFC) launched the **Electronic Monitoring (EM)** program in 2012 in anticipation of the Pacific Fishery Management Council's (PFMC) plan to use EM as a compliance monitoring tool in the newly implemented Pacific Coast Groundfish Trawl Rationalization Program. The original objective of the EM program was to prove the efficacy of EM as a data source to document individual accountability of catch and bycatch in this Trawl Rationalization Program.

After PSMFC successfully proved the effectiveness of EM, PFMC approved four, Exempted Fishing Permit (EFP) applications that were implemented in the 2015-2019 fishing years, permitting EM to be used on vessels in the whiting, fixed gear, non-whiting mid-water trawl, and bottom trawl fleets. These EFPs allow participants to fish using EM as a substitute for an onboard, human compliance monitor, although scientific observer coverage is still required on fixed gear and bottom trawl fishing trips for scientific sampling. EM data reviewers at PSMFC view 100% of fishing activity to report Individual Fishing Quota (IFQ) discards, and results are compared to fisher-reported logbooks. If the comparison results in a 10% or higher difference between EM and the logbook, or one source reports discards and the other source does not, the higher of the two numbers will be reported to the Vessel Account System (VAS) and ultimately debited from the vessel's quota.

The results from the 2015 through 2018 whiting and fixed gear EM EFPs led to a regulation recommendation by the Council, with implementation scheduled for 2021. The Council extended the bottom trawl and non-whiting midwater trawl EM EFPs through 2020 to collect more information to determine whether regulations should be established for these fisheries in the future.

NORTH PACIFIC

Fisheries Monitoring: The North Pacific Fishery Management Council (NPFMC) and the National Marine Fisheries Service (NMFS) have integrated EM into the North Pacific Observer Program (Observer Program). While EM systems in other regions are generally used to monitor vessel compliance with fisheries regulations, the goal of the North Pacific fixed gear program is to collect data for the estimation of catch and bycatch and subsequent in-season management of fisheries. After a multiyear, pre-implementation period, Federal regulations for the use of EM on longline vessels were enacted by January 2018, while EM pot gear monitoring became part of the regulated program in 2019. Under the regulated EM programs, EM-collected data supplements the data collected by observers to manage fisheries, primarily for the estimation of at-sea discards. PSMFC is working with NMFS to actively develop methods for the deployment of EM systems and for collection of fishery information using EM.

As a member of the North Pacific EM program, PSMFC advises, reviews video, subcontracts for installation and field support of EM systems on participating vessels, analyzes the data, produces reports detailing monitoring results (i.e. system performance), and develops recommendations for program improvement. PSMFC staff work closely with our NMFS partners to develop and document data collection protocols, data transfer methods, and database structures. PSMFC also provides support for this program by developing analytical methods and documentation for the estimation of catch and discard used with these new data types.

Each year, the Observer Program's Annual Deployment Plan (ADP) describes deployment strata and rates for the upcoming monitoring year while the North Pacific Observer Program Annual Report evaluates the previous year's deployments relative to the ADP. Both reports include the distribution of EM systems into the groundfish fisheries in addition to the placement of observers. PSMFC provides a summary of the EM video review process in Appendix D of the North Pacific Observer Program Annual Report (<https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program>), and Chapter 3 of the Report

evaluates the effectiveness of monitoring relative to the sample design specified in the ADP (<https://www.fisheries.noaa.gov/resource/document/2020-annual-deployment-plan-observers-groundfish-and-halibut-fisheries-alaska>).

With the integration of EM into the regulated program, the NPFMC Fixed Gear Electronic Monitoring Workgroup (EMWG) was reconfigured with a focus to incorporate EM into trawl fisheries and was renamed the Trawl Electronic Monitoring Committee. The Committee consists of agency staff, commercial fishing industry representatives, EM service providers, and PSMFC staff (<https://www.npfmc.org/observer-program/>).

A two-year EFP has been approved for 2020-2021 to evaluate the efficacy of EM and shoreside observers for pollock catcher vessels (CVs) in the Eastern Bering Sea and in the Gulf of Alaska. EM systems were installed on board volunteer pollock CVs (and used alongside human observers when required) in 2018 and 2019 to evaluate fishing behavior and test the systems on board pollock CVs prior to issuing an EFP. The EFP will exempt participating vessels from observer requirements and regulations that prevent maximized retention of catch. This project will use EM systems on board vessels to record at-sea fishing events for compliance with fishery management objectives for maximized retention, to enable electronic reporting of catch and discard data, and to utilize coastal observers working in land-based, fish processing plants to monitor salmon bycatch and to collect biological data. Project partners for this EFP include: NMFS Alaska Region, NMFS Alaska Fisheries Science Center, EFP permit holders (United Catcher Boats, Alaska Groundfish Data Bank, Inc., Aleutians East Borough), EM providers (Saltwater Inc., Archipelago Marine Research Ltd.), video reviewers (Saltwater Inc., PSMFC), and an observer provider (Saltwater Inc.).

Research and Development Program:

The PSMFC EM Innovation Program develops and integrates computer vision algorithms into cost-effective EM capable of capturing data on species identification, species enumeration, and deriving length and weight measurements. These data elements are required to estimate both the total discarded catch and the length distribution of the catch, necessary components of

fisheries management and stock assessments. This project is a collaborative effort between PSMFC, the Observer Program, the University of Washington Electronic and Computer Engineering Department, and FishNext Research.

In 2019, the Program continued to improve hardware design and real time processing of image and sensor data across three, specific applications: camera chute systems for on-board sorting of halibut and species identifications in the trawl fisheries; automated analysis systems for video data to count, identify, and measure fish coming on board the vessel (over the rail) during multispecies hook-and-line fisheries; and automated monitoring systems to validate compliance of shoreside processing plants receiving trawl deliveries of catch with salmon bycatch reporting requirements. Research activities occurred under all three specified objectives. This technology will be transferable, and the machine learning algorithms can be retrained for new image data streams. Hence, these EM advances have the potential to benefit other EM programs. For example, in 2019 the project team conducted experiments using imagery data to identify bird bycatch as well as to monitor compliance and crew activity on deck.

Additional details about the EM Innovation Project can be found in the North Pacific Observer Program Annual Report Appendix E (<https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program>).

EM Research Publications (2019)

- Huang, T. W., Hwang, J. N., Romain, S. & Wallace, F. (2019). Fish Tracking and Segmentation from Stereo Videos on the Wild Sea Surface for Electronic Monitoring of Rail Fishing. In *Circuits and Systems for Video Technology*, IEEE Transactions on, pp. 3146-3158. IEEE, 2019.
- Huang, T. W., Hwang, J. N., Romain, S. & Wallace, F. Recognizing Fish Species Captured Live on Wild Sea Surface in Videos by Deep Metric Learning with A Temporal Constraint, IEEE International Conference on Image Processing, Taipei, Taiwan, September 22-25, 2019
- Fitzgerald, S., Wallace, F., Romain, S., Magrane, K., Kazmerzak, R., Moore, B., & Kim, M. A. (2019). Improving Seabird Species Identification in Electronic Monitoring Applications Using Machine Learning Systems. Working Group Information Paper for the 9th Meeting of the Seabird Bycatch Working Group of ACAP: Florianópolis, Brazil, May 2019. SBWG9 Inf 21. (<https://www.acap.aq/en/working-groups/seabird-bycatch-working-group/seabird-bycatch-wg-meeting-9/sbwg9-information-papers/3383-sbwg9-inf-21-improving-seabird-species-identification-in-electronic-monitoring-applications-using-machine-learning/file>)

Wang, G., Hwang, J. N., Rose, C., Wallace, F. Uncertainty Based Active Learning via Sparse Modeling for Image Classification, IEEE Trans. on Image Processing, 28(1):316-329, January 2019.

Wang, G., Hwang, J. N., Wallace, F., Rose, C. Multi-Scale Fish Segmentation Refinement and Missing Shape Recovery, IEEE Access, 7: 52836 - 52845, April 2019.

WEST COAST LOGBOOKS

A system for remote data entry of paper logbooks is used by PSMFC groundfish port samplers to electronically capture groundfish trawl logbooks for California vessels. This system is also used by the EM group at PSMFC Headquarters in Portland, OR to electronically collect paper logbook data from vessels that used EM in California, Oregon, and Washington, with data entry usually occurring within two business days of arrival. As a precautionary measure, this is a linked database to ensure there is no logbook duplication. As described in the previous “**Cameras**” section, the data from EM logbooks are compared to the data collected by EM video reviewers, and the higher-reported IFQ weight is then debited from the vessel’s quota.

WEST COAST ELECTRONIC FISH TICKETS (E-TIX)

Fish tickets are used to document landings by commercial vessels at West Coast ports. Historically, the three states collected these tickets from fish buyers by using a paper reporting system. Starting in 2008, PSMFC developed and currently maintains an electronic fish ticket system (E-Tix) to replace paper tickets for all twenty-seven West Coast fish ticket types. Adoption of E-Tix varies across the states with Oregon historically the most committed to adopting E-Tix for paper landing receipts. Beginning July 1, 2018, California accepted E-Tix for all ticket types in lieu of paper landing receipts. Regulations for mandatory reporting for all landings are in place and took effect on July 1, 2019.

Fisheries Economics Data Program (EFIN)

Fisheries Economics Data Reports (EDRs) Program

The **Fisheries Economics Data Program (EFIN)** is a cooperative data collection effort that addresses the needs of fisheries managers and industry for economic data and information for the West Coast and Alaska. This project is being conducted by Pacific States Marine Fisheries Commission (PSMFC) as part of a cooperative agreement with National Marine Fisheries Service (NMFS) and with the help of the Pacific and North Pacific Fishery Management Councils (PFMC and NPFMC). The goal is to provide reliable and timely data to assist with monitoring and measuring the economic performance of the harvesting and processing components of West Coast and Alaska fisheries.

2019 Highlights:

- **2018 Fuel Report:** An annual summary of collected fuel price data from the prior year was prepared and distributed to survey participants and other interested parties.
- **Fuel Price Collection:** Program staff continued collection and maintenance of the West Coast and Alaska monthly fuel price survey through monthly phone and email contact.
- **Tri-State Crab Website Maintenance:** The program also archived the prior year's website and created a new website for the 2019-2020 season that was updated with reports from California, Oregon, and Washington.

ALASKA CRAB RATIONALIZATION ECONOMIC DATA REPORT (EDR) COLLECTION PROGRAM 2019

PSMFC functions as the Independent Third Party Data Collection Agent for the Bering Sea/Aleutian Islands (BSAI) Crab Rationalization Program. The purpose of the economic data collection is to aid NPFMC and NMFS in assessing the success of this program and to provide data that are used in developing

amendments necessary to mitigate unintended consequences of management decisions. Specifically, the data will be used to examine two aspects of the program: the distribution of benefits between harvesters and processors arising under the harvest share/processor share allocations and arbitration system; and the distribution of landings of different harvest share types.

NPFMC is interested in ensuring that it will be able to adequately assess the impact of the program on affected parties, including harvesters, processors, and communities. Existing data collection programs have not provided the information required to understand the economic performance of crab fishermen, to determine how this performance has changed after rationalization, or to specify the aspects of these changes that are attributable to crab rationalization. This data collection program will substantially reduce the types of analytical difficulties that were encountered in the past in attempting to evaluate the effects of the halibut/sablefish Individual Fishing Quota program and the American Fisheries Act (AFA).

At the beginning of this program in 2005, historical EDRs were collected for the years 1998, 2001, and 2004. In each subsequent year, EFIN staff collected data in an annual report. Historical EDRs captured pre-program implementation data for comparison to the economics of harvesting and processing before and after program implementation. The annual reports capture economic data at the conclusion of each calendar year's crab fisheries. The 2018 EDR was collected in June and July 2019. Participation in the data collection program is mandatory for all participants in the BSAI crab fisheries. All owners and leaseholders of a vessel or processor that harvested, processed, or had crab harvested and processed for them in any of the BSAI crab fisheries during 2018 were required to submit an annual report.

EDR online login and passwords were mailed to crab processing plants and vessels, and submitted EDRs were collected, tracked, and reported to the Restricted Access Management Program (RAM) for permit and quota issuance. They were also reviewed for completeness. The EDR data were entered, archived, and submitted to NMFS for analysis.

Alaska Fisheries Information Network (AKFIN) built a database to house data, to standardize variables, and to conduct metric analysis to describe the data. Reports and forms are being developed to allow permitted researchers access to the data.

AMENDMENT 80 AND GULF OF ALASKA (GOA) TRAWL ECONOMIC DATA REPORTS

Amendment 80 was adopted by the NPFMC in June 2006. The final rule implementing Amendment 80 was published in the Federal Register on September 14, 2007. This action allocates several BSAI non-pollock trawl groundfish species among trawl fishery sectors and facilitates the formation of harvesting cooperatives in the non-American Fisheries Act (non-AFA) trawl catcher/processor sector. As of January 1, 2016, a new reporting requirement under 50 CFR 679.110 went into effect that changed the EDR for the Amendment 80 Catcher Processor participants, bringing those in GOA's groundfish trawl fisheries into the EDR program.

In December 2014, NMFS issued a final rule to implement the GOA Trawl EDR Program to assess the economic effects of current (and future) fishery management measures for the GOA trawl fisheries. This data collection program will provide the NPFMC and NMFS with baseline economic information on harvesters, crew, processors, and communities active in the GOA trawl fisheries, which will be used to evaluate the impacts of anticipated, future GOA trawl groundfish management measures on stakeholders.

The Council adopted Amendment 80 to meet the following broad goals:

- Improvement of retention and utilization of fishery resources by the non-AFA trawl catcher/processor fleet by extending the groundfish retention standard to non-AFA trawl catcher/processor vessels of all lengths;
- Division of fishery resources among BSAI trawl harvesters in consideration of historical and present harvest patterns and future harvest needs;
- Authorization of the allocation of groundfish species to harvesting cooperatives, and

establishment of a limited access privilege program for the non-AFA trawl catcher/processors to reduce potential Groundfish Retention Standard compliance costs, to encourage fishing practices with lower discard rates, and to improve the opportunity for increasing the value of harvested species;

- Limitation of the ability of non-AFA trawl catcher/processors to expand their harvesting capacity into other fisheries not managed under a limited access program.

The groundfish species in the BSAI areas directly affected by Amendment 80 include: Atka mackerel, Aleutian Islands Pacific Ocean perch, Flathead sole, Pacific cod, Rock sole, and Yellowfin sole.

In addition, Amendment 80 would modify the management of halibut and crab prohibited species catch limits.

PSMFC has been designated by NMFS as the Data Collection Agent for the Amendment 80 program. The first annual Amendment 80 reports were collected in June 2010 for the 2009 calendar year. The first annual GOA Trawl EDR reports were collected in June 2017 for the 2016 calendar year.

In 2019, the 2018 annual EDRs were mailed to catcher/processors, catcher vessels, and processors; these were collected, tracked, and reported to RAM for permit and quota issuance. After a review for completeness, the data were entered, archived, and submitted to NMFS for further analysis.

AKFIN built a database to house data, to standardize variables, and to conduct metric analysis to describe the data. Reports and forms are being developed to allow permitted researchers to access the data.

AMENDMENT 91 CHINOOK EDR FOR THE AFA POLLOCK FISHERY ECONOMIC DATA REPORTS

Amendment 91 to the BSAI Fishery Management Plan established a hard cap of 60,000 Chinook salmon caught per year for the Bering Sea pollock fishery beginning in 2011, with the additional requirement that annual Chinook bycatch must not exceed 47,591 more than twice in any 7-year period. The bycatch quota

is assigned to sectors of the fleet proportional to both the pollock allocation and historic bycatch. The bycatch quota can be allocated by cooperatives to individual vessels and is transferable across the fleet to improve economic efficiency.

