53rd Annual Report of the

PACIFIC STATES MARINE FISHERIES COMMISSION

FOR THE YEAR 2000

TO THE CONGRESS OF THE UNITED STATES AND TO THE GOVERNORS AND LEGISLATURES OF WASHINGTON OREGON, CALIFORNIA, IDAHO AND ALASKA

PSMFC COMMISSIONERS 2000
Georgianna Lincoln and David Benton, Co-Chairs

ALASKA

GEORGIANNA LINCOLN Alaska State Senate	DAVID BENTON Alaska Dept. Fish & Game	DALE KELLEY Governor's Appointee

CALIFORNIA

DEDE ALPERT California State Senate	ROBERT HIGHT California Dept. Fish & Game	MARTIN BASCH Governor's Appointee

IDAHO

-Position Vacant- *Idaho* State Senate	RON SANDO Idaho Dept. Fish & Game	ROY MOULTON Governor's Appointee

OREGON

GARY GEORGE Oregon State Senate	JIM GREER Oregon Dept. Fish & Wildlife	PAUL HEIKKILA Governor's Appointee

WASHINGTON

HARRIET SPANEL Washington State Senate	JEFF KOENINGS Washington Dept. of Fish & Wildlife	JIM BUCK Governor's Appointee & WA House of Representatives

Our goal, as stated in the bylaws, is "to promote and support policies and actions directed at the conservation, development and management of fishery resources of mutual concern to member states through a coordinated regional approach to research, monitoring and utilization ".

TABLE OF CONTENTS

Page

53rd Annual Report

of the

PACIFIC STATES MARINE

FISHERIES COMMISSION

FOR THE YEAR 2000

To the Congress of the United States and the Governors and Legislatures of the Five Compacting States, Washington, Oregon, California, Idaho, and Alaska, 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 Assenting Thereto.

Respectfully submitted, PACIFIC STATES MARINE
FISHERIES COMMISSION

RANDY FISHER, Executive Director

Headquarters
45 SE 82nd Drive, Suite 100
Gladstone, Oregon 97027-2522

Al J. Didier, Jr.
EDITOR

53RD ANNUAL REPORT - 2000

ADMINISTRATIVE REPORTS AND ACTIONS

EXECUTIVE DIRECTOR'S REPORT

The Pacific States Marine Fisheries Commission (PSMFC) helps the fishermen and resource agencies of our five compacting states address the management of our Pacific ocean living marine resources. In 2000, PSMFC remained active as custodian and coordinator of coastwide fisheries databases, and maintained contract services for states and related agencies, and worked with fishermen on issues such as crab quality testing and habitat protection. The following are among the activities of the year:

• The value of external contracts administered by PSMFC increased 2% to $22.6 million.

• A coordinated research program to assess **Marine Mammal Impacts** on Pacific coast salmonids continued during 2000. The work included monitoring rates of predation on selected salmonid stocks by pinnipeds in the Quilcene, Dosewalips, Duckabush, Hamma Hamma, Skokomish, Alsea, Mad, and Eel rivers. Other studies assessed the seasonal abundance and distribution of pinnipeds along the Washington and Oregon coasts.

• During 2000 the **Pacific Fisheries Information Network (PacFIN)** Office processed 160 datafeeds from seven data sources and responded to 190 requests-for-information. There were also 97,745 visits to PSMFC's PacFIN website for an average of 8,145 visits per month. This compares to 5,500 per month in 1999 and 2,855 per month in 1998.

W-O-C Trawl Logbook Data Subsytem activities included: data analysis and retrievals in support of NMFS/NWFSC bank and darkblotched rockfish studies; completion of a project to match CDFG tow records to fish-ticket records for 1981-1987; development of routines and subsequent data retrievals that were provided to a U.C. Berkeley researcher for a widow rockfish study; re-development of an NMFS/NWFSC retrieval routine for a dover-thornyheads-sablefish (DTS) study that improved performance considerably; and the incorporation of ODFW's and WDFW's 1999 contributions to the central database.

A program to summarize NMFS at-sea PWHT observer data was completed. The resulting summary table consists of catch summaries for each processor vessel, day, species, catch-area, and catcher vessel. Each summary point consists of total-catch and retained-catch. This project included developing daily, weekly, and monthly vessel-area proportions in order to estimate the species composition of unsampled (i.e. unobserved) tows for use by West Coast economists and PFMC Groundfish Team analysts.

A routine to produce a standard non-confidential report containing the most recent catch statistics for the CPEL fishery was developed in conjunction with NMFS/SWR staff. This report, posted monthly on the PSMFC/PacFIN website, consists of quarterly summaries and has been designed to automatically exclude confidential statistics.