Following the recommendation of Amendment 91 in April 2009, NPFMC asked Alaska Fisheries Science Center to develop “a data collection program for the pollock fleet that would provide the information necessary to evaluate the salmon bycatch program to ensure that it is meeting the Council’s intent.” The goal of this project is to collect information on the amount of money vessel operators are paying to acquire salmon bycatch quota and assess the way in which fishing changes as a result of the new restrictions on salmon bycatch. As there is a potential for large financial impacts to some vessel operators who will have to purchase salmon bycatch quota to harvest their allocation of pollock, and who may have to incur additional travel expenses to fish in areas where salmon are less concentrated, an additional goal of this project is to estimate how costs of salmon bycatch avoidance may increase in the pollock fishery. In addition, this data collection effort is aimed at understanding the steps that vessel captains undertake to avoid salmon bycatch during the fishing seasons.

PSMFC has been designated by NMFS to be the data collection agent for the Amendment 91 EDR program. The first annual Amendment 91 EDRs were collected in June 2013 for the 2012 calendar year.

In 2019, the 2018 data were collected, tracked, and reviewed for completeness. This data collection has a June 1 deadline and is repeated every year for the prior year’s fishery.

A database was built on AKFIN servers to house collected data, to standardize variables, and to conduct metric analysis to describe the data. Reports and forms are being built to allow researchers access to the data.

Fisheries Support Projects in California, Idaho, and Washington

CALIFORNIA PROJECTS

Ongoing assistance was provided to the **California Ocean Salmon Program** by employing fisheries technicians at various coastal ports to sample commercial salmon fisheries, to collect biological data and coded wire tag information, and to perform lab work. Data collected are incorporated into the management and season setting for salmon fisheries coastwide.

Pacific States Marine Fisheries Commission (PSMFC) worked with the California Department of Fish and Wildlife (CDFW) to determine the **Age Structure of Central Valley Chinook Salmon Populations** by conducting scale analysis, assisting in the field collection of scales in Chinook escapement surveys, and using the aging data in combination with coded wire tag recovery data to reconstruct the size of each returning brood year.

The **California Passage Assessment Database** locates and documents anadromous fish passage sites in all California watersheds. This multi-agency cooperative effort has led to better information on known and suspected fish passage issues and ultimately, the correction of these issues through prioritized restoration projects and funding.

The **California Cooperative Fish and Aquatic Habitat Data Program (CalFish)** website (www.calfish.org), a multi-agency cooperative fisheries information site, is designed to gather, maintain, and disseminate fish and aquatic habitat data and data standards. It provides access to a growing number of fish and aquatic habitat datasets through both geographical and tabular queries. Many of the following projects have data and information available through the CalFish site.

With funding provided by the California Department of Water Resources (CDWR), PSMFC staff supported the **Feather River Monitoring** project that included salmon and steelhead data collection and analysis for the

Feather River and Central Valley and assisted with sturgeon monitoring.

PSMFC fisheries technicians on the **Upper Sacramento Technical Assistance** projects continued to assist CDFW and the Bureau of Reclamation with managing video monitoring stations and fish traps, conducting salmon carcass surveys, performing habitat assessment, and collecting biological data.

PSMFC supplied technical assistance and field staff for the **Coastal Restoration Monitoring and Evaluation** project. Staff monitors pending and completed coastal watershed restoration projects in California, collects habitat information, and compiles data. This information is used by managers to assess the success of restoration activities.

PSMFC continued to support fisheries technicians in Mendocino County for a project designed to develop, test, and implement the sampling scheme and field surveys described in the **CA Coastal Salmonid Monitoring Plan**.

In the **San Joaquin River Basin**, PSMFC collected and managed data for water temperature, Chinook salmon carcass surveys, spawning activity of Merced River Hatchery fall-run Chinook salmon, and coded wire tags.

PSMFC successfully completed another year of the **Central Valley Constant Fractional Marking Program**. The Program is responsible for annually-coded wire tagging/adipose fin clipping 25% of the fall Chinook salmon production and fin clipping 100% of the steelhead production in the Central Valley hatcheries.

At the **Coleman National Fish Hatchery**, PSMFC provided seasonal personnel and services to assist the U.S. Fish and Wildlife Service (USFWS) mark and coded wire tag juvenile winter-run and late-fall Chinook salmon and steelhead.

PSMFC assisted with **Constant Fractional Marking at Iron Gate and Trinity River Hatcheries** by providing staff and equipment to clip and tag 25% of all Chinook salmon released from the facilities. This resulted in critical harvest information on coastal Chinook life cycle monitoring programs.

PSMFC conducted **Yuba River Monitoring** in cooperation with the Yuba County Water Agency, CDFW, and other partners to implement field studies, monitoring, and other projects on the Lower Yuba River, including rotary screw traps, escapement surveys, and the operation of the VAKI Riverwatcher installation. PSMFC also worked with the U.S. Army Corps of Engineers to survey, monitor, and map Yuba River redds to evaluate the success of their gravel augmentation program.

PSMFC staff assisted the **USFWS Comprehensive Assessment and Monitoring Program** with statistical analysis and database development to support California Central Valley monitoring efforts.

PSMFC provided staff assistance to conduct monitoring studies for **South Fork Eel River Coho**.

PSMFC supported the completion of the **Big Basin/San Mateo Regional Area Spawning Ground Surveys** that estimated salmonid escapement in coastal streams.

PSMFC facilitated the installation and implementation of **DIDSON Monitoring Stations** on Southern California streams and assisted with field implementation of the **South Coast Steelhead Monitoring Plan**.

PSMFC aided USFWS and CDFW by collecting data, monitoring, and reporting on **Salmon Redd Dewatering** on the upper mainstem of the Sacramento River.

PSMFC supplied personnel for the **Lower Eel and Van Duzen Rivers Salmonid Spatial Structure Project for Coho Salmon**.

PSMFC personnel assessed the abundance and production of juvenile Chinook salmon and Steelhead on the American and Stanislaus Rivers for the USFWS **Rotary Screw Trap Assistance and Monitoring Program**.

PSMFC provided staff and technical expertise for **Salmonid Habitat Enhancement and Monitoring** that benefited Trout Unlimited, The Nature Conservancy, and CDFW in the Pudding and Caspar Creeks.

PSMFC is collaborating with USFWS, National Marine Fisheries Service (NMFS), and Basin

partners to develop an **Integrated Fisheries Restoration and Monitoring Plan for the Klamath Basin**. The final phase of this project has begun, and work is underway on the identification of habitat restoration actions necessary for the recovery of eight, focal species in the Klamath, including salmon, steelhead, sturgeon, trout, and lamprey.

PSMFC is facilitating local, watershed council personnel participation in the Klamath planning process through the administration of a grant program funded by the National Fish and Wildlife Foundation.

PSMFC is working with USFWS to develop and populate a **California Central Valley Adult Salmon Escapement Database** to store adult salmon data collected for watersheds that includes the American River, Clear Creek, the Sacramento River mainstem, and the Stanislaus River. In addition to several analytical tools that help automate data analyses and reporting, PSMFC also provides software tools to ensure that stored data are complete and accurate.

PSMFC personnel assisted NMFS and CDFW in estimating smoltification rates in the Ventura River and two main rearing tributaries by establishing a PIT tag array network for the **Ventura River PIT Tagging Project**.

PSMFC will assist the **Battle Creek Fish and Ladder Monitoring Program** once several restoration projects have been completed.

IDAHO PROJECTS

PSMFC arranged for personnel to assist the Idaho Department of Fish and Game (IDFG) Nampa Research Lab with fisheries research, field activities, and data management needs.

PSMFC personnel successfully met all objectives of the **Idaho Marking and Tagging** plan developed by the IDFG Research Division. Over 18 million salmon and steelhead were marked and/or tagged.

PSMFC contributed technical support for the **Lower Snake River Fish and Wildlife Compensation Plan** to manage hatchery data used for monitoring and evaluating hatchery efforts and to help achieve program goals.

PSMFC personnel assisted IDFG with the implementation of fisheries management and research activities in the IDFG Natural Production Section, Fisheries Management Section, and Eagle Fish Genetics Lab.

PSMFC provided personnel to assist IDFG with collecting **DNA Genetic Samples in the Lower Columbia**.

WASHINGTON PROJECTS

PSMFC provided technical and administrative support for the following projects:

- **Lower Columbia River Coded Wire Tag Recovery and Population Monitoring and Analysis**
- **Evaluate Spawning of Fall Chinook and Chum Salmon Just Below the Four Lowermost Mainstem Dams**
- Washington Department of Fish and Wildlife's **Chum Salmon Restoration in the Tributaries Below Bonneville Dam**
- Collection of **Lower Columbia River Genetic Stock Identification** samples for the Columbia River Inter-Tribal Fish Commission.
- USFWS management of hatchery data used for monitoring and evaluating hatchery efforts and meeting program goals.

ADDITIONAL PSMFC PROJECTS

PSMFC contributed technical, expert assistance to develop monitoring and evaluation strategies to support implementation of the **NMFS Salmon Recovery Plan**.

PSMFC supplied data stewardship and technical services for the **NMFS Habitat Restoration Project Tracking Database** and the **Salmon Population Summary Database**.

PSMFC manages a project funded by Bonneville Power Administration that supports development and updates of the Northwest Power and Conservation Council (NPCC) Columbia River Basin Fish and Wildlife Program Tracker tool. The Tracker is housed on NPCC's website and depicts the status of fish populations and progress towards Program objectives and indicators.

PSMFC provided administrative assistance to NMFS and project partners for **San Francisco Bay Habitat Improvement, Southeast Alaska Fish Habitat Partnership, Washington Veterans Corps Assistance, Hosting Shorezone, Bar-Built Estuaries Guidance, PMEP Spatial Data Project, Assessing Eel Grass in Morro Bay, and Monitoring Small Dam Removal in Southern California**.

PSMFC staff is assisting NMFS with the completion of **Hatchery and Genetic Management Plans** for fish propagation programs in Puget Sound and in the Mokelumne River in California. Subcontracts with the Northwest Indian Fisheries Commission and a private consultant are supporting production of these plans, which are required by NOAA for continued operation of fish propagation facilities.

PSMFC provided administrative, coordination, and technical support to the **Pacific Marine and Estuarine Fish Habitat Partnership, California Fish Passage Forum Fish Habitat Partnership, and the Pacific Lamprey Fish Habitat Partnership**. Additionally, PSMFC assists with the **National Fish Habitat Partnership** and the **20 Fish Habitat Partnerships**.

Fish Habitat Program

The **Pacific States Marine Fisheries Commission (PSMFC) Fish Habitat Program** protects and restores fresh, estuarine, and marine habitats that support salmon and other, numerous, fish species of commercial, recreational, and ecosystem importance. In 2019, the Habitat Program received funding from the Wallop-Breaux Sport Fish Restoration program managed by the U.S. Fish and Wildlife Service (USFWS) and from National Oceanic and Atmospheric Administration (NOAA) inter-jurisdictional funds.

The Habitat Program supports the efforts of multi-stakeholder organizations involved in cooperative, non-regulatory programs and projects to advance habitat conservation and restoration actions, science, and policies. The Fish Habitat Program Manager collaborates with them and additional non-profit and inter-agency groups: attends meetings, serves on committees and boards, and assumes duties and projects.

2019 Highlights:

PACIFIC MARINE ESTUARINE FISH HABITAT PARTNERSHIP (PMEP)

PSMFC is an active member of PMEP (<http://www.pacificfishhabitat.org/>), one of twenty National Fish Habitat Partnerships. PMEP has a diverse membership that includes federal, tribal, state, and non-governmental participants from California, Oregon, and Washington. The partnership emphasizes understanding, conserving, and restoring priority habitats such as the juvenile fish habitat in estuarine and nearshore areas, assuring the connection between coastal and tidal wetland areas. With funding provided by the National Fish Habitat Partnership (NFHAP), PMEP advances scientific information about estuaries, tidal marshes and swamps, eelgrass, and fish, supporting both restoration and conservation projects.

The Fish Habitat Program Manager is a member of PMEP's steering and communications committees, serves with the PSMFC Senior Program Manager on the governance committee, and assists with review of restoration funding proposals. Additionally, PSMFC's staff provides research support and Geographic Information System services and is currently developing

a PMEP data system and interactive website. PSMFC also administers fiscal services for the group.

In 2019, PMEP finalized its eelgrass habitat report, assessing the amount of restored tidal wetlands and analyzing historic loss offset by restoration efforts. It similarly updated its coastwide maps with a uniform classification system for nearshore habitat types. Evaluation of the location and impacts of tidal connectivity barriers (e.g., roads, undersized culverts, tide gates) continues in cooperation with other fish habitat partnerships: the California Fish Passage Forum and the Pacific Lamprey Fish Habitat Partnership. PMEP also distributed approximately \$124,000 to three, habitat restoration and assessment projects: Eelgrass Expansion in the Morro Bay Estuary (transplanting eelgrass); Mattole River Estuary Middle Slough Restoration (off channel slough habitat); and assessment and mapping of seagrass and macroalgae kelp habitats (two marine reserves in Oregon). These funds were awarded to PMEP through the Fish and Aquatic Conservation Program of the USFWS.

WATERSHED RESTORATION PROJECTS

Watershed Council support: The Habitat Program supplied administrative and technical support for organizations conserving and restoring fish habitats on the Oregon coast, directly engaging with non-profit boards, committees, and working groups. The Program cooperated with the MidCoast Watersheds Council and the Salmon Drift Creek Watershed Council to ensure that high priority projects were designed, funded, and pursued through use of email communications, conference calls, meeting participation, and direction to the groups' staff. It also reviewed restoration plans and drafted documents and proposals outside of these meetings. Through these partnerships, funds exceeding \$1.54 million were secured for technical assessment and restoration project implementation. In addition, PSMFC worked in close collaboration with the MidCoast Council and federal, tribal, and state partners to plan, fund, and engineer both a stage zero floodplain restoration project and a 55-acre tidal wetland restoration project. These projects will be implemented during the in-water work periods during summer 2020.



Documenting pre-restoration site conditions on a tidal marsh. Courtesy of Fran Recht, PSMFC

Living with Beaver for Coho and Watershed Health:

In 2019, PSMFC expanded its “Living with Beaver” program. The project partnered with Oregon Department of Fish and Wildlife and beaver mitigation specialists to obtain clarity on fish passage issues and to develop design standards for pond levelers, beaver dam analogs, trash racks, and other devices that may minimize beaver related problems. Additionally, two of PSMFC’s “Living with Beaver” videos were selected for presentation: *Beavers on Working Lands*, at the American Fisheries Society (AFS) and The Wildlife Society’s meeting and film festival in Reno Nevada; and *Beavers and Salmon* for the Oregon AFS division meeting. In December 2019, the *Beavers and Salmon* video was chosen for a screening at the April 2020, Vancouver, B.C. meeting of the Western Division and Washington-British Columbia Chapters of AFS. Videos can be viewed at <http://habitat.psmfc.org/living-with-beaver/>



Beaver dams create excellent Coho rearing habitat. Courtesy of Fran Recht, PSMFC

U.S. Forest Service (USFS) Stewardship

Group: The Habitat Program also aided restoration efforts through the Alsea Stewardship Group, a multi-party group that functions in conjunction with the USFS to place habitat restoration projects on the ground. Under the federal stewardship contracting authority (commonly termed the Wyden Authority), a portion of timber sale receipts from commercial cuts or thinning sales can be reinvested in habitat restoration projects within national forests or for surrounding private lands that directly benefit the forest watershed and its fish and wildlife. In 2019, it reviewed and made recommendations for priority national forest restoration projects that included road decommissioning for erosion control and large wood placement projects. It also supported funding for private land projects positively impacting the forest: tidal marsh restoration, riparian planting, sediment reduction, and invasive plant control.

FISH HABITAT RESTORATION - FIELD TOURS

Each year, the Habitat Program assists with sponsorship of watershed tours for restoration practitioners at California’s Salmonid Restoration Federation conference. In 2019, the conference was held in Santa Rosa, CA. Eleven, full-day tours were offered over the course of two days. Most tours had 15-20 participants. The tours allow those participating in restoration projects to learn new, effective techniques and experience projects “on the ground”: Restoring to Stage 0 Workshop; Assessing Ecological Risks from Streamflow Diversions Workshop; Napa River Watershed Tour; Burned Watersheds, Natural Regeneration, and Active Restoration Field Tour; PIT Antenna Technology: An Array of Applications in the Russian River Watershed Tour; Growing Impacts: Cannabis and Instream Flows Workshop; Urban Stream Restoration Workshop and Field Tour; Exploring a Stage 0 Valley Tour; Dry Creek Field Tour; Dutch Bill Watershed Streamflow Improvement and Coho Recovery Tour; Winter Habitat, Floodplains, and Fish Passage in Lagunitas Creek Tour.

MARINE DEBRIS

PSMFC remains associated with the Marine Debris Alliance (MDA), initially formed under the West Coast Governors Alliance on Ocean Health. Featured projects advance state marine debris action plans. In 2019, the Fish Habitat Program Manager served as co-chair of the steering committee and sponsored a webinar to share innovative projects and progress about the West Coast. The hour-long webinar, co-sponsored by Open Communications for The Ocean (OCTO), was attended by 140 onsite and 248 remote participants who received quick overviews of MDA and NOAA's Marine Debris Program followed by ten-minute presentations on three topics:

- Fishing Gear Removal Efforts with Tribal Nation Collaborators: Molly Bogeberg, The Nature Conservancy
- Rise Above Plastics campaign: Charlie Plybon, Surfrider Foundation, Oregon Chapter
- Reduction of Single Use Items in the California State University System: Tamara Wallace, Sustainability Programs Manager

The webinar is available through OCTO's OpenChannels website: <https://www.openchannels.org/webinars/2019/current-actions-west-coast-marine-debris-plans-project-west-coast-marine-debris>.

WHALE ENTANGLEMENT

In 2019, PSMFC, as an advisor to the California Dungeness Crab Fishing Gear Working Group at monthly meetings, continued its involvement with whale entanglement in Dungeness crab gear; acted as a liaison between gear innovators and fishermen (testing); offered proposal guidance to gear innovators; promoted outreach to and funding for fishermen in their work; participated in an innovative gear testing day; and shared information from California and Oregon efforts and NMFS with members of the Washington Whale Entanglement Working Group. PSMFC also sponsored attendance at a ropeless gear workshop and distributed the resulting report to California, Oregon, and Washington working groups to share ongoing progress in the development and use of such technologies.

PACIFIC FISHERY MANAGEMENT COUNCIL

The PSMFC Fish Habitat Program Manager serves on the Council's Habitat Committee that advises the Council about policies and actions affecting the essential fish habitat of managed species. PSMFC's Special Assistant to the Executive Director also serves on the Council as a non-voting member and parliamentarian and chairs the Council's Legislative Committee. Habitat items discussed in 2019 included Columbia, Klamath, and Sacramento water, dam, and habitat issues; ecosystem-based fishery management; salmon rebuilding plans; and the Jordan Cove pipeline issue.



Testing ropeless gear in California. Courtesy of Fran Recht, PSMFC

Individual Fishing Quota Trawl Rationalization Catch Monitor Program

The **Individual Fishing Quota (IFQ) Catch Monitor Program (CMP)** provides accurate, timely, and independent third party verification of catch landed in the IFQ Trawl fishery. Catch monitors (CMs) conduct dockside monitoring for first receivers who land IFQ catch. They verify the sorting, weighing, and recording of catch as it is offloaded by first receivers. The CMP was created in 2008 to monitor the whiting fishery and then expanded to include all trawl landings when the IFQ program was implemented in January 2011.

The IFQ trawl fishery has a catch verification system in place to ensure that IFQ groundfish species, particularly overfished species, as well as Chinook salmon and Pacific halibut, can be adequately monitored and accounted for in-season to maintain the integrity of vessel quotas used to manage groundfish species and trip limits.

During the course of the year, the CMP conducted annual briefings for 41 returning CMs to assess their ability to effectively accomplish their job duties. This included a review session and a discussion of any applicable changes to federal regulations and CMP protocol.

The CMP completed four trainings certifying a total of 29 new CMs who are also trained as at-sea observers. In addition, the program trained two dockside CMs at the request of CM providers. These individuals work only on shore and monitor deliveries primarily from vessels with Electronic Monitoring Systems. This brought the total of certified CMs for 2019 to 70.

For the 2019 fishing year, debriefings were conducted with each CM in the field. This safeguards data quality and resolution of any problems that may not yet have been addressed regarding CM data quality, first receiver problems, or any other concerns that may have been encountered. Program staff achieved 57 debriefings during the calendar year for both CMs in the field and those leaving the program.

Program staff completed a review of Catch Monitor plans for 41 IFQ first receivers situated between Bellingham, WA and Morro Bay, CA and conducted site visits at 28 of the locations. During these site visits, Program staff worked with fish buyers on compliance with federal regulations and confirmed that offload and safety procedures are clearly outlined in the Catch Monitor plans. Once all requirements were fulfilled, Catch Monitor plans were submitted to National Marine Fisheries Service (NMFS) where the annual IFQ First Receiver Site License is issued.

The CMP reviews CM and first receiver data as it enters the data system, searching for any anomalies between the data sets. Staff works with the CMs, first receivers, and NMFS to resolve data issues in a near real time setting as possible.

The IFQ CMP is comprised of two, full-time Pacific States Marine Fisheries Commission employees who work solely on this project.

Northern Pikeminnow Sport-Reward Program

The **Northern Pikeminnow Sport-Reward Program** is a joint effort between the fishery agencies of the states of Oregon and Washington and the Pacific States Marine Fisheries Commission (PSMFC). Funding for the program is contributed by the Bonneville Power Administration (BPA). The 2019 season marked the 29th consecutive year of the Sport-Reward Fishery program.

Oregon Department of Fish and Wildlife (ODFW) provided fish tagging services, population studies, food habit and reproductive studies, as well as exploitation rate estimates. The Washington Department of Fish and Wildlife (WDFW) operated the sport-reward registration/check-in stations throughout portions of the Columbia and Snake Rivers and handled all fish submitted by anglers. PSMFC administers fiscal and contractual oversight for all segments of the program and processed all reward vouchers for sport-reward anglers. Maintenance of the website (www.pikeminnow.org) is also managed by PSMFC. The 2019 season ran from May 1 through September 30 and could be characterized as an average harvest year, with a higher percentage of the overall catch coming from below Bonneville Dam than in past years.

2019 Highlights:

- A season total of 146,225 fish were harvested in the sport-reward fishery.
- Vouchers for 144,878 fish of the 146,225 total catch were submitted for payment with rewards totaling \$1,161,421.
- Rewards were paid at \$5 for each of the first 25 fish caught by an angler during the season; \$6 for each fish caught in the 26-200 range; and \$8 for each fish caught by an angler above 200 fish.
- A total of 1,080 registered anglers were successful in catching one or more fish in 2019. The top Pikeminnow angler for 2019 caught 6,482 fish and was paid \$53,107 for his efforts.
- A total of 143 tagged fish were caught in 2019, of which 141 were submitted for payment.

Anglers were issued a special, tagged fish voucher for all tagged fish brought to a registration station. The tag voucher was then mailed, along with the tag, for verification by ODFW. A payment of \$500 was issued for each tagged fish. A total of \$70,500 was paid in 2019 for these tagged fish submitted for payment. A total of 183 tag-loss fish (fish that had been tagged, but shed the external mark before capture) were paid a bonus reward of \$100. The total season tag-loss bonus was \$18,300.

Systemwide exploitation of Northern Pikeminnow during the sport-reward fishery was 15.4% (95% confidence interval; 11.0–19.85%). The goal of an annual exploitation rate between 10-20% was achieved again this year. Using the model of Friesen and Ward (1999), it is estimated that 2020 predation levels will be 29% (range: 13–42%) lower than pre-program levels.

PSMFC staff continued with the maintenance and content development of the Northern Pikeminnow Sport-Reward Program website. This included regular updates of top-20-angler catch and payment numbers and the design of enhanced visual graphics.

N2+ Creative planned an integrated marketing campaign to educate prospective anglers. In addition to brochures, ads were featured on NBC Sports Northwest/Outdoor GPS LIVE and on Northwestern Outdoors Radio. The Program also had a booth at the annual Outdoor GPS Day at the Park.

Expanded use of print advertising media and ongoing participation in numerous outdoor trade shows throughout the Northwest contributed to improved catch and increased participation in the 2019 season. As in previous years, the Northern Pikeminnow Sport-Reward Program purchased promotional space in the ODFW and WDFW Regulations pamphlets to encourage angler involvement.



Photo courtesy of PSMFC

Pacific Fisheries Information Network

The **Pacific Fisheries Information Network (PacFIN)** provides timely and accurate data essential for effective fisheries management. The nation's first regional fisheries data network, PacFIN is a joint federal and state data collection and information management project. It is funded by a grant from the National Marine Fisheries Service (NMFS). Cooperative agency and industry partners supply data from commercial fisheries off the coasts of California, Oregon, Washington, and British Columbia. These statistics are recorded in the PacFIN central database, which includes fish-ticket and vessel registration data from state fishery agencies in California, Oregon, and Washington, and in species composition and catch-by-area proportions from port sampling and trawl logbook data systems. NMFS supplies the central database with limited entry permit data and daily summaries for the West Coast at-sea fishery developed from tow-by-tow observations. The Network combines the collected information to provide accurate estimates of commercial catch and value for the West Coast. This regional data source allows state and federal fisheries agencies to manage regional fisheries and fishery resources more efficiently and enables research by industry, non-governmental organizations, and universities.

In 2019, PacFIN updated the central database with state and federal source data and responded to various requests for information. PacFIN reports were maintained on the Pacific States Marine Fisheries Commission (PSMFC) and PacFIN websites.

2019 Highlights:

PACFIN USER SUPPORT

PacFIN staff worked with clients to establish new accounts, granted table access, and assisted with data retrievals from the PacFIN server. In addition, personalized accounts allowed authorized users access to web-based query tools.

DATABASE REDEVELOPMENT

The redevelopment of the Biological Data System (BDS) advanced in 2019 with a new “extract, transform, load” (ETL) design to capture data directly from the source agencies to replace the data file delivery system used in the legacy environment. Initially, the legacy BDS tables were mirrored in the redeveloped BDS schema objects, with user access available from a comprehensive BDS table. With completion of the new ETL design, Washington source data is obtained directly from a Washington Department of Fish and Wildlife (WDFW) web services platform, and the CALCOM database is the source for California data. CALCOM is maintained on a PSMFC server with source data from the Groundfish Catch Monitoring program in California. The Oregon Department of Fish and Wildlife (ODFW) continues to deliver data in an updated file specification format. Production data is now online in the BDS schema. Users access the data either directly from the COMPREHENSIVE_BDS_COMM table in the PACFIN_MARTS schema or from the web based QueryBuilder tool.

The first set of fixed gear logbook data was received from ODFW during this period as the next step in the design and implementation of a fixed gear logbook subsystem in PacFIN. Database objects were created, and all source data imported and documented for the initial design. Further coordination and collaboration with ODFW to fully integrate the data in PacFIN will continue in 2020.

Additional steps for seamless system integration were achieved with the Pacific Coast Groundfish Harvest Specifications and Management Measures Database (SPEX) and Highly Migratory Species (HMS) data sets:

- In the SPEX system, each combination of Stock and Area is categorized using an Annual Catch Limit (ACL) code. For example, “SABL_N” is the ACL Code for Sablefish North of 36. With the production roll-out of SPEX, downstream analytical tools such as the Comprehensive FT and GMT Scorecard now include the ACL codes as a simple reference attribute and as the basis for fishery management calculations.

- Detailed HMS annual reports have been labor intensive in the past. With the production deployment of the updated HMS database, trip identifiers are now linked to landing receipts in PacFIN, allowing for significant automation and efficiency when generating these reports.

HIGHLY MIGRATORY SPECIES (HMS) DATA COLLECTION AND REPORTING

In collaboration with the NOAA West Coast Region (WCR) and SWFSC, PacFIN continued various projects in 2019 to modernize data structures and improve reporting and data collections systems for the HMS observer, the HMS logbook, and sampling databases. These databases contain data from multiple HMS fisheries: albacore troll, large-mesh drift gillnet, deep-set buoy, recreational, harpoon, and hook and line. PacFIN and SWFSC staff completed the first phase of automated annual reporting for data submissions to the regional fisheries management organizations (RFMOs). PacFIN designed a temporary data entry system for the West Coast Region Observer Program's (WCROP) emerging deep-set buoy fishery for swordfish that will be used as a template for the development of an onboard tablet application. PacFIN staff and WCR proceeded with a project to evaluate potential observer bias in support of the NMFS Biological Opinion update for the large-mesh drift gillnet fishery. Additionally, SWFSC coordinated with PSMFC and PacFIN to keypunch the 2019 albacore troll logbook data.

At the request of the Pacific Fisheries Management Council (PFMC), PacFIN created a new public report for in-season HMS fisheries that compares the cumulative landings of the current year to the average of the previous five years by fishery or species in table and graph format. PacFIN, together with PFMC and WCR staff, also developed reports on the participation in and dependence on HMS fisheries by fleets and port communities.

PRICE ESTIMATION ALGORITHM AND PRICE OUTLIER REDEVELOPMENT

The PacFIN algorithm to estimate state fish ticket prices for null prices when appropriate, based on a set of business rules to use the best available surrogate value, was modified to

implement changes in the California Department of Fish and Wildlife, ODFW, and WDFW state agency business rules for pricing effective January 1, 2020. The price estimation algorithm is based on condition, disposition, grade, period, port, and gear of known prices for a species, to be used as a surrogate price when the price is unknown. During this period, a new application feature was developed that allows data providers to view flagged price outliers and to adjust upper and lower limits in the algorithm if the flagged outliers are known to represent valid prices. This enhancement has enabled data providers to review source fish tickets with questionable prices as the data is being uploaded into PacFIN, permitting more immediate validation and correction in the source database when needed.

ISSUE TRACKING TOOL

The issue tracking system developed in Jira, a work management tool, continues to expand its operation as a shared web interface. It allows users to report potential data issues and then follow the progress toward resolution. PacFIN staff serve as "data wranglers," assigning issues to source agency "data stewards" for review, assessment, and action when warranted. This tool has proven effective in expediting the resolution of suspected data errors.

APEX REPORTING SYSTEM

The use of APEX on PacFIN's website has continued its expansion of both public and password protected confidential reports designed for various applications, including state and federal law enforcement vessel and port summary landings; RFMOs active vessel and permit monitoring reports; HMS landings, permits, and logbook compliance reports; Coastal Pelagic Species landings data; Groundfish Management Team (GMT) reports; and, more recently, Economic and Social Sciences reports drawing from the U.S. Census Bureau's American Communities Survey.

PACFIN QUERYBUILDER APPLICATION DEVELOPMENT

A new web-based query application was introduced in 2019. A controlled user group was selected in March to begin testing. Testing results contributed to application enhancements

and a rollout of phase one in production for authorized users. The QueryBuilder app, developed in APEX, allows users to generate customized queries from three comprehensive datasets: state fish ticket landings data (comprehensive_ft), federal at-sea whiting fishery landings data (comprehensive_npac), and state biological samples data (comprehensive_bds_comm). The results of the customized queries can be downloaded to the users' desktop. The queries can also be saved and edited for later use. Phase two development, with advanced features and enhancements based on user feedback, has an anticipated completion date of summer 2020.