PacFIN activities related to HMS fisheries included: reviewing gear and species codes for the developing HMS FMP; establishing species codes for bigeye and pelagic thresher shark; and developing various reports containing albacore landings and vessel information. There was also general agreement reached with the NMFS/SWFSC on a future plan to incorporate into the PacFIN central database additional source data from the U.S. albacore fishery in the South Pacific.

Throughout the year PacFIN Office staff provided various levels of support to the WDFW PacFIN Coordinator in his efforts to re-develop, in its entirety, their PacFIN transaction generation software/system.

At various times during 2000 PacFIN Office staff assisted the AKFIN staff in their attempt to re-institute the regular monthly ADFG datafeed to the central processing system. Dealing with ADFG's strict confidentiality restrictions has consumed most of the effort on this project. There have been a few successes, one of which was the development of an automated process for the NMFS/ST1 office in Silver Spring that ensures the production of non-confidential summaries while at the same time producing summary statistics at the lowest level possible. During the second half of 2000 the PacFIN office staff also supported a variety of economic studies for the PFMC.

In January the Quota Species Monitoring (QSM) system was upgraded with the addition of six new rockfish categories corresponding to the North/South Near-shore, Shelf, and Slope rockfish subgroups. In December the catch estimate for darkblotched rockfish was added to the Best Estimate Report as a separate entity and at the same time removed from the catch estimate for the slope minor rockfish subgroup.

• The **Alaska Fisheries Information Network (AKFIN)** provides a framework that consolidates and supports the collection, processing, analysis, and reporting of a variety of information important for management of North Pacific fisheries. An annual grant award from National Marine Fisheries Service (NMFS) to PSMFC funds the program. These funds support an AKFIN Support Center (AKFIN-SC) and subcontracts to Alaska Department of Fish and Game (ADF&G) for related tasks.

The AKFIN-SC is a cooperative data program that maintains an Oracle data system with fisheries

information from the state of Alaska ADF&G and Commercial Fisheries Entry Commission, NMFS Alaska Region and Alaska Fisheries Science Center; the North Pacific Fishery Management Council (NPFMC); and PSMFC. State and federal data for Alaska fisheries are aggregated to improve availability of information for NPFMC analysis and reporting and the production of standard reports and specific data sets. Logical query of this information requires extensive knowledge of the multiple agency data sources, data structures to protect confidentiality, pertinent fishery facts, the analytical problems and alternative solutions. In 2000, the AKFIN-SC began reporting the Alaska portion of Fisheries of the U.S. and compiled harvests for the state component of PacFIN, sablefish logbooks, and preliminary estimates of landed groundfish catch by vessel. The year also marked initial investigation into data warehousing methods and documentation of the metadata (information about the warehouse data). This approach optimizes load of data items to the information system, the statistics maintained on the data loads and the data structures to support queries for data analysis and reporting of agency source data.

Besides providing better access to databases, AKFIN has improved the effectiveness of federally funded ADF&G data collection programs and funds overall management and reporting of the state databases. The work includes analysis of geo-referenced fisheries data of the Gulf of Alaska and Bering Sea groundfish and scallop fisheries; database development and maintenance for Alaska fisheries landing and processing data, groundfish age determination, data computerization, catch sampling of the Bering Sea crab fisheries and catch sampling of coastal groundfish fisheries. These efforts have furthered standards for common data codes, improved efficiency if data recording and continue to strengthen ADF&G infrastructure for this highly valued long-term program.

The AKFIN Steering Committee engaged in an extensive program during the year including documenting the AKFIN project and a suite of work plans for consideration by the Policy Committee. An independent review of the primary purposes of the AKFIN project and the AKFIN-SC data warehouse development will be conducted in fall of 2001. The review is to determine what is essential for multi-agency fishery reporting systems to best collect and manage these data, and to reduce redundancy in reporting and analyses. The goal is to improve fishery data management and reporting with resultant reduction in reporting costs to industry and the agencies.

Plans for 2001 include continued support of ADF&G data collection and data management programs. AKFIN-SC will provide data sets and reports to the NPFMC and Alaska Department of Labor and Workforce Development as requested. The Alaska portion of Annual Fisheries of the United States for NMFS, annual summaries of Alaska catch for the North Pacific Anadromous Fisheries Commission and the Alaska Department of Commerce and Economic Development, and monthly summaries of state landed catch to PacFIN will be compiled. These data reports and the results of the independent review will be used to further implementation of the AKFIN-SC information system. AKFIN-SC will continue to enter and report logbook data for the sablefish fishery and assist in a similar project for groundfish trawl fisheries.