PACFIN ANSWERS TOOL DEVELOPMENT

Usage of Oracle business intelligence software, Oracle Answers, assisted with query development in the PacFIN database. Various user-specific queries and customized user dashboards were built to generate specialized reports and data sets on demand.

GROUNDFISH MANAGEMENT TEAM (GMT) SCORECARDS

Through APEX software development, the PFMC Fisheries Management Plan (FMP) Groundfish Species Scorecard report reached a milestone during this period with completion of the In-season Management Scorecard, developed to provide the best estimate of total mortality of groundfish stock species and stock complexes for all commercial, tribal, and marine recreational fisheries on the West Coast within the management jurisdiction of PFMC. The estimates include the most recent data available to PacFIN and RecFIN for in-season tracking. Data sources include: state fish tickets from PacFIN's Comprehensive Fish Ticket table, PSMFC's electronic fish tickets system (E-Tix), California Agency Tickets (E-Tix sub-system), PacFIN's comprehensive NPAC table (at-sea whiting observer data), WCGOP's total annual discard estimates, GMT Nearshore Fixed Gear Discard Estimates, state recreational catch estimates from RecFIN's Comprehensive Recreational Catch Estimates table, and SPEX. There are currently two versions of the new scorecard, a confidential version that is used by the Council's GMT, and a non-confidential version that is available to the public.

PACIFIC COAST GROUND FISH HARVEST SPECIFICATIONS AND MANAGEMENT MEASURES DATABASE (SPEX) DEVELOPMENT

SPEX, in support of PFMC/GMT planning, has steadily advanced over the last year. GMT members now enter data into the system to generate multiple, alternative, groundfish harvest specifications and management measures for 2021-2022, which will be reviewed by PFMC. These alternatives are currently available to PFMC and the public through online reports developed and hosted by PacFIN. After the review process, one of the alternatives will be adopted and become the final harvest specifications and management measures for 2021-2022, which will also be available through online reports hosted by PacFIN.

PACFIN WORKGROUPS

PacFIN workgroups active during this period included:

- HMS, to support APEX report development
- HMS logbook and observer database redevelopment; other varied, cooperative efforts
- GMT planning and implementation of in-season reporting protocols, scorecard applications, and SPEX application development
- PacFIN Data Management coordination: data collection, delivery, and validation operations between PacFIN and all data sources
- Review of west coast state agency business rules in support of PacFIN price estimation and outlier detection procedures
- Introduction of an issue tracking system

REPORT FROM GROUND FISH CATCH MONITORING AND DATA SYSTEMS IN CALIFORNIA

The program monitors California commercial groundfish data for effective fisheries management. Fisheries technicians sampled commercial groundfish landings to determine species compositions of landings and collected biological data on size, sex, and reproductive

condition of those species. That data was entered into a statewide groundfish sampling program database. They also inputted groundfish trawl logs into the PSMFC eLogbook system. The data analyst and managers generate monthly and annual estimates of species, age, length, and sex composition from the statewide groundfish sampling program and submit the data to PacFIN. Considerable effort must be expended to satisfy in season and between-season management needs dictated by the Groundfish FMP.

MEETINGS AND SEMINARS

Internal PacFIN meetings were conducted weekly. Teleconference workgroup meetings with PacFIN partners were held as required. Various conferences, trainings, and collaborative meetings across agencies were attended by individual PacFIN staff during this period. The PacFIN Annual Meeting occurred on October 23-24, 2019 in Portland, OR.

Recreational Fisheries Information Network

The **Recreational Fisheries Information Network/Program (RecFIN)** continued in 2019. The Pacific States Marine Fisheries Commission (PSMFC) works cooperatively with the National Marine Fisheries Service (NMFS) and state fish and wildlife agencies from California, Oregon, and Washington to maintain robust and accurate recreational fishery data collection and database programs for the Pacific Coast.

The four goals of RecFIN:

- Develop and implement a state/federal cooperative program for a coastwide marine recreational fisheries data system.
- Coordinate collection, management, and dissemination of Pacific Coast marine recreational fishery data.
- Provide current data from a centralized location in a format designed to support state and federal work on Pacific marine recreational fisheries.
- Reduce and avoid duplication of data collection efforts among RecFIN members.

The database contains recreational fishery data for the years 1980-89 and 1993 to the present. The primary source of data in the RecFIN database derives from the following five state sampling programs: the Oregon Recreational Boat Survey; the Oregon Shore and Estuary Boats Survey (currently inactive due to funding shortage); the Washington Ocean Sampling Program; the Washington Puget Sound Boat Survey; and the California Recreational Fisheries Survey (CRFS). These programs are subsidized in part by NMFS and supplemented with state agency funding in all three states. The survey is conducted at nearly 800 coastwide, fishing access points. Of these sites, approximately 57% are in California, 10% in Oregon, and 33% in Washington.

2019 Highlights:

The state of California, partly through PSMFC's financial support, was responsible for the collection of recreational finfish harvest from

six geographical districts through the CRFS program. Over 107,000 angler trips were sampled in 2019 from three, distinct fishing modes (private and rental boats, party and charter boats, and man-made structures) and three water areas (ocean offshore, nearshore, and inland marine/estuarine). Of retained catch, CRFS staff observed and identified over 215,000 finfish and invertebrates.

Through RecFIN, PSMFC provided partial funding for recreational fishery sampling in Oregon and Washington. Sampling was administered by the state fish and wildlife agencies in both states. Approximately 31% and 41% of all ocean boat trips were sampled in both Oregon and Washington in 2019.

Sampling program personnel conducted more than 297,000 angler trip interviews, and over 879,000 individual specimens were examined in California, Oregon, and Washington. Approximately 144,000 biological samples were collected coastwide. Estimates of total catch reveal over 6.8 million individual fish and invertebrate from 225 different species were retained by anglers coastwide.

In December 2019, the RecFIN/Marine Recreational Information Program (MRIP) Implementation Plan (2019–2021) was adopted. This plan was developed in response to Pacific Coast regional needs to enhance data for regional fishery management and science, and integrates West Coast data collection and reporting efforts with the goals of the MRIP national plan.

Catch, effort, and biological sampling data for all three states can be accessed in the RecFIN database (www.recfin.org) maintained by PSMFC. Detailed explanations of the sampling methodology and estimation statistics of the various sampling programs can also be viewed on the website. In 2019, PSMFC staff continued their efforts to improve and develop the RecFIN database and the online reporting system. With the cooperation of state and federal partners, several new reports, tools, and metadata products were added to the RecFIN APEX reporting system, and a number of new data sources were integrated into the existing database structure.

Education of marine recreational anglers was again a priority for fishery managers in 2019, with a focus on increasing use of barotrauma reduction devices and improving angler identification of harvested rockfish. Through funding provided by several, different National Oceanic and Atmospheric Administration grants, PSMFC staff worked with state and federal managers and private fishing organizations to develop and distribute a number of education and outreach materials to Pacific Coast anglers. Over 6,200 laminated rockfish identification sheets and nearly 750 descending devices were made available to anglers throughout the Pacific Coast and Alaska.

In addition, PSMFC and WDFW collaborated on the creation of a barotrauma outreach slogan that was printed on a no-spill cup holder, L'il Sucker®, a 4.5 inch diameter, suction-adhering, neoprene ring for glasses and containers. The design includes the WDFW logo, a Yelloweye rockfish, a Shelton fish descender, and a SeaQualizer. In 2019, 2,590 L'il Sucker rings were distributed to West Coast marine recreational anglers through NMFS, the Olympic Coast National Marine Sanctuary, the Puget Sound Anglers, and WDFW.



L'il Sucker ring. Design by Craig Miller, PSMFC

Regional Mark Processing Center

The **Regional Mark Processing Center (RMPC)** serves federal, state, tribal, and private fisheries agencies on the Pacific Coast by processing and exchanging Coded Wire Tag (CWT) release, recovery, and associated catch sample information. RMPC adopts new data formats and implements software, hardware, and personnel enhancements to meet evolving CWT informational needs by the Pacific Salmon Commission (PSC) and other agencies in support of the Pacific Salmon Treaty (PST). In addition, RMPC has the responsibility of serving as the sole U.S. database to exchange CWT information with Canada in PSC format on a regular basis. RMPC maintains the Regional Mark Information System (RMIS) database and coordinates the acquisition and validation of these data from the various agencies. Funding is provided by the U.S. Fish and Wildlife Service (USFWS), the Bonneville Power Administration (BPA) and the National Oceanic and Atmospheric Administration (NOAA) Fisheries. Over 60 million coded, wire-tagged fish are now released coastwide every year, primarily from publicly funded fish hatcheries, with approximately 1,200 different tag codes.



Photo courtesy of George Nandor, PSMFC

DATABASE SOFTWARE CHANGE

2019 was the fourth year of using PostgreSQL open source database software for operating the RMIS. This has been very successful, and the new system is functioning flawlessly. The change has also decreased costs and increased available disk space on the PSMFC virtual servers.

DATA VALIDATION

CWT data load programs were upgraded to perform more rigorous cross-table checks of tag releases in format version 4.1 when validating newly submitted tag recovery data sets. This is an ongoing project as data uploading errors are identified and corrected. The staff continues to work closely with agencies to implement improved validation of new data before it is merged with RMIS and to correct historical data already within the database.

DATA INTEGRITY

Maintaining data integrity is an important aspect of sustaining large databases, and considerable time was spent working with the various data reporting agencies to resolve various inconsistencies found in CWT data sets. While the number of errors was relatively small, it took considerable effort to resolve the causes of the errors and correct them. Also, substantial effort was placed into inserting Geographic Information System (GIS) coordinates (latitudes and longitudes) for release and recovery locations. This provides the ability to map the data for the U.S. and Canadian locations.

MISSING RECOVERY DATA

Missing tag recovery data for certain areas have been identified. RMPC continues to work closely with the responsible agencies to coordinate the filling of those data gaps.

GEOGRAPHIC INFORMATION SYSTEMS MAPPING OF RELEASE AND RECOVERY LOCATIONS

The mapping tool for viewing maps of specific CWT codes as points displaying hatchery, release location, and subsequent recovery locations was updated and enhanced for use in PostgreSQL. This is available for release queries in RMIS. Latitude/longitude of all release and recovery locations for the U.S., using GIS mapping tools, have been entered in the database. The Canadian release and recovery locations were included in 2018 and have also been incorporated into the mapping database. This is an ongoing project to enhance the plotting of CWT release and recovery locations. Updates to the mapping locations are made as

needed when new locations are identified and as agencies report corrections. Region and basin maps can be viewed at <https://www.rmpec.org/rmpec-domain-region-basin-maps.html>.

ANNUAL MEETING OF THE REGIONAL COMMITTEE ON MARKING AND TAGGING

The 2019 Mark Meeting (<https://www.rmpec.org/rcmt-minutes.html>) was held April 23-24, 2019, in Astoria, OR. The meeting was hosted by the Oregon Department of Fish and Wildlife (ODFW).

Agenda items included the following updates: RMPC activities and publications; the status of CWT data; PSC Data Sharing Committee; Data Standards Work Group activities; and the PSC Selective Fishery Evaluation Committee. Northwest Marine Technology communicated changes in personnel, office locations, and some products and services.

In addition, a number of timely reports were presented to the Mark Committee to increase regional awareness of the various marking issues facing the fisheries agencies on the West Coast, including:

- Updates on mass marking, selective fisheries, and agency tagging levels for 2019
- Presentations providing an overview of the CWT Program and the status of the Southern Resident Killer Whales.
- Discussion pertaining to the Washington Department of Fish and Wildlife's (WDFW) proposed changes to its system of Location Codes and the significant data query issues with those proposed changes affecting established queries being used by the various PSC technical committees.
- A Coho CWT analysis update for the ideal number of tag releases based on the most recent survival and recovery rates
- Columbia River salmon and sea lion management

REGIONAL COORDINATION

RMPC staff participated in PSC committees and in regional science and management teams

to assist with coordinating CWT activities, also providing CWT data. Under a contract with the Lower Snake River Compensation Plan, RMPC continues to work closely with Idaho Department of Fish and Game. PSMFC contributes staff assistance for their hatchery data. RMPC also



Photo courtesy of George Nandor, PSMFC

works with ODFW and WDFW to implement the CWT recovery program in sampling sport, commercial, and tribal fisheries for salmon and steelhead carrying tags under a BPA-funded contract. The recovered tags are read and decoded, then the information is added to the RMIS database for use by fish management agencies to make science-based decisions regarding populations of salmon and steelhead in the region. In addition, PSMFC staff aided regional research biologists in acquiring CWT data required for a variety of projects.

CODED WIRE TAG DATA

Work continued full-time on expediting the processing and storing of new data sets (CWT releases, recoveries, catch/sample, etc.) as they were supplied by the various reporting agencies.

Number of new data rows in RMIS tables added during calendar year 2019:

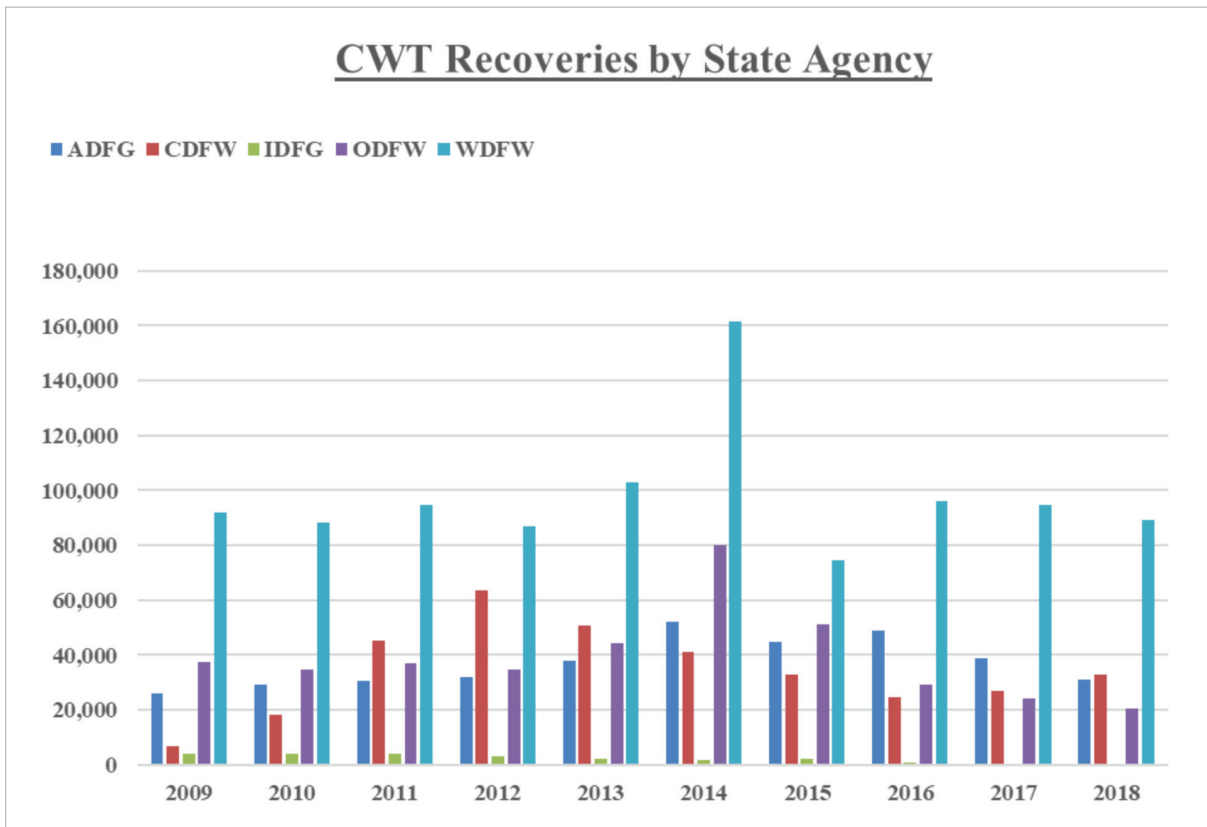
Releases:	2,424 rows
Recoveries:	259,832 rows
Catch/Sample:	8,983 rows
Locations:	-37 rows

Canada deleted 155 locations from the database that it did not intend to use. Alaska, California, Oregon, Washington, and NOAA Fisheries

added a combined total of 118 new locations, resulting in 37 fewer location codes in RMIS. Use of the RMIS database remains strong in the fisheries community. It is of interest that 698 different people logged in to RMIS in 2019. Many of those people logged in multiple times, with 431 people signing in more than once, and 123 people entering ten or more times over the year. One power user has logged in 1,238 times since registering on the RMIS site and logged in 635 times in 2019.