• The **Regional Mark Processing Center** (RMPC) continues to provide regional services to all State, Federal, Tribal, and non-governmental agencies involved in marking anadromous salmonid fishes on the entire Pacific Coast, including Canada. These services include coastwide coordination of tagging and fin marking programs, and maintenance of a regional database for releases and recoveries of coded wire tag (CWT) marked salmonids. In addition, the Mark Center serves as the single United States database to exchange CWT information with Canada for Pacific Salmon Treaty purposes.

The CWT data can be accessed through PSMFC's Regional Mark Information System (RMIS) by either dial-up (503-650-5437) or via the internet (www.rmis.org). A two year effort to fully convert the Regional Mark Information System (RMIS) dial-in system (character based; log in required) to the web environment was achieved during the first quarter of 2000. Ongoing work in 2000 focused on expanded the user options for accessing and downloading CWT data. User response to the Mark Center's new RMIS web site (www.rmis.org) has been highly favorable.

The *CWT Data File Definitions, Specification, and Validation* document was updated to include the new fields and other changes introduced with Format Version 4.0. The new format has a very different overall design from that of Version 3.2. In specific, many of the data field names have been changed to better identify their meaning, function, and be more consistent with each other. In addition, the position of many of the fields had been changed to be in more logical groupings of like data sets. This work was not completed as additional data needs were discovered as a result of the impact of mass marking and selective fisheries. A subsequent meeting of the PSC Data Standards Working Group in December 2000 reviewed the changes once more and then finalized Format Version 4.0.

The 2000 Mark Meeting again focused on the key issues of coastwide mass marking and selective fisheries activities. Updates were provided on Washington and Oregon's efforts to mass mark their respective production of hatchery coho and Chinook. This included mass marking by the USFWS and by many of the Tribes in Washington. Another key issue was the continued effort to develop a formal charter for the Regional Mark Committee in order to define its role in dealing with politically charged mass marking issues. Consensus was reached that it was unrealistic to expect all agencies to sign a formal charter for the Mark Committee, in part because it could be construed as a

transfer of power to the Mark Committee. It was also recognized that the Regional Marking Agreements now in place serve as an effective charter. The Mark Committee assigned the Subcommittee on Marking the task of blending the revision of the 'Charter' with a revision of the Regional Agreements on Marking. In addition, the Charter will be redefined as the guiding Principles and Guidelines for the normal operations of the Mark Committee. This work will be completed during the 2001 Mark Meeting.

The RMPC hired an Assistant Data Manager/ Programmer during July 2000 to help relieve the Mark Center's growing backlog of programming required for web based applications. His first major task was to enhance the 'Hatchery Release[1] application. This MS Access application can be used by agencies to input release data, have it formatted into the current PSC data file specifications, and then subject it to a preliminary validation. The target users are the smaller agencies that have limited resources for processing hatchery release data, including CWT release information in PSC format version 3.2. Future plans include porting it to format version 4.0 once those new data specifications are finalized. Similar applications are also being considered for recovery and catch/sample data. 'Hatchery Release[1] can be downloaded from the RMIS web site at www.rmis.org under the Coded-Wire Tag circle.

For years, the Mark Center produced an annual report listing CWT releases for the most recent seven years. However, the new web-based RMIS system provides users with a very easy method of obtaining the most current release data. Therefore, the Mark Committee supported the Mark Center's recommendation that the annual hard copy report be discontinued to save printing and distribution costs.

Figure 1. A camera crew films snorkeling in the Imnaha River for sub-yearling wild chinook during the production of the PTAGIS "PIT Tag Best Practices" training video.

• The Columbia River **PIT Tag Information System** (PTAGIS) is a data collection, distribution and coordination project. The project saw over 1,288,000 juvenile salmonids marked with passive integrated transponder (PIT) tags, for the 2000 out-migration through the Columbia and Snake river systems, compared to over 1,500,000 in 1999. In 2000, these fish generated over 4,600,000 interrogation records. One fish can generate many interrogation records, depending upon how many interrogation monitors 'saw' the fish.

2000 marked the first year of data collected from the new, International Standards Organization (ISO) tag system. The new system provides for increased accuracy, and increased tag read ranges. These improvements will allow PIT tagged fish to be detected within fish ladders and small streams.

The PTAGIS program produced a Workshop during the winter of 2000, which was attended by over 150 people associated with the PIT tag marking programs within the Columbia River Basin. In addition, we produced a "PIT Tag Best Practices" training videotape that provides agencies a tool to standardize on PIT tag marking procedures to improve tagging quality.

A number of agencies requested support from the PIT Tag Operations Center in order to implement studies utilizing the "Separation by Code" (SbyC) system capability. This system has the capability to divert PIT tagged fish in various directions based upon distinct tag code. The system allows a researcher, for example, to mark and release 100 fish above Lower Granite Dam and divert 50 of the marked fish back to the river, and 50 of the marked fish into transportation barges.

Plans are being implemented to have an adult PIT tag system installed at all fish ladders Bonneville and McNary Dams in time for 2002 adult returns.

• **StreamNet** is a cooperative information management project that provides basic fishery management data in a consistent format across the Columbia Basin region, with some data from outside the region. Specific categories of data are acquired from the multiple data generating agencies in the Columbia Basin, converted into a standardized data exchange format and distributed to fish researchers, managers and decision makers directly or through an on-line data retrieval system (www.streamnet.org). The project is funded by the Bonneville Power Administration as part of the Northwest Power Planning Council's (NWPPC) Fish and Wildlife Program and is administered by the Pacific States Marine Fisheries Commission. Direct project cooperators include the four state fish and wildlife agencies, the Columbia River Intertribal Fish Commission, U.S. Fish and Wildlife Service, and the Shoshone-Bannock Tribes.

During the year 2000, the StreamNet project reprogrammed its online database query system to utilize the new Longitude-Latitude Identifier (LLID) system of location coding for the fish data contained in the database. This new system ties data to locations on specific streams contained in the 1:100,000 scale

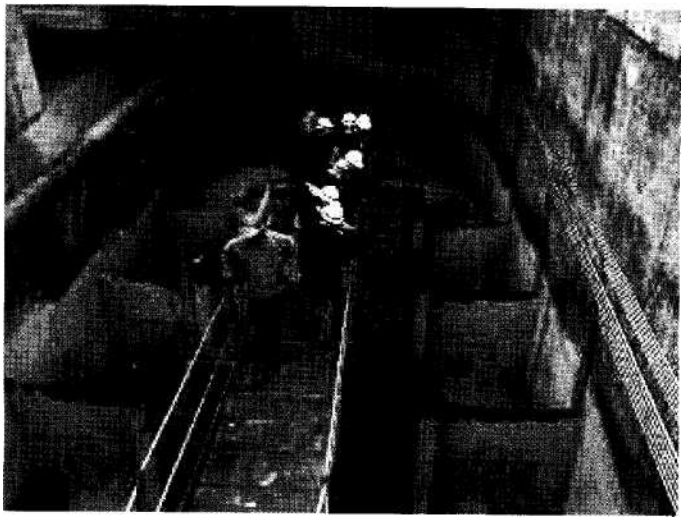


Figure 2. Workers install a PIT Tag Detector in the Washington Shore Fish Ladder at Bonneville Dam .

hydrography (stream network), as compared to the previous approach which utilized individual stream reaches on an enhanced stream network layer at the 1:250,000 scale. Under the LLID system, location coding for a segment of stream requires only a single stream identifier code and measurements along the stream, as contrasted with multiple individual stream reach codes necessary to locate the same segment. The new system is more accurate, more detailed, more flexible and improves the project's ability to map information.

Standard project activities during the past year included additions and updates to the regional anadromous fish distribution GIS layers, updates to annual trends for a number of specific data categories, and updated information on hatcheries. Data development for new data categories included work on barriers to fish migration and information on fish and wildlife habitat restoration projects in the basin. References for all new data were cataloged and provided to the StreamNet Library. An inventory of data availability within the StreamNet database was developed on a subbasin and species basis to serve as a tool for development of Subbasin Summaries as part of the Rolling Provincial Review process under the new NWPPC Fish and Wildlife Program. Use of the StreamNet on-line system is continuing to increase, with a 7% increase in data query sessions in Fiscal Year 2000.

The Internet has become the primary means of distributing fisheries information from the StreamNet database. The online query system allows users to enter criteria for the location, species and type of information needed. The query locates the information and displays it on the screen, where users can also request data summaries, graphs or maps.

Under funding provided by the EPA, a prototype database was developed to house water temperature data from data sources not contained in the EPA's STORET data system, and work was initiated in locating data and developing a database structure to house regional data on macroinvertebrate populations. These efforts will continue into 2001. Other new work included preparation of a proposal to EPA to develop a conversion function between the new National Hydrographic Dataset and the LLID based regional hydrography. This proposal was approved, and most work will be accomplished in 2001.

Efforts also began to assist development of information management efforts along the lines of StreamNet in cooperation with the California Department of Fish and Game and the NMFS Southwest Region. These efforts will continue into the future and potentially expand the availability of fish related data to the entire West Coast.

Future efforts of the StreamNet Project will focus on speeding the process of obtaining and posting annual data updates and improving service to data users. Initial efforts to improve service will focus on developing a user guide to the on-line query system and providing more explanatory information on the StreamNet website.