SPECIALIZED DATA REQUESTS

Throughout the year, specialized requests were received and processed for all CWT recoveries for specific sets of tag codes. These “brood reports” summarized tag recoveries across all fisheries, agencies, and recovery years. In addition, numerous data users were assisted in retrieving “raw” recovery records. These data subsets were then processed by the respective data users in a variety of ways to build their own in-house PC databases and to generate customized reports, etc.



Note the big increase in CWT recoveries by CDFW (California Fish & Wildlife) beginning in 2010, due to the implementation of constant fractional marking (25%) of all fish releases.

StreamNet

StreamNet is a regional forum for fish and aquatic information management and data sharing. StreamNet began in the 1980s to provide standardized information to inform Columbia River basin assessments, reports, and decision-making processes. Starting in 2010, StreamNet further supported regional assessments and decisions in the Pacific Northwest that rely on fish population indicators by becoming a co-sponsor of the Coordinated Assessments Effort (CA Effort). StreamNet also serves as Bonneville Power Administration's (BPA) system of record for fish distribution and facilities, providing a comprehensive location for partners' information.

During 2019, StreamNet focused on the work prioritized by the StreamNet Executive Committee, including StreamNet data systems that maintain archived data sets related to fish and other aquatic resources (Data Store), local scale "fish trends" data, GIS maps and data sets, and the CA Effort's CA Exchange (CAX) for high level indicators (HLIs), resulting with:

- **425,710** application programming interface (API) hits/usage events; the API facilitates efficient sharing and accessing of information on the CAX and StreamNet data systems.
- **18,106** fish trends, consisting of 186,138 records in StreamNet's local scale "fish trends" data system; this is a cumulative total of all past years combined (Table 1).
- **12,541** new records for CA Effort's HLIs submitted to CAX (Table 2).
- **9,401** unique visits to the StreamNet website by the public, tribes, and federal and state agencies, and others (excludes repeat visits)
- **6,968** users retrieving information from CAX and local scale data systems.
- **5,794** unique daily users accessing our web-based GIS mapping applications.
- **745** download events of GIS data sets by academic institutions, non-profit organizations, private organizations, tribes, and federal, regional, state, and county/ municipal agencies

Additionally, StreamNet PSMFC staff co-hosted the 2019 Smolt Estimation and Analytics Workshop with the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), and co-authored a 2019 white paper on citing aquatic monitoring data sets with PNAMP and the National Oceanic and Atmospheric Administration (NOAA) Fisheries' West Coast Region. Implementation of the BPA secure data repository initiative, including submission of data sets with no other available secure repository to the StreamNet Data Store, continued to be a priority for StreamNet staff and partners. All StreamNet PSMFC staff and partner data stewards assist data providers and consumers.

The need for effective and timely access to information to inform regional decision-making remains prominent in the Columbia River basin and the Pacific Northwest as a whole. Specifically, BPA, NOAA, and the Northwest Power and Conservation Council (NPCC) have all identified an ongoing need for regionally coordinated, securely stored, and readily accessible data to support their reporting and decision-making processes. Through StreamNet and the CA Effort, PSMFC supports the information needs of NOAA's 5-year salmon and steelhead status review, BPA's Federal Columbia River Power System Biological Opinion reporting, and NPCC's Program Tracker.

StreamNet's commitment to working cooperatively with tribes, tribal consortia, and federal and state agencies that compile and share Columbia River basin data is critical to its success. StreamNet also partners on collaborative initiatives contributing to improved data management. The information housed at StreamNet includes archived data sets on the Data Store, NPCC Wildlife HEP documents, and fish trends data for resident and anadromous fish species on the StreamNet local scale data system that can be obtained from <https://www.streamnet.org/data/>. Access to the fish distribution and facilities' GIS layers that serve as BPA's system of record are available at <https://www.streamnet.org/data/interactive-maps-and-gis-data/>. StreamNet also maintains the NPCC Protected Areas, Subbasin Planning, and Hatchery Scientific Review Group data sets: <https://www.streamnet.org/services/technical-assistance-to-agencies-and-tribes/npsc-fish-wildlife-program/>.



StreamNet is funded by:	In support of:	A fisheries data project of:
 Bonneville Power Administration	 Northwest Power and Conservation Council	 Pacific States Marine Fisheries Commission

Entities currently represented in StreamNet’s Steering and Executive Committees

The CA Effort provides access to Pacific Northwest fish information that is standardized at the population-level by collaboratively and efficiently sharing HLIs to support reporting and decision-making by natural resource managers and regulators (Table 2). Participants of the CA Effort include fish biologists and data stewards from federal agencies, tribes, states, and tribal consortia who together ensure the data quality and flow. StreamNet PSMFC staff, with assistance from the PNAMP co-sponsor, also leads committees and teams that advance implementation of the CA Effort. More information on the current CA Effort, including the present 5-year plan and historical records, are accessible at <https://www.streamnet.org/data/coordinated-assessments/>. To view and download data from CAX, which is hosted by StreamNet, visit <https://cax.streamnet.org/>.

Approximately 75% of StreamNet funding supports partners’ data management activities within the four state agencies and the Colville Tribes. During calendar year 2019, spanning FY2019 and FY2020, StreamNet was subsidized by BPA and a NOAA Interjurisdictional Fisheries Award. StreamNet, during the last quarter of 2019 (FY2020), also funded three, one-year

subcontracts to improve data management (sharing capacity and reporting) with the Confederated Tribes and Bands of the Yakama Nation (YN), the Shoshone-Bannock Tribes, and the Confederated Tribes of Warm Springs.

Data Category	Available Data	Years	Records
Redd Counts	4,963 Trends	1901 – 2019	53,630
Fish Counts	438 Trends	1956 – 2018	2,273
Spawner Counts	5,099 Trends	1944 – 2018	37,488
Spawning Population Estimates	3,181 Trends	1901 – 2018	22,197
Dam / Weir Counts	5 05 Trends	1926 – 2019	13,997
Fish Abundance Estimates	128 Trends	1976 – 2018	530
Hatchery Returns	1,084 Trends	1906 – 2019	10,361
Freshwater Harvest	2,708 Trends	1894 – 2015	45,662
Protected Areas	32,997 Records	Not applicable (n/a)	n/a

Table 1: Cumulative total of 18,106 local fish data trends (and 186,138 records) by data category uploaded into the StreamNet Local Scale data system as of 12/31/2019.

Partner CAX HLI	Biomark	Colville Tribes	FPC	IDFG	ODFW	USFWS	WDFW	YN	Terraqua Inc.
Natural Origin Spawner Abundance		14		1,254	2,445	33	2,142	272	
Presmolt Abundance		49			89				23
Juvenile Outmigrants	31	12		741	315		358		
Smolt to Adult Return Rate		10	759		246	16	44		
Recruits per Spawner		10		984	2,232	13	302		
Proportionate Natural Influence							146		

Table 2: The 12,541 new records submitted to the Coordinated Assessments Exchange (CAX) system in 2019 of HLI data for Columbia River Basin and Oregon Coast salmon and steelhead populations. These new HLI records are summarized by CAX high level indicator (HLI) and by the entity providing the HLI data.

West Coast Groundfish Observer Program

During 2019, the **West Coast Groundfish Observer Program (WCGOP)** continued its efforts to collect data for West Coast groundfish fisheries management in collaboration with the National Oceanic Atmospheric Administration (NOAA) Fisheries. This was the 18th year that the program has deployed observers for various West Coast groundfish fisheries. The program remains adaptable in anticipation of revised data and scientific requirements for West Coast groundfish and other protected species. Observers compile technical, management, and other data through measurements of selected portions of catch and fishing gear; onboard interviews with vessel captains and crew; observations of fishing operations; and collection of biological samples. Additional statistics pertaining to protected species and species of concern (seabirds, marine mammals, sea turtles) are also documented.

Pacific States Marine Fisheries Commission (PSMFC) partnered with NOAA Fisheries to administer three, three-week trainings to instruct observers for field data collection. A total of 32 new observers were trained: 20 for the catch share fisheries (not including the at-sea hake fisheries) and 12 for the Non-Catch Share fisheries (NCS). Forty-seven experienced observers were briefed for reassignment: 41 for the catch share fisheries and six for the NCS fisheries. The At-Sea Hake Observer Program (ASHOP) catcher/processors and motherships component conducted three trainings that prepared 54 observers for deployment. The majority of catch share observers are also trained to serve as catch monitors through PSMFC's Catch Monitor Program (CMP) that provides dockside monitoring of catch share trip offloads. Observer-collected discard data for the catch share fishery is combined with CMP's landing data in NOAA Fisheries vessel account system.

PACIFIC STATES MARINE FISHERIES COMMISSION (PSMFC)

- PSMFC debriefers assure data quality through review of observer records and periodic in-person meetings with observers during the year.
- NCS observer efforts are organized by a PSMFC field coordinator who manages observer resources and coverage goals established for each fishery.
- PSMFC procures the gear, computers, and software used by the observers to complete sampling activities and data and report activities within the NOAA observer database.
- PSMFC, in conjunction with NOAA Fisheries, finalized the development of an electronic data collection system. This software enables on-deck tablet use for fishing activities (gear deployment and retrieval, tow and set durations, etc.) and catch data collection, improving the Program with enhanced data quality, more efficient data compilation and finalization, and elimination of transcription errors during data entry.

In 2019, WCGOP observers spent 5,329 days at sea: 2,780 in the catch share fisheries (excluding hake and Exempted Fishing Permit [EFP] trips), 50 days on at-sea hake vessels, 165 in the shoreside hake fishery, 2,676 on various EFP trips, 559 on Limited Entry trips, and 1,723 on open access vessels. ASHOP's observers spent 1,878 sea days (two employees per vessel) on catcher/processors and motherships. PSMFC employed ten, full-time staff (eight at WCGOP; two at ASHOP): debriefers, coordinators, a gear technician, a data analyst, and a program manager.

PACIFIC STATES MARINE FISHERIES COMMISSION

**FINANCIAL STATEMENTS AND
SUPPLEMENTARY INFORMATION**

YEAR ENDED JUNE 30, 2019

**PACIFIC STATES MARINE FISHERIES COMMISSION
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INDEPENDENT AUDITORS' REPORT

Board of Commissioners
Pacific States Marine Fisheries Commission
Portland, Oregon

Report on the Financial Statements

We have audited the accompanying financial statements of the commission-wide governmental activities, each major fund, and the aggregate remaining fund information of Pacific States Marine Fisheries Commission, as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the entity's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Board of Commissioners
Pacific States Marine Fisheries Commission

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the commission-wide governmental activities, each major governmental fund, and the aggregate remaining fund information of Pacific States Marine Fisheries Commission as of June 30, 2019, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 5 through 9 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

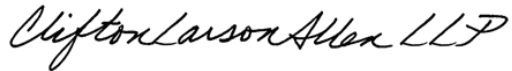
Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Pacific States Marine Fisheries Commission's basic financial statements. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, and is not a required part of the basic financial statements.

The schedule of expenditures of federal awards is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Board of Commissioners
Pacific States Marine Fisheries Commission

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated September 18, 2019, on our consideration of Pacific States Marine Fisheries Commission's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Pacific States Marine Fisheries Commission's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Pacific States Marine Fisheries Commission's internal control over financial reporting and compliance.



CliftonLarsonAllen LLP

Bellevue, Washington
September 18, 2019

**PACIFIC STATES MARINE FISHERIES COMMISSION
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEAR ENDED JUNE 30, 2019**

This discussion and analysis of the Pacific States Marine Fisheries Commission's (the Commission) financial performance provides an overview of the Commission's financial activities for the year ended June 30, 2019. Please read it in conjunction with the accompanying basic financial statements and notes to the financial statements.

Overview of the Financial Statements

This discussion and analysis is an introduction to the Commission's basic financial statements, which comprise three components: 1) Commission-wide financial statements, 2) governmental fund financial statements, and 3) notes to the basic financial statements. This report also contains other supplementary information in addition to the basic financial statements.

Commission-Wide Financial Statements (Reporting the Commission as a Whole)

The Commission-wide financial statements are designed to be similar to private sector businesses in that all Commission activities are consolidated. These statements combine fund financial resources with capital assets and long-term obligations.

The statement of net position presents information on all the Commission's assets and liabilities, with the difference between the two reported as net position. Over time, changes in net position may serve as a useful indicator of whether the financial position of the Commission is improving or deteriorating. Assets and liabilities are generally measured using current values. One notable exception is capital assets, which are stated at historical cost less an allowance for depreciation.

The statement of activities and change in net position presents information showing how the Commission's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying events giving rise to the change occur, regardless of when cash is received or paid.

This report also includes two schedules that reconcile the amounts reported in the governmental fund financial statements (modified accrual accounting) with activities on the Commission-wide statements (accrual accounting).

The following summarizes the impact of transitioning from modified accrual-to-accrual accounting:

- Capital assets used in Commission activities are not reported on governmental fund statements.
- Unless due and payable, long-term liabilities such as capital lease obligations, notes payable, and others, only appear as liabilities in the Commission-wide statements.
- Capital outlay spending results in capital assets on the Commission-wide statements and are depreciated over their estimated useful lives, but are reported as expenditures on the governmental fund statements.
- Repayment of debt principal decreases liabilities on the Commission-wide statements, but is reported as an expenditure on the governmental fund statements.
- Gains and losses from disposal of capital assets are reported on the Commission-wide statements, but the total proceeds from such disposals are reported as other financing sources on the governmental fund statements.

**PACIFIC STATES MARINE FISHERIES COMMISSION
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEAR ENDED JUNE 30, 2019**

Overview of the Financial Statements (Continued)

Fund Financial Statements (Reporting the Commission's Major Funds)

The fund financial statements provide information about the major individual funds. A fund is a fiscal and accounting entity with a self-balancing set of accounts that the Commission uses to keep track of specific sources of funding and spending for a particular purpose.

The Commission's basic services are reported in the funds, which focus on how money flows into and out of those funds and the balances left at year-end that are available for future spending. The fund financial statements provide a short-term view of the Commission's general operations and the basic services it provides. Fund information helps determine whether there are more or fewer financial resources that can be spent in the near future to finance the Commission's programs.

These funds are reported using modified accrual accounting, which measures cash and all other financial assets that can readily be converted to cash. The Commission's funds include the General, Grants and Contracts, and Proprietary funds.

Notes to the Basic Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the Commission-wide and fund financial statements. The notes to the financial statements are a required part of the basic financial statements.