• The **California Anadromous Fish Data Program** is a small cooperative effort begun in 1998 by PSMFC, California Department of Fish and Game (CDFG), and the National Marine Fisheries Service (NMFS) to collect, archive, and enter into electronic formats the information generated during anadromous fish monitoring activities in California. This cooperative arrangement has enabled PSMFC to employ a part time data technician to work on site with CDFG staff in Redding. A significant amount of information regarding the current and historic status of California's anadromous fish is available through this cooperative data program. At close of calendar year 2000, 433 California reference sources have been used to compile 6,114 escapement data records and 2,167 hatchery return data records. These efforts are being coordinated with the Northwest StreamNet program. In addition, the Regional Mark Information System (RMIS) has been provided hatchery release data for 557 groups of anadromous fish released from four California hatcheries. These fish were not associated with a CWT and had not previously been reported to RMIS.

Another PSMFC, CDFG, and NMFS cooperative data effort is the California Habitat Restoration Project Database (CHRPD), which was initiated in 1999. Extensive improvements were made in this data effort in 2000. The database currently contains information on all habitat restoration projects funded through the California Department of Fish and Game's Fisheries Restoration Grants program (1,260 projects). The original data structure of the CHRPD is based on the NW StreamNet Data Exchange Format, however a number of tables have been added to specifically address data needs in California. The new data categories include detailed budget information, final report details and watershed planning recommendations. Each project has been geo-referenced using 1:100K routed hydrography based on the LLID identification system. CHRPD data will be

ultimately made available via web interface as well as by limited distribution on CD. Detailed documentation of the database and its GIS component will also be available. Data are currently being sought and assimilated from other agencies and organizations involved in habitat restoration projects in California.

• The **Recreational Fisheries Information Network (RecFIN)** is a cooperative effort between the state fishery agencies in Washington, Oregon, and California, the Pacific States Marine Fisheries Commission (PSMFC), and National Marine Fisheries Service (NMFS). The four goals of RecFIN are: 1) Develop and implement a State/Federal cooperative program for a coastwide marine recreational fisheries data system; 2) Coordinate collection, management, and dissemination of Pacific coast marine recreational fishery data; 3) Provide the data in a central location on a timely basis in the format needed to support state and federal work on Pacific marine recreational fisheries; and 4) Reduce and avoid duplication of data collection efforts between RecFIN members.

The RecFIN database can be accessed on the PSMFC web site at: www.psmfc.org/recfin. Catch and effort data, angler demographic and economic data, and biological data for pacific coast marine recreational fisheries are available. The database contains recreational fishery data for the years 1980-89 and 1993-date. The primary source of data in the RecFIN database comes from the Marine Recreational Fisheries Statistics Survey (MRFSS) funded nationwide by NMFS along with state agency sampling program data. The MRFSS is continuous for the entire 12 months of the year and samples in four basic fishing modes: man-made structures (piers, jetties, docks etc.), beaches and banks, private and rental boats, and party and charter boats. The state sampling programs run seasonally from early spring through late fall. On the Pacific coast the MRFSS interviews about 36,000 anglers each year at fishing sites to weigh and measure the fish caught and identify them to species. Angler data of various types is also collected. Each year about 95,000 fish are counted with about 72,000 being measured and 70,000 also weighed. The survey is spread out over about 800 fishing sites coastwide in the three states. Of these sites, about 57% are in California, 10% in Oregon and 33% in Washington state.

The state sampling programs include ocean boat surveys on the coast from late April through late September in Washington and Oregon and a California ocean boat salmon sampling program. The MRFSS does not duplicate these sampling efforts by the states. Instead, it defers to the state sampling for the appropriate times or modes of fishing and concentrates its sampling in the remaining modes/time periods. State data is then incorporated into the RecFIN database.

In 2000, 34,518 anglers were interviewed in the field in the three states of California, Oregon and Washington in the MRFSS. A total of 59% of these were in California, 22% in Washington and 19% in Oregon. State sampling programs had a much higher sampling rate than the MRFSS, concentrating on ocean boat trips only.

• The **Northern Pikeminnow Predator Control Program** was again administered by PSMFC in 2000. The program is a joint effort between the fishery agencies of the states of Washington and Oregon, the Columbia River treaty tribes, the Columbia River Intertribal Fish Commission (CRITFC), the Columbia Basin Fish and Wildlife Authority (CBFWA) and the Pacific States Marine Fisheries Commission (PSMFC). Washington ran the sport-reward registration/creel check stations throughout the river and handled all fish checked in to the program. Oregon provided fish tagging services, population studies, food habit and reproductive studies, as well as exploitation rate estimates. PSMFC contracted with the CBFWA for technical administration of the program. PSMFC provided fiscal and contractual oversight for all segments of the Program and processed all reward vouchers for the sport-reward anglers. CRITFC and the treaty tribes conducted angling at the dams and site specific removals by means of gillnets at tributary mouths to aid salmonid downstream migrant survival.