Commission-Wide Condensed Financial Information

The following table reflects the condensed statement of net position at June 30:

	2019	2018
ASSETS		
Other Assets	\$ 21,691,238	\$ 17,316,582
Capital Assets	1,948,785	2,233,065
Total Assets	\$ 23,640,023	\$ 19,549,647
LIABILITIES		
Current Liabilities	\$ 10,285,285	\$ 6,006,731
Long-Term Liabilities	2,165,530	2,275,718
Total Liabilities	12,450,815	8,282,449
NET POSITION		
Invested in Capital Assets, Net of Related Debt	1,948,785	2,228,791
Unrestricted	9,240,423	9,038,407
Total Net Position	11,189,208	11,267,198
Total Liabilities and Net Position	\$ 23,640,023	\$ 19,549,647

The Commission's net position, referred to as unrestricted, may be used to meet the ongoing obligations of the Commission. The remaining net position reflects investment in capital assets used to provide services to programs; consequently, these assets are not available for future spending.

**PACIFIC STATES MARINE FISHERIES COMMISSION
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEAR ENDED JUNE 30, 2019**

Commission-Wide Condensed Financial Information (Continued)

The increase in other assets is primarily due to increased grant receivables. The most significant receivables relate to a fishery disaster relief program funded by the National Oceanic and Atmospheric Administration, which was awarded near year-end.

The increase in current liabilities is primarily due to an increase in accounts payable, which is also primarily attributable to the new fishery disaster relief program as the Commission uses the funds received to make relief payments to fisheries, fishermen, and tribes.

The following condensed financial information was derived from the Commission-wide statement of activities and change in net position and reflects how the Commission's net position changed during the fiscal year.

	<u>2019</u>	<u>2018</u>
REVENUE		
Grants and Contracts	\$ 88,943,949	\$ 61,901,417
General Revenue	159,455	108,742
Total Revenue	<u>89,103,404</u>	<u>62,010,159</u>
EXPENSES		
Fisheries Related Programs	89,181,346	61,802,669
Other Expenses	48	554
Total Expenses	<u>89,181,394</u>	<u>61,803,223</u>
CHANGE IN NET POSITION	(77,990)	206,936
Net Position - Beginning of Year	<u>11,267,198</u>	<u>11,060,262</u>
NET POSITION - END OF YEAR	<u>\$ 11,189,208</u>	<u>\$ 11,267,198</u>

The net position decreased by \$77,990 during the current fiscal year in comparison with an increase in the prior year of \$206,936.

The difference in net position is primarily due to capital outlays of \$872,236 in 2018 vs. \$471,232 in 2019. While these are treated as program expenditures on the governmental funds statements, the Commission-wide statements require depreciation over their estimated useful lives. Accordingly, capital outlays are being depreciated over a period of 5 years and depreciation will increase expenditures in subsequent accounting periods on the Commission-wide statements.

A significant factor in the increase of revenues and related expenditures was a new disaster relief program funded by the National Oceanic and Atmospheric Administration. Associated receipts and expenditures during 2019 were approximately \$25,600,000 and are expected to continue in future accounting periods.

**PACIFIC STATES MARINE FISHERIES COMMISSION
MANAGEMENT’S DISCUSSION AND ANALYSIS
YEAR ENDED JUNE 30, 2019**

Financial Analysis of the Commission’s Funds

General Fund and Grants and Contracts Fund

The focus of the Commission’s funds is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing the Commission’s financing requirements. In particular, the unrestricted fund balance may serve as a useful measure of the Commission’s net resources available for spending at the end of the fiscal year.

As the Commission completed the year, its general fund reported an unrestricted fund balance of \$9,240,423 as of June 30, 2019. This amount constitutes the unreserved fund balance, which is available for appropriation for the general purposes of the fund. The excess revenues of the special revenue fund (grants and contracts) are transferred to the general fund at the end of the year resulting in a zero fund balance at the end of the year. The Commission has no legal requirement for a budget, though budget estimates are prepared for the general fund. Certain contracts and grants have budget requirements, which must be monitored; however, these budgets are not program wide. Accordingly, budgetary information has not been included in the basic financial statements.

Proprietary Fund

The proprietary fund reported a cash balance at June 30, 2019, of \$2,437,563 for future payouts of vacation and sick leave liabilities to employees upon termination or retirement. During the fiscal year ended June 30, 2019, the cash balance decreased by \$25,061; \$45,417 from decreased accrued vacation leave offset by \$20,356 from increased accrued sick leave.

Capital Assets and Long-Term Debt

Capital Assets

The Commission’s investment in capital assets, net of accumulated depreciation, amounted to \$1,948,785 and includes a broad range of assets (see the table below). Depreciation charges for this fiscal year totaled \$755,513.

	2019	2018
Computers	\$ 666,822	\$ 905,644
Furniture and Office Equipment	21,129	27,811
Leasehold Improvements	12,430	33,689
Field and Scientific Equipment	1,114,757	1,087,711
Truck/Boat	133,647	178,210
Total	\$ 1,948,785	\$ 2,233,065

The additions to capital assets totaled \$471,232 for the year ended June 30, 2019. There are no planned future acquisitions of any significance.

Long-Term Debt

The Commission has encountered no problems in obtaining financing as needed. There was no new long-term debt issued during fiscal year 2019.

**PACIFIC STATES MARINE FISHERIES COMMISSION
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEAR ENDED JUNE 30, 2019**

Economic Expectations

The Commission receives the majority of its revenue from the administration of federal and state contracts and grants related to fisheries resources management. Funding has been stable and the Commission has not been notified of any significant decreases to future funding levels.

The National Oceanic and Atmospheric Administration (NOAA) has reached out to the Commission to administer \$116,742,053 of funds allocated for disasters that affected the West Coast and Alaska fishermen from 2014 to 2017. The Commission is working with states and tribes to develop spend plans for these disaster funds.

Requests for Information

This financial report is designed to provide a general overview of the Pacific States Marine Fisheries Commission's finances for all those with an interest in the Commission's finances. Questions concerning any of the information provided in this report or requests for additional information should be addressed to the Department of Finance, Accounting Division, 205 SE Spokane Street, Suite 100, Portland, Oregon 97202-6413.

PACIFIC STATES MARINE FISHERIES COMMISSION
STATEMENT OF NET POSITION
JUNE 30, 2019

	Governmental Activities
ASSETS	
CURRENT ASSETS	
Cash and Cash Equivalents	\$ 6,284,149
Receivables:	
Grants and Contracts	11,208,729
Other	4,031,760
Prepaid Expenses	166,600
Total Current Assets	21,691,238
NONCURRENT ASSETS	
Capital Assets, Net of Accumulated Depreciation	1,948,785
Total Noncurrent Assets	1,948,785
Total Assets	\$ 23,640,023
LIABILITIES AND NET POSITION	
CURRENT LIABILITIES	
Accounts Payable	\$ 8,869,000
Payroll Liabilities	730,058
Compensated Absences, Current Portion	272,033
Unearned Rent	287,919
Unearned Revenues	126,275
Total Current Liabilities	10,285,285
LONG-TERM LIABILITIES (Due in More than One Year)	2,165,530
Total Liabilities	12,450,815
NET POSITION	
Investment in Capital Assets, Net of Related Debt	1,948,785
Unrestricted	9,240,423
Total Net Position	\$ 11,189,208

See accompanying Notes to Financial Statements.

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**PACIFIC STATES MARINE FISHERIES COMMISSION
STATEMENT OF ACTIVITIES AND CHANGE IN NET POSITION
YEAR ENDED JUNE 30, 2019**

	Governmental Activities
PROGRAM REVENUES	
Grants and Contracts	\$ 88,943,949
PROGRAM EXPENSES	
Fisheries Management:	
Personal Services	27,236,209
Fishery Disaster Relief	25,578,749
Materials and Services	34,278,343
Sport Rewards	1,332,532
Interest Expense	48
Depreciation	755,513
Total Program Expenses	89,181,394
NET PROGRAM REVENUES	(237,445)
GENERAL REVENUES	
State Dues	106,000
Interest and Other Income	53,455
Total General Revenues	159,455
CHANGE IN NET POSITION	(77,990)
Net Position - Beginning of Year	11,267,198
NET POSITION - END OF YEAR	\$ 11,189,208

See accompanying Notes to Financial Statements.

(11)

PACIFIC STATES MARINE FISHERIES COMMISSION
BALANCE SHEET — GOVERNMENTAL FUNDS
JUNE 30, 2019

ASSETS	<u>General</u>	<u>Grants and Contracts</u>	<u>Total</u>
Cash and Cash Equivalents	\$ 3,846,586	\$ -	\$ 3,846,586
Due from Other Funds	11,208,724	126,270	11,334,994
Receivables:			
Grants and Contracts	-	11,208,729	11,208,729
Other	4,031,760	-	4,031,760
Prepaid Expenses	166,600	-	166,600
	<u>19,253,670</u>	<u>11,334,999</u>	<u>30,588,669</u>
Total Assets	\$ 19,253,670	\$ 11,334,999	\$ 30,588,669
LIABILITIES AND FUND BALANCES			
LIABILITIES			
Due to Other Funds	\$ 126,270	\$ 11,208,724	\$ 11,334,994
Accounts Payable	8,869,000	-	8,869,000
Payroll Liabilities	730,058	-	730,058
Unearned Rent	287,919	-	287,919
Unearned Revenues	-	126,275	126,275
Total Liabilities	<u>10,013,247</u>	<u>11,334,999</u>	<u>21,348,246</u>
FUND BALANCES			
Nonspendable Fund Balances	166,600	-	166,600
Fund Balances - Unassigned	<u>9,073,823</u>	<u>-</u>	<u>9,073,823</u>
Total Fund Balances	<u>9,240,423</u>	<u>-</u>	<u>9,240,423</u>
Total Liabilities and Fund Balances	\$ 19,253,670	\$ 11,334,999	\$ 30,588,669

See accompanying Notes to Financial Statements.

(12)

**PACIFIC STATES MARINE FISHERIES COMMISSION
RECONCILIATION OF THE GOVERNMENTAL FUNDS BALANCE SHEET
TO THE STATEMENT OF NET POSITION
JUNE 30, 2019**

Fund Balances - Governmental Funds	\$ 9,240,423
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Amounts reported for governmental activities in the statement of net position are different because:

Capital assets used in governmental activities are not financial resources and, therefore, are not reported in governmental funds:

Capital Assets	6,986,503
Less: Accumulated Depreciation	<u>(5,037,718)</u>
Total	<u>1,948,785</u>
 Net Position	 <u>\$ 11,189,208</u>

See accompanying Notes to Financial Statements.

(13)

**PACIFIC STATES MARINE FISHERIES COMMISSION
STATEMENT OF REVENUES, EXPENDITURES, AND CHANGE IN
FUND BALANCES — GOVERNMENTAL FUNDS
YEAR ENDED JUNE 30, 2019**

	General	Grants and Contracts	Total
REVENUES			
Grants and Contracts	\$ -	\$ 88,943,949	\$ 88,943,949
State Dues	106,000	-	106,000
Lease Income	-	-	-
Interest and Other Income	53,455	-	53,455
Total Revenues	<u>159,455</u>	<u>88,943,949</u>	<u>89,103,404</u>
EXPENDITURES			
Current:			
Personal Services	2,815,627	24,420,582	27,236,209
Fishery Disaster Relief	-	25,578,749	25,578,749
Materials and Services	1,282,626	33,007,057	34,289,683
Sport Rewards	-	1,332,532	1,332,532
Capital Outlay	6,199	465,033	471,232
Travel	-	-	-
Cost Share	36,147	(36,147)	-
Debt Service:			
Principal	-	4,275	4,275
Interest	-	48	48
Total Expenditures	<u>4,140,599</u>	<u>84,772,129</u>	<u>88,912,728</u>
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	(3,981,144)	4,171,820	190,676
OTHER FINANCING SOURCES (USES)			
Gain on Sale of Assets	11,340	-	11,340
Indirect Cost/Administration Transfers In	4,171,820	-	4,171,820
Indirect Cost/Administration Transfers Out	-	(4,171,820)	(4,171,820)
Total Other Financing Sources (Uses)	<u>4,183,160</u>	<u>(4,171,820)</u>	<u>11,340</u>
EXCESS OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER SOURCES	202,016	-	202,016
Fund Balance - Beginning of Year	<u>9,038,407</u>	<u>-</u>	<u>9,038,407</u>
FUND BALANCE - END OF YEAR	<u>\$ 9,240,423</u>	<u>\$ -</u>	<u>\$ 9,240,423</u>

See accompanying Notes to Financial Statements.

(14)

**PACIFIC STATES MARINE FISHERIES COMMISSION
RECONCILIATION OF THE GOVERNMENTAL FUNDS STATEMENT OF REVENUES,
EXPENDITURES, AND CHANGE IN FUND BALANCES TO THE STATEMENT OF
ACTIVITIES AND CHANGE IN NET POSITION
YEAR ENDED JUNE 30, 2019**

Net Change in Fund Balances - Total Governmental Funds \$ 202,016

Amounts reported for governmental activities in the statement of revenues, expenditures, and change in fund balances are different because:

Governmental funds report capital outlays as expenditures. However, in the statement of revenues, expenditures, and change in fund balances, the cost of those assets is capitalized and depreciated over their estimated useful lives.

Capital Outlay	471,232
Less: Current Year Depreciation	(755,513)
Total	(284,281)

Repayment of capital lease principal is an expenditure in the governmental funds, but the repayment of principal reduces long-term liabilities in the statement of net position and the amount representing interest is included as an expense in the statement of revenues, expenditures, and change in fund balances:

Capital Lease Payments	4,275
Change in Net Position	\$ (77,990)

See accompanying Notes to Financial Statements.

(15)

**PACIFIC STATES MARINE FISHERIES COMMISSION
STATEMENT OF NET POSITION — PROPRIETARY FUNDS
JUNE 30, 2019**

	Governmental Activities- Internal Service Fund Type <hr/> Compensated Absences
ASSETS	
Cash and Cash Equivalents	<u>\$ 2,437,563</u>
LIABILITIES	
Accrued Compensated Absences	<u>2,437,563</u>
NET POSITION	
Unrestricted	<u><u>\$ -</u></u>

See accompanying Notes to Financial Statements.

(16)

**PACIFIC STATES MARINE FISHERIES COMMISSION
STATEMENT OF REVENUES, EXPENSES, AND CHANGE IN NET POSITION —
PROPRIETARY FUNDS
YEAR ENDED JUNE 30, 2019**

	Governmental Activities- Internal Service Fund Type <u>Compensated Absences</u>
OPERATING REVENUES	
Charges for Services	\$ 341,327
OPERATING EXPENSES	
Compensated Absences Expense	<u>341,327</u>
OPERATING INCOME	-
Net Position - Beginning of Year	<u>-</u>
NET POSITION - END OF YEAR	<u><u>\$ -</u></u>

See accompanying Notes to Financial Statements.

(17)

**PACIFIC STATES MARINE FISHERIES COMMISSION
STATEMENT OF CASH FLOWS — PROPRIETARY FUNDS
YEAR ENDED JUNE 30, 2019**

	Governmental Activities- Internal Service Fund Type <u>Compensated Absences</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Charges for Services	\$ 341,327
Cash Paid to Employees for Services	<u>(366,388)</u>
Net Cash Used by Operating Activities	<u>(25,061)</u>
NET CHANGE IN CASH AND CASH EQUIVALENTS	(25,061)
Cash and Cash Equivalents - Beginning of Year	<u>2,462,624</u>
CASH AND CASH EQUIVALENTS - END OF YEAR	<u><u>\$ 2,437,563</u></u>
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating Income	\$ -
Adjustments to Reconcile Operating Income to Net Cash Provided by Operating Activities:	
Changes in Assets and Liabilities:	
Increase in Compensated Absences	<u>(25,061)</u>
Net Cash Provided by Operating Activities	<u><u>\$ (25,061)</u></u>

See accompanying Notes to Financial Statements.

PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations

The Pacific States Marine Fisheries Commission (the Commission) was authorized in 1947 by an act of the Congress of the United States of America granting consent and approval to an interstate compact. The Commission is composed of five member states: Alaska, California, Idaho, Oregon, and Washington. While the Commission has no regulatory or management authority, it was created to provide collective participation by states to work on mutual problems of fisheries resource management. The Commission's principal offices are located in Portland, Oregon.

Financial Reporting Entity

The Commission is a quasi-governmental corporation governed by a 15-member board. As required by accounting principles generally accepted in the United States of America, these basic financial statements present the Commission (the primary government) and any component units. Component units, as established by Governmental Accounting Standards Board (GASB) Statement No. 14, are separate organizations that are included in the Commission's reporting entity because of the significance of their operational or financial relationships with the Commission. The Commission has no reportable component units.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Basis of Accounting and Measurement Focus

The accounts of the Commission are organized on the basis of funds, each of which is considered a separate accounting entity. The operations of each fund are accounted for with a set of self-balancing accounts that comprise its assets, liabilities, fund equity, revenues, and expenditures or expenses, as appropriate. Governmental resources are allocated to and accounted for in individual funds based upon the purpose for which they are to be spent and the means by which spending activities are controlled.

Commission-Wide Financial Statements

The Commission-wide financial statements include the statement of net position and statement of activities and change in net position. These statements present summaries of governmental activities for the Commission.

These statements are presented on an "economic resources" measurement focus and the accrual basis of accounting. Accordingly, all of the Commission's assets and liabilities, including capital assets and long-term liabilities are included in the accompanying statement of net position. The statement of activities and change in net position presents changes in net position. Under the accrual basis of accounting, revenues are recognized in the period in which they are earned, while expenses are recognized in the period in which the liability is incurred.

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Commission-Wide Financial Statements (Continued)

Grants and contracts revenue are considered program revenues by the Commission.

Certain eliminations have been made as prescribed by GASB Statement No. 34 in regard to interfund activities, payables, and receivables. All interfund balances in the statement of net position have been eliminated.

Governmental Fund Financial Statements

Governmental fund financial statements include a balance sheet and a statement of revenues, expenditures, and change in fund balances for the following governmental funds:

General Fund – This fund accounts for all financial resources and uses which are not included in the special revenue fund. Resources of the general fund are typically not restricted for use within specific projects. The fund’s principal revenue sources are indirect costs charged to the special revenue fund and state contributions.

Special Revenue Fund (Grants and Contracts) – This fund accounts for revenue and expenditures restricted for specific projects or programs. The fund’s principal revenue sources are grants and contracts from various federal and member state agencies.

All governmental funds are accounted for on a spending or current financial resources measurement focus and the modified accrual basis of accounting. Accordingly, only current assets and current liabilities are included on the fund balance sheet. The statements of revenues, expenditures, and change in fund balances presents increases (revenues and other financing sources) and decreases (expenditures and other financing uses) in net current position.

Under the modified accrual basis of accounting, revenues are recognized in the accounting period in which they become both measurable and available to finance expenditures of the current period. Accordingly, revenues are recorded when received in cash, except that revenues subject to accrual (generally 60 days after year-end) are recognized when due. Most revenue sources have been treated as susceptible to accrual by the Commission as the amounts due are known at year-end. Interest revenue and some other miscellaneous revenues are not susceptible to accrual because they are usually not measurable until received in cash. Expenditures are recorded in the accounting period in which the related fund liability is incurred.

Unavailable revenues arise when potential revenues do not meet both the “measurable” and “available” criteria for recognition in the current period. Unearned revenues also arise when the Commission receives resources before it has a legal claim to them, as when grant monies are received prior to incurring qualifying expenditures. In subsequent periods, when both revenue recognition criteria are met or when the government has a legal claim to the resources, the unearned revenue is removed from the balance sheet and revenue is recognized.

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Governmental Fund Financial Statements (Continued)

Reconciliation of the governmental fund financial statements to the Commission-wide financial statements is provided to explain the differences created by the integrated approach of GASB Statement No. 34.

Proprietary Funds

Proprietary funds account for the operations that are financed and operated in a manner similar to private business, where the determination of operating income, change in net position, financial position, and cash flows is necessary. These funds utilize the accrual basis of accounting.

Internal Service Fund

Internal service funds are used to account for goods and services provided by one department or agency to other departments or agencies of the Commission on a cost reimbursement basis. The internal service fund includes the compensated absences balance of the Commission.

Fund Equity

GASB issued Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions* (GASB No. 54), effective for reporting periods after June 15, 2011. The reporting standard establishes a hierarchy for fund balance classifications and the constraints imposed on the uses of those resources.

GASB No. 54 provides for two major types of fund balances, which are nonspendable and spendable. Nonspendable fund balances are balances that cannot be spent because they are not expected to be converted to cash or they are legally or contractually required to remain intact. Examples of this classification are prepaid items, inventories, and principal (corpus) of an endowment fund.

In addition to the nonspendable fund balance, GASB No. 54 has provided a hierarchy of spendable fund balances, based on a hierarchy of spending constraints.

- Restricted – fund balances that are constrained by external parties, constitutional provisions enabling legislation.
- Committed – fund balances that contain self-imposed constraints of the Commission from its highest level of decision-making authority.
- Assigned – fund balances that contain self-imposed restraints of the Commission to be used for a particular purpose.
- Unassigned – fund balances of the Commission that are not constrained for any particular purpose.

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Fund Equity (Continued)

When an expenditure is incurred for purposes for which both restricted and unrestricted fund balances are available, it is the Commission’s policy to use restricted first, then unrestricted fund balances. When an expenditure is incurred for purposes for which committed, assigned, and unassigned amounts are available, it is the Commission’s policy to use committed first, then assigned, and finally unassigned amounts.

Budgets

The Commission has no legal requirement for a budget, though budget estimates are prepared for the general fund. Certain contracts and grants have budget requirements which must be monitored; however, these budgets are not program-wide. Accordingly, budgetary information has not been included in the basic financial statements.

Grants

Unreimbursed grant expenditures due from grantor agencies are recorded in the Commission-wide financial statements as receivables and revenues. Cash received from grantor agencies in excess of related grant expenditures is recorded as a liability, Unearned Revenues, in the statement of net position.

Capital Assets, Including Equipment Leased Under Capital Leases

Capital assets are recorded at original cost or estimated original cost in the statement of net position. Acquisitions of general capital assets are recorded as expenditures at the major program levels in governmental fund types at the time of purchase. Maintenance, repairs, and equipment replacements of a routine nature are charged to expenditures as incurred and are not capitalized. Upon disposal of capital assets, the related cost or estimated cost and any proceeds from such disposal are accounted for as other financing sources. At their inception, capitalized leases are recorded as capital assets at the net present value of future minimum lease payments to be made.

The portion of the payment applicable to principal, determined by using interest rates implicit in the lease, is reported as a reduction of the capitalized lease obligation.

Depreciation is recorded in the statement of activities and change in net position. The statement of net position reflects the cost of capital assets net of depreciation and is computed on the straight-line basis over the following estimated useful lives. Assets acquired by capital lease are amortized over their estimated useful lives using the straight-line basis. Amortization is included in depreciation expense in these financial statements.

Buildings and Improvements	30 Years
Computers, Furniture, Office, and Field Equipment	5 to 10 Years

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Capital Assets, Including Equipment Leased Under Capital Leases (Continued)

Capital assets include assets which were purchased with funds from various federal and state agencies. Those funding agencies retain residual interests in certain assets, which are exercised upon disposal.

Cash and Investments

The Commission maintains its cash either in bank deposit accounts that are insured by the Federal Deposit Insurance Corporation (FDIC) up to a limit of \$250,000 per depositor or in certain noninterest bearing accounts that are fully insured by the FDIC. The Commission had \$23,263,384 in cash that was exposed to uninsured deposit risk at June 30, 2019. To reduce its overall exposure, the Commission holds its funds in banks that participate in the Oregon Public Funds Collateralization Program. This program provides additional protection for public funds in Oregon, but does not guarantee the funds fully. The Commission has not experienced any losses in such accounts, and believes it is not exposed to any significant credit risk on cash.

Grants and Contracts Receivable

The majority of receivables are comprised of claims for reimbursement of costs under various federal and state grant programs. The Commission considers all receivables to be substantially collectible. Accordingly, no allowance for doubtful accounts has been established.

Accrued Compensated Absences

Vacation pay is vested when earned. Employees earn annual leave based on length of service to the Commission. Unpaid vested vacation and 50% of vested sick pay that is expected to be paid with current resources is shown as accrued compensated absences payable on the statement of net position and recorded as expenditures when earned.

Unearned Rent

The Commission recognized escalating rent provisions on straight-line basis over the lease term.

Retirement Plans

Commission employees meeting eligibility requirements are participants in a defined contribution pension plan. Contributions to this plan are made on a current basis as required by the plan and are charged to expenditures as the related liabilities are incurred.

Employees of the Commission are also allowed to participate in a Northwest Plan Services, Inc. IRC 457 Plan. The plan permits employees to voluntarily defer a portion of their compensation. The Commission makes no contributions to this plan. Northwest Plan Services, Inc., as the plan administrator, retains custody and fiduciary responsibility for all funds deposited into the plan.

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Interfund Transactions

Activity between funds represent short-term receivables or payables in the normal course of the Commission’s operations or are reimbursements for administrative expenses that are outstanding at the end of the fiscal year. All outstanding balances are reported as either due to or due from other funds in the fund financial statements.

NOTE 2 CASH AND INVESTMENTS

The Commission maintains a cash pool that is available for use by all funds. Each fund type’s portion of this pool is reported on the statement of net position as cash and investments.

Cash and investments (recorded at cost) consisted of the following at June 30, 2019:

Deposits with Financial Institutions:	
Demand Deposits	\$ 926,941
Money Market	308,949
Savings	<u>5,048,259</u>
Total Cash and Cash Equivalents	<u>\$ 6,284,149</u>

Custodial Credit Risk – Deposits. Custodial credit risk is the risk that in the event of a bank failure, the Commission’s deposits may not be returned to it. The Commission does not have a deposit policy for custodial credit risk. To reduce its overall exposure, the Commission holds its funds in banks that participate in the Oregon Public Funds Collateralization Program. This program provides additional protection for public funds in Oregon, but does not guarantee the funds fully. The Commission has not experienced any losses in such accounts, and believes it is not exposed to any significant credit risk on cash.

The Commission’s bank balance was exposed to custodial credit risk as follows at June 30, 2019:

Uninsured and Uncollateralized	<u>\$ 23,263,384</u>
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PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019

NOTE 3 CAPITAL ASSETS

Capital asset activity was as follows at June 30, 2019:

	Balance June 30, 2018	Additions	Deletions	Transfers	Balance June 30, 2019
Capital Assets:					
Computers	\$ 2,120,887	\$ 40,606	\$ 94,164	\$ -	\$ 2,067,329
Furniture and Office Equipment	176,014	-	34,393	-	141,621
Leasehold Improvements	407,971	-	-	-	407,971
Field and Scientific Equipment	3,084,162	409,680	-	-	3,493,842
Truck/Boat	882,674	20,946	27,880	-	875,740
Total Capital Assets	<u>6,671,708</u>	<u>471,232</u>	<u>156,437</u>	<u>-</u>	<u>6,986,503</u>
Accumulated Depreciation:					
Computers	1,215,243	279,428	94,164	-	1,400,507
Furniture and Office Equipment	148,202	6,683	34,393	-	120,492
Leasehold Improvements	374,282	21,259	-	-	395,541
Field and Scientific Equipment	1,996,451	382,634	-	-	2,379,085
Truck/Boat	704,464	65,509	27,880	-	742,093
Total Accumulated Depreciation	<u>4,438,642</u>	<u>755,513</u>	<u>156,437</u>	<u>-</u>	<u>5,037,718</u>
Total Assets	<u>\$ 2,233,066</u>	<u>\$ (284,281)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 1,948,785</u>

NOTE 4 LONG-TERM LIABILITIES**Compensated Absences**

The following is a schedule of the compensated absences as of June 30, 2019:

Balance - Beginning	\$ 2,462,624
Incurred	341,327
Retired	(366,388)
Balance - Ending	<u>\$ 2,437,563</u>
Due Within One Year	<u>\$ 272,033</u>
Long-Term Portion	<u>\$ 2,165,530</u>

Capital Lease Obligation

The following is a schedule of the capital lease obligations as of June 30, 2019:

Balance - Beginning	\$ 4,274
Additions	-
Payments	(4,274)
Balance - Ending	<u>\$ -</u>

The total interest incurred for the year ended June 30, 2019 was \$48.

PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019

NOTE 5 PENSION PLAN

The Commission sponsors the Pacific States Marine Fisheries Commission Employees Pension Plan (the Plan), which is a defined contribution pension plan.

A defined contribution pension plan provides pension benefits in return for services rendered, provides an individual account for each participant, and specifies how contributions to the individual's account are to be determined instead of specifying the amount of benefits the individual is to receive. Under a defined contribution pension plan, the benefits a participant will receive depend solely on the amount contributed to the participant's account, the returns earned on investments on those contributions, and forfeitures of other participant's benefits that may be allocated to such participant's account.

Employees must meet eligibility requirements based upon hours and length of service to participate in the Plan. The Commission is required to contribute an amount equal to 14% of the eligible employee's gross earnings. Vesting is based on a schedule that provides 100% vesting at the end of five years of qualified employment. An employee who leaves the employment of the Commission is entitled to his or her vested interest in the Plan.

Forfeitures are used to reduce future contributions. For the year ended June 30, 2019, the Commission contributed \$1,952,499 to the Plan, net of forfeitures. There were 383 participants in the Plan at June 30, 2019.

NOTE 6 POSTEMPLOYMENT HEALTH PLAN

The Commission sponsors a Postemployment Health Plan (PEHP), which helps participants pay for certain qualified medical expenses after their retirement or termination. Once an employee has qualified to be in the pension plan they can participate in the PEHP. The PEHP has two individual accounts: 1) Universal Reimbursement Account, in which the Commission contributes a fixed amount (\$10) each month for each eligible participant; and 2) Insurance Premium Reimbursement Account, which is funded at termination or retirement with a portion of accrued sick leave. To be eligible for the second account, the employee must be 100% vested in the Commission Pension Plan and have accrued sick leave at termination. Employees are responsible for directing their PEHP contributions among the various funds selected by the plan administrator. The participant's account is passed on to a spouse and/or dependents if the participant were to die. As of June 30, 2019, there were 415 participants in the plan, and the Commission contributed \$84,806 into the plan. The liability increased \$20,356 to an ending balance of \$930,119 as of June 30, 2019. This is included in the compensated absences liability (see Note 4).

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2019**

NOTE 7 RISK MANAGEMENT

The Commission is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees, and natural disasters. The Commission purchases commercial insurance to minimize its exposure to these risks. Settled claims have not exceeded this commercial coverage for any of the past three years.

NOTE 8 COMMITMENTS AND CONTINGENCIES

As discussed in Note 1, the Commission holds capital assets for which granting agencies, principally federal agencies, have residual interests. The granting agencies, at their discretion upon disposition of these assets, are entitled to possession of the assets or the proceeds from their sale.

Substantially all amounts received or receivable from grantor agencies are subject to audit and adjustment by grantor agencies, principally the federal government. Any disallowed claims, including amounts already collected, may constitute a liability of the applicable funds. The amount, if any, of expenditures which may be disallowed by the grantor cannot be determined at this time, although the Commission's management expects such amounts, if any, to be immaterial.

NOTE 9 OPERATING LEASES

The Commission, as lessee, leases office space, vehicles, and equipment under various operating leases. The total amount expended under such leases was \$664,110 for the year ended June 30, 2019.

Future minimum lease payments for the noncancellable leases with initial or remaining lease terms of one year or more are as follows:

<u>Year Ending June 30,</u>	<u>Amount</u>
2020	\$ 615,257
2021	608,849
2022	595,868
2023	550,090
2024	457,793
Thereafter	149,947
Total	<u>\$ 2,977,804</u>



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INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

Board of Commissioners
Pacific States Marine Fisheries Commission
Portland, Oregon

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the commission wide governmental activities, each major fund, and the aggregate remaining fund information of Pacific States Marine Fisheries Commission (the Commission), as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise Pacific States Marine Fisheries Commission's basic financial statements, and have issued our report thereon dated September 18, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Commission's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control. Accordingly, we do not express an opinion on the effectiveness of the Commission's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that have not been identified. We did identify a certain deficiency in internal control, described in the accompanying Schedule of Findings and Questioned Costs as item 2019-001 that we consider to be a material weakness.



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Board of Commissioners
Pacific States Marine Fisheries Commission

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Commission's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Pacific States Marine Fisheries Commission's Response to Findings

The Commission's response to the findings identified in our audit is described in the accompanying Schedule of Findings and Questioned Costs. The Commission's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



CliftonLarsonAllen LLP

Bellevue, Washington
September 18, 2019



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INDEPENDENT AUDITORS' REPORT ON COMPLIANCE FOR EACH MAJOR FEDERAL PROGRAM AND REPORT ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM GUIDANCE

Board of Commissioners
Pacific States Marine Fisheries Commission
Portland, Oregon

Report on Compliance for Each Major Federal Program

We have audited Pacific States Marine Fisheries Commission's (the Commission's) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the Commission's major federal programs for the year ended June 30, 2019. Pacific States Marine Fisheries Commission's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal programs.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for each of the Commission's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Commission's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the Commission's compliance.

Opinion on Each Major Federal Program

In our opinion, Pacific States Marine Fisheries Commission complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2019.



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Pacific States Marine Fisheries Commission

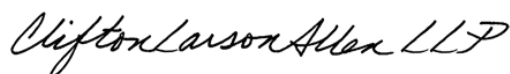
Report on Internal Control Over Compliance

Management of the Commission is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Commission's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Commission's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.



CliftonLarsonAllen LLP

Bellevue, Washington
September 18, 2019

**PACIFIC STATES MARINE FISHERIES COMMISSION
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED JUNE 30, 2019**

Federal Grantor/Program or Cluster Title	Federal CFDA Number	Pass-Through Organization (From)	Pass-Through Identifying Number	Total Federal Expenditures	Passed Through (to) Subrecipient
National Oceanic and Atmospheric Administration					
Bipartisan Budget Act of 2018	11.022	Direct		\$ 25,584,898	\$ 9,343,028
	11.022 Total			<u>25,584,898</u>	<u>9,343,028</u>
Total National Oceanic and Atmospheric Administration				<u>25,584,898</u>	<u>9,343,028</u>
U.S. Department of Commerce (NOAA)					
Interjurisdictional Fisheries Act of 1986	11.407	Direct		810,357	283,556
	11.407 Total			<u>810,357</u>	<u>283,556</u>
Columbia River Fisheries Development Program	11.436	Direct		999,123	979,697
	11.436 Total			<u>999,123</u>	<u>979,697</u>
Pacific Fisheries Data Program	11.437	Direct		22,554,177	6,888,875
	11.437 Total			<u>22,554,177</u>	<u>6,888,875</u>
Pacific Coast Salmon Recovery Pacific Salmon Treaty Program	11.438	California Department of Fish and Wildlife	P1596008	59,651	-
	11.438	California Department of Fish and Wildlife	P1850904	145	-
	11.438	California Department of Fish and Wildlife	P1510507	1,197	-
	11.438	California Department of Fish and Wildlife	P1550013	4,130	-
	11.438	California Department of Fish and Wildlife	P1610501	2,556	-
	11.438	California Department of Fish and Wildlife	P1510551	6,462	-
	11.438	California Department of Fish and Wildlife	P1550011	1,534	-
	11.438	California Department of Fish and Wildlife	P1530409	5,507	-
	11.438	California Department of Fish and Wildlife	P1810502	70,455	-
	11.438 Total			<u>151,637</u>	<u>-</u>
Marine Mammal Data Program	11.439	Direct		421,114	316,757
	11.439 Total			<u>421,114</u>	<u>316,757</u>
Regional Fishery Management Councils	11.441	PAC Fishery Management Council	05-18	21,354	-
	11.441	PAC Fishery Management Council	05-19	40,041	-
	11.441	N PAC Fish Management Council	2015-4	-	-
	11.441	N PAC Fish Management Council	2016-4	-	-
	11.441	N PAC Fish Management Council	NPFMC 1137	36,732	-
	11.441	N PAC Fish Management Council	2017-04	6,193	-
	11.441	N PAC Fish Management Council	2018-4	38,871	-
	11.441	N PAC Fish Management Council	2019-4	-	-
	11.441	PAC Fishery Management Council	PSMFC02-EPORTAL	9,875	-
	11.441 Total			<u>153,066</u>	<u>-</u>
Unallied Industry Projects	11.452	Direct		2,229,039	2,203,857
	11.452 Total			<u>2,229,039</u>	<u>2,203,857</u>

**PACIFIC STATES MARINE FISHERIES COMMISSION
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS (CONTINUED)
YEAR ENDED JUNE 30, 2019**

Federal Grantor/Program or Cluster Title	Federal CFDA Number	Pass-Through Organization (From)	Pass-Through Identifying Number	Total Federal Expenditures	Passed Through (to) Subrecipient
U.S. Department of Commerce (NOAA) (Continued)					
Unallied Science Program	11.472	Direct	NA16NMF4720287	\$ 39,371	\$ -
	11.472	Direct	NA17NMF4720266	91,540	-
	11.472	Direct	NA17NMF4720267	103,132	-
	11.472	Direct	NA18NMF4720007	320,205	254,257
	11.472	Direct	NA18NMF4720283	15,205	-
	11.472	Direct	NA18NMF4720285	14,570	-
	11.472	North Pacific Research Board	NPRB-1804	39,414	-
	11.472	North Pacific Research Board	NPRB-1816	61,476	-
	11.472 Total			<u>684,913</u>	<u>254,257</u>
Atlantic Coastal Fisheries Cooperative Management Act	11.474	Atlantic States Marine Fish Commission	ASMFC 17-1002	169,140	141,434
	11.474 Total			<u>169,140</u>	<u>141,434</u>
Total U.S. Department of Commerce				<u>28,172,566</u>	<u>11,068,433</u>
U.S. Department of the Interior					
Central Valley Project Improvement Act, Title XXXIV	15.512	Bureau of Reclamation	R14AP00125	1,297,827	-
	15.512	Bureau of Reclamation	R16AC00149	1,079,289	-
	15.512	Bureau of Reclamation	R18AP00009	135,806	-
	15.512 Total			<u>2,512,922</u>	<u>-</u>
Fish and Wildlife Cluster					
Sport Fish Restoration	15.605	US Fish and Wildlife Service	F17AP00144	13,652	-
	15.605	US Fish and Wildlife Service	F19AP00031	19,087	-
	15.605	US Fish and Wildlife Service	F18AP00131	171,873	50,000
	15.605 Total			<u>204,612</u>	<u>50,000</u>
Fish and Wildlife Management Assistance	15.608	US Fish and Wildlife Service	F14AP00903	72,095	16,881
	15.608	US Fish and Wildlife Service	F15AC00947	288,036	-
	15.608	US Fish and Wildlife Service	F15AP00731	8,425	-
	15.608	US Fish and Wildlife Service	F16AC00318	41,912	-
	15.608	US Fish and Wildlife Service	F16AC00608	203,464	98,595
	15.608	US Fish and Wildlife Service	F16AP00056	-	-
	15.608	US Fish and Wildlife Service	F16AP00876	72,759	-
	15.608	US Fish and Wildlife Service	F17AC00418	31,881	29,100
	15.608	US Fish and Wildlife Service	F17AP00258	225,000	-
	15.608	US Fish and Wildlife Service	F17AP00750	17,558	-
	15.608	US Fish and Wildlife Service	F17AP00757	59,421	-
	15.608	US Fish and Wildlife Service	F18AC00519	70,200	-
	15.608	US Fish and Wildlife Service	F18AP00231	64,558	-
	15.608	US Fish and Wildlife Service	F18AP00682	28,156	-
	15.608	US Fish and Wildlife Service	F18AP00832	26,281	-
	15.608 Total			<u>1,209,746</u>	<u>144,576</u>

**PACIFIC STATES MARINE FISHERIES COMMISSION
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS (CONTINUED)
YEAR ENDED JUNE 30, 2019**

Federal Grantor/Program or Cluster Title	Federal CFDA Number	Pass-Through Organization (From)	Pass-Through Identifying Number	Total Federal Expenditures	Passed Through (to) Subrecipient
U.S. Department of the Interior (Continued)					
Fish and Wildlife Management Assistance	15.628	National Fish Habitat Partnership	F19AP00105	\$ -	\$ -
	15.628 Total			-	-
Central Valley Project Improvement Act (CVPIA)	15.648	US Fish and Wildlife Service	F14AC00524	105,624	-
	15.648	US Fish and Wildlife Service	F16AC00127	71,682	-
	15.648	US Fish and Wildlife Service	F17AP00361	87,985	-
	15.648 Total			265,291	-
Lower Snake River Compensation Plan	15.661	US Fish and Wildlife Service	F16AC00045	338,683	-
	15.661	US Fish and Wildlife Service	F16AC00046	464,467	-
	15.661 Total			803,150	-
National Fish and Wildlife Foundation	15.663	National Fish Wildlife Foundation	0208.18.060476	8,504	-
	15.663 Total			8,504	-
Total U.S. Department of the Interior				5,004,225	194,576
Environmental Protection Agency - Office of Environmental Information					
Puget Sound Action Agenda: Technical Investigations and Implementation Assistance Program	66.123	University of Washington	UWSC10379	57,224	-
	66.123 Total			57,224	-
Total Environmental Protection Agency - Office of Environmental Information				57,224	-
Department of Energy					
Bonneville Power Administration - Environment, Fish and Wildlife	81.999	Direct		14,583,048	5,615,778
	81.999	WA Department of Fish and Wildlife	18-12092	21,236	-
	81.999	CRITFC	V18-06	46,395	-
	81.999	CRITFC	V19-24	8,699	-
	81.999 Total			14,659,378	5,615,778
Total Department of Energy				14,659,378	5,615,778
Total Federal Assistance - All Awards				\$ 73,478,291	\$ 26,221,815

**PACIFIC STATES MARINE FISHERIES COMMISSION
NOTES TO SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED JUNE 30, 2019**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Expenditures

Expenditures reported on the Schedule are reported on the accrual basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years. Pacific States Marine Fisheries Commission has elected not to use the 10-percent de minimis indirect cost rate as allowed under the Uniform Guidance.

Pass-Through Entities

Pass-through entity identifying numbers are presented where available.

NOTE 2 BASIS OF PRESENTATION

The accompanying schedule of expenditures of federal awards (the Schedule) includes the federal award activity of Pacific States Marine Fisheries Commission under programs of the federal government for the year ended June 30, 2019. The information in this Schedule is presented in accordance with the requirements of 2 CFR Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance)*. Because the Schedule presents only a selected portion of the operations of Pacific States Marine Fisheries Commission, it is not intended to and does not present the financial position, changes in net assets, or cash flows of Pacific States Marine Fisheries Commission.

**PACIFIC STATES MARINE FISHERIES COMMISSION
SCHEDULE OF FINDINGS AND QUESTIONED COSTS
YEAR ENDED JUNE 30 2019**

Section I – Summary of Auditors’ Results

Financial Statements

Type of auditors’ report issued: Unmodified

Internal control over financial reporting:

- Material weakness(es) identified? yes no
- Significant deficiency(ies) identified? yes none reported

Noncompliance material to financial statements noted? yes no

Federal Awards

Internal control over major federal programs:

- Material weakness(es) identified? yes no
- Significant deficiency(ies) identified? yes none reported

Type of auditors’ report issued on compliance for major federal programs: Unmodified

Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)? yes no

Identification of Major Federal Programs

CFDA Number(s)	Name of Federal Program or Cluster
11.022	Bipartisan Budget Act of 2018
15.512	Central Valley Improvement Act, Title XXXIV
81.999	Bonneville Power Administration

Dollar threshold used to distinguish between Type A and Type B programs: \$ 2,204,350 / 551,087

Auditee qualified as low-risk auditee? yes no

**PACIFIC STATES MARINE FISHERIES COMMISSION
SCHEDULE OF FINDINGS AND QUESTIONED COSTS (CONTINUED)
YEAR ENDED JUNE 30 2019**

Section II – Financial Statement Findings

2019 – 001

Type of Finding:

- Material Weakness in Internal Control over Financial Reporting

Condition: Accounts payable was materially understated.

Criteria or Specific Requirement: Payables should be recorded based on the date the liability is incurred. For disaster relief payments, this date is the date the invoice is received by the Commission.

Context: CLA identified several disaster relief program invoices that had been received prior to June 30, 2019 that were not included on the accounts payable listing. In addition, some state bill accruals were not recorded for one state agency at year-end.

Effect: Accounts payable and the related accounts receivable and program revenue and expenses were understated.

Cause: The disaster relief funds were awarded near year-end and required immediate payouts. Due to the volume and unusual type of expenditures, the Commission had to develop alternative methods for recording disaster relief invoices received and the corresponding payables. Initially, the Commission thought it was correct to wait on making all disaster relief-related payments until July 2019; however, it was later determined that payments would start being made in June 2019. The change in payment timeline, in addition to the volume of invoices, lead to some invoices being mistakenly left off of the accounts payable listing at year-end. In addition, duplicate invoices were received from one of the state agencies; that confusion coupled with the volume of disaster relief invoices lead to the misrecording of state bill accruals for one state agency.

Repeat Finding: This is not a repeat finding.

Recommendation: CLA recommends developing internal procedures that will facilitate accurate recording of invoices and the corresponding payables and state bill accruals.

Views of Responsible Officials and Planned Corrective Actions: There is no disagreement with the audit finding. The Commission is modifying the invoice-tracking process at the front desk to insure that invoices are tracked as accounts payable in the correct period.

Section III – Findings and Questioned Costs – Major Federal Programs

Our audit did not disclose any matters required to be reported in accordance with 2 CFR 200.516(a).



HEADQUARTERS STAFF 2019

Randy Fisher, *Executive Director*

Pam Kahut, *Finance Officer*

Shannon McKewon, *Human Resources Manager*

— PROGRAM MANAGERS —

Stan Allen, *Senior Program Manager*

Fisheries/Habitat Assistance Programs

Dave Colpo, *Senior Program Manager*

Commercial Fisheries Data Programs

Stephen Phillips, *Senior Program Manager*

Aquatic Nuisance Species Programs

Steve Williams, *Senior Program Manager*

Recreational Fisheries Information Network
Northern Pikeminnow Sport Reward Program



Pacific States Marine Fisheries Commission

CELEBRATING 72 YEARS OF SERVICE

Established in 1947 by consent of Congress, the Pacific States Marine Fisheries Commission (PSMFC) is an interstate compact agency that helps resource agencies and the fishing industry sustainably manage our valuable Pacific Ocean resources in a five-state region. Member states include Alaska, California, Idaho, Oregon, and Washington, each represented by three Commissioners.