In 2000 a total of 189,462 fish were harvested in the sport-reward fishery. Vouchers for 187,768 fish were submitted for payment totaling rewards of $978,938. Rewards were paid at $4 for the first 100 fish caught

Figure 3. Estuarine restoration projects were a focus of the Fish Habitat Education Program during 2000.

during the season, $5 for fish in the 101-400 range, and $6 for all fish caught by an angler above 400 fish. Coupons good for one free $4 reward were issued again in 2000 as an incentive to stimulate angler participation. A total of 2,322 coupons were returned for payments of $9,288. Anglers were able to use a coupon on a voucher when they caught one or more pikeminnows for the extra $4 reward. A total of 2,688 anglers who registered were successful in catching one or more fish in 2000. The 2000 season ran from May 15, 2000 through October 8, 2000.

A total of 172 tagged fish were caught. Anglers were issued a special tagged fish voucher for all tagged fish brought to the registration station. The tag voucher was then sent in with the tag for verification and payment of the special $50 tagged fish reward. This resulted in tag reward payments of $8,600.

There were no tournaments during 2000 for the first time in a number of years. The 2000 season saw a change in the size eligible for rewards lowered to 9 inches from 11 as this year's incentive for anglers.

• The **Fish Habitat Education Program** works to protect habitat for salmon and other marine fish species through education, protection, and restoration activities. The Commission's habitat efforts are funded primarily by the Wallop-Breaux Sport Fish Restoration program. Through membership in Pacific Fishery Management Council's Habitat Committee and the West Coast Marine Reserve Coordinating Committee, and through other marine protected area coordination meetings, this program helps to track issues, deal with habitat problems, and help promote coordinated outreach and efforts on marine protected areas.

In year 2000, one important focus area involved salmon habitat protection and restoration along the Oregon coast. The program provided project management for two estuarine restoration projects that will restore high salt marsh conditions to about 80 acres on the Yaquina river, a basin in which over 70% of the marshes have already been lost. Under project management, a five-acre salt marsh will be donated to a local conservancy to assure its protection. We initiated activities with landowners of key salmon habitat that will lead to permanent protection through conservation easements on over 80 acres, containing one half mile of mainstem habitat. Work with the MidCoast Watersheds Council's technical, administrative and education committees helped guide the completion of a GIS-based watershed assessment to prioritize areas for work within a million acre basin that is key habitat for coho, steelhead, chinook, and chum salmon. We helped select over $400,000 worth of assessment, protection, education and restoration projects, and assured appropriate administrative oversight. This and prior year's efforts for the watershed council were recognized in October 2000, when project manager Fran Recht received one of the "Spirit of the Oregon Plan" Leadership Awards, during the first year of those awards.

This year's watershed overflights were conducted to orient and energize the members of watershed groups in three Watershed Resource Inventory Areas (WIRA): WIRA 7 (Snohomish, Snoqualmie and Skykomish watersheds), WIRA 8 (Cedar and Sammamish watersheds), and WIRA 9 (Duwamish/Green watershed). WIRA 7 work was new for the year 2000. A total of 72 people participated in the flights, with additional citizens and agency representatives participating in the pre-flight orientations. The pre-flight meeting, flight path, and take-home information packet was designed to help participants appreciate the impacts due to estuarine alteration, hardening of shorelines, urban sprawl, dams and water diversions, agricultural and forestry impacts, as well as the watershed restoration and protection efforts that are occurring.. Participants included city and county public officials, fishermen, farmers, agency representatives (e.g. water bureau), environmental group representatives, politicians, business men, foundation representatives, and (for the first time) representatives of communities of faith. The latter are working to reach out to local citizens through their churches and educate and involve them in watershed restoration efforts. Many of these participants were appointed members of the watershed groups.

Groundfish (e.g. rockfish, lingcod, greenling) are important to the sport, commercial and tribal fishing industries and a healthy marine ecosystem, but recent assessments indicate that many of these fish species are in a depleted condition. One major element of the Pacific Fishery Management Council (PFMC) strategic

Figure 4. PSMFC's Fran Recht received one of the "Spirit of the Oregon Plan" Leadership Awards during 2000 from Oregon's Governor John Kitzhaber.

plan, marine reserves (areas that would be put off-limits to fishing), were deemed to be a viable tool for stock rebuilding and could benefit fishermen if used in conjunction with other tools. However, many in the fishing community (and general public) are not familiar with the long life spans, delayed maturation, low fecundity and habitat requirements of species such as rockfish and lingcod, or with some of the management tools like marine reserves that are being contemplated in light of these factors. This project developed background materials on life histories of groundfish species, lists of species in trouble, a brochure for each state outlining marine protected activities in that state. Using these materials, we staffed a marine protected area display at sport shows and at the Oregon Policy Advisory Council meeting.

This program also assisted in Oregon oil spill prevention activities through work on a 9-member New Carissa task force appointed by Oregon's Governor. The committee worked in 2000 to finalize a draft report from seven meetings and hearings held during 1999. The report made recommendations to improve marine vessel accident prevention, marine spill response preparations, incident response system management, environmental assessment and restoration capacity, communication, agency administrative capacity, and to change statutes and requirements related to vessel financial assurances and wreck removal.

• The Bonneville Power Administration (BPA) funds an **Aquatic Nuisance Species (ANS)** prevention program for the Columbia River Basin (CRB) conducted by the PSMFC and Portland State University. As zebra mussels spread westward across the continental United States, they pose a serious economic and ecological threat to the CRB's multiple uses such as agricultural, navigation, boating, fishing, industrial, and hydroelectric operations. The program is also focusing on the Chinese mitten crab, which has caused problems in the San Francisco Bay Delta.

In 2000, the program created and distributed PEST ALERT! posters to state agency (e.g. law enforcement, transportation) field stations. Also with BPA and U.S. Fish Wildlife Service funding, two technicians worked in the field on ANS outreach. One technician conducted recreational watercraft surveys and inspections at boat ramps and marinas in Oregon, Idaho, Wyoming, and Montana. Funding for this work was provided by the USFWS' Federal Aid in Sport Fish Restoration Program (Wallop-Breaux). Questions asked of boaters included - purpose of trip, type of vessel, previous launch sites, destination, and knowledge of ANS. We also handed out state-specific ANS education and prevention materials.

Data from the surveys at our sampling stations in the summer of 2000 show little traffic of recreational watercraft from zebra mussel-infested states to the lakes and reservoirs of the CRB. A variance in our results came from Fort Peck Reservoir (Montana). During two days of sampling at this site, we found that 45 percent of

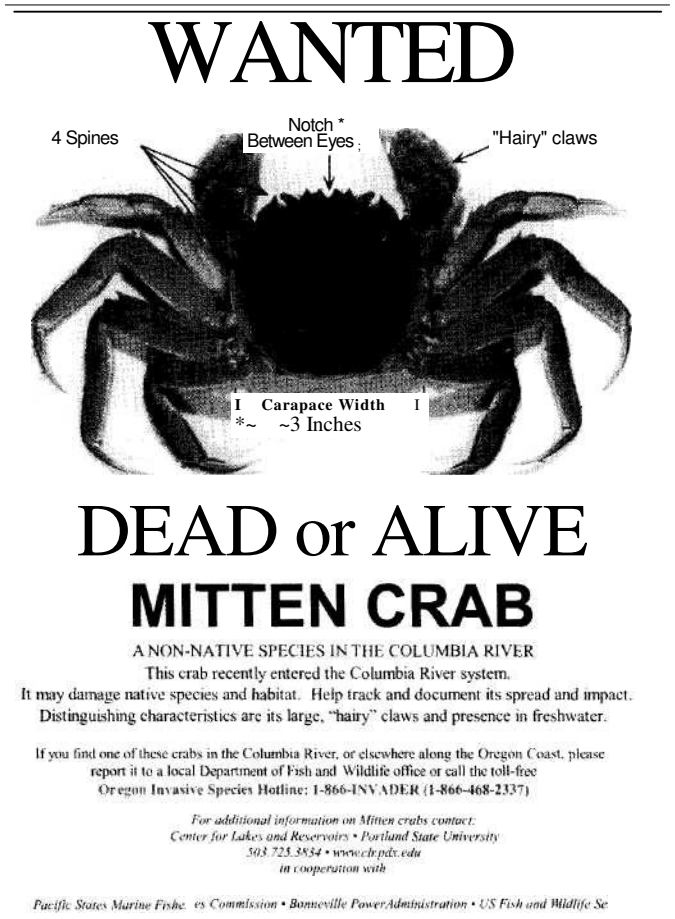


Figure 5. Public information materials provided by PSMFC alert boaters and anglers to the presence of aquatic nuisance species.

the boats originated from zebra mussel states. At Fort Peck, however, this higher percentage was attributable to a walleye tournament that occurred during the sampling period. The good news is that many tournaments inform their participants of the ANS danger, and tournament participants often take measures to keep their boats and trailers clean.

Most boaters we interviewed were not aware of zebra mussels. This finding is of obvious concern and efforts are needed to increase zebra mussel awareness in the West. In Montana, where there is an active Eurasian watermilfoil educational campaign, the majority of those interviewed were aware of this nuisance aquatic plant.

Another technician conducted mitten crab outreach in the lower Columbia River. Outreach activities included posting mitten crab posters ("Wanted Dead or Alive"). In September 2000, a crayfish fisherman saw the "wanted" poster and called to report a potential mitten crab caught in the Willamette River near Portland, Oregon.

We have become involved in aquatic nuisance species activities at the federal level by participating in meetings of the Aquatic Nuisance Species Task Force, the Task Force's Western Regional Panel, and U.S. Fish and Wildlife Service's 100th Meridian Initiative. We were

also instrumental in the development of an aquatic nuisance species management plan for Oregon. The plan is being drafted by Portland State University's Center for Lakes and Reservoirs (Dr. Mark Sytsma and Erik Hanson), and is scheduled for completion by year's end 2001.

2000 PUBLICATIONS

52nd Annual Report of the Pacific States Marine Fisheries Commission for the Year 1999 (December 2000) contains a summary of PSMFC activities, funding, and expenditures, and reviews selected Pacific Coast fisheries statistics for 1999.

FINANCIAL, AUDIT, AND BUDGET REPORTS

The Commission receives its financial support from contributions from its member states, grants, contracts, and indirect cost charges on external contracts. Since 1977, the states' contributions have remained level funded at $106,000 per year. These contributions are made available from the member states in accordance with Article X of the Interstate Compact which created the Commission. The formula calls for eighty percent of the total contributions to be shared equally by those states having as a boundary the Pacific Ocean and five percent from Idaho. The fifteen percent balance is divided by the states in proportion to the primary market value of the products of their commercial fisheries on the basis of the (then) latest 5-year catch records.

2000 Audit Report

To the Board of Commissioners
Pacific States Marine Fisheries Commission
Gladstone, Oregon

We have audited the accompanying general purpose financial statements of Pacific States Marine Fisheries Commission (the Commission) as of and for the year ended June 30, 2000 as listed in the table of contents. These general purpose financial statements are the responsibility of the Commission's management. Our responsibility is to express an opinion on these general purpose financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States 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 general purpose financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the general purpose financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the general purpose financial statements referred to above present fairly, in all material respects, the financial position of the Pacific States Marine Fisheries Commission as of June 30, 2000, and the results of its operations for the year then ended in conformity with accounting principles generally accepted in the United States.

In accordance with *Government Auditing Standards,* we have also issued a report dated June 17, 2002 on our consideration of the Commission's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grants.

Our audit was made for the purpose of forming an opinion on the general purpose financial statements taken as a whole. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by *U.S. Office of Management and Budget Circular A-133, Audit of States, Local Governments, and Non-Profit Organizations,* and is not a required part of the general purpose financial statements. The accompanying supplemental information

COMBINED BALANCE SHEET - JUNE 30 ,2000

	General Fund	Special Revenue	General Fixed Assets	General Long-Term Debt	Totals
		ASSETS			
Cash and Investments	1,905,232	0	0	0	1,905,232
Due from other Funds	3,298,877	1,428,854	0	0	4,727,731
Receivables:					
Grants and Contracts	0	3,298,877	0	0	3,298,877
Other	1,658,786	0	0	0	1,658,786
Prepaids	73,263	0	0	0	73,263
Fixed Assets	0	0	3,634,223	0	3,634,223
Amount to be Provided for Retirement of General Long-Term Debt	0	0	0	952,653	952,653
Total Assets	6,936,158	4,727,731	3,634,223	952,653	16,250,765
		LIABILITIES AND FUND EQUITY			
Liabilities					
Due to Other Funds	1,428,854	3,298,877	0	0	4,727,731
Accounts Payable	3,778,987	0	0	0	3,778,987
Payroll Liabilities	338,337	0	0	0	338,337
Accrued Compensated Absences	570,886	0	0	373,361	944,247
Tenant Deposits	7,432	0	0	0	7,432
Advances	289,526	0	0	0	289,526
Capital Lease Obligations	0	0	0	30,211	30,211
Real Estate Contracts	0	0	0	549,081	549,081
Deferred Revenues	0	1,428,854	0	0	1,428,854
Total Liabilities	6,414,022	4,727,731	0	952,653	12,094,406
Fund Equity					
Investment in General Fixed Assets	0	0	3,634,223	0	3,634,223
Fund Balance Reserved for Prepaid Insurance	24,055	0	0	0	24,055
Unreserved	498,081	0	0	0	498,081
Total Fund Equity	522,136	0	3,634,223	0	4,156,359
Total Liabilities and Fund Equity	6,936,158	4,727,731	3,634,223	952,653	16,250,765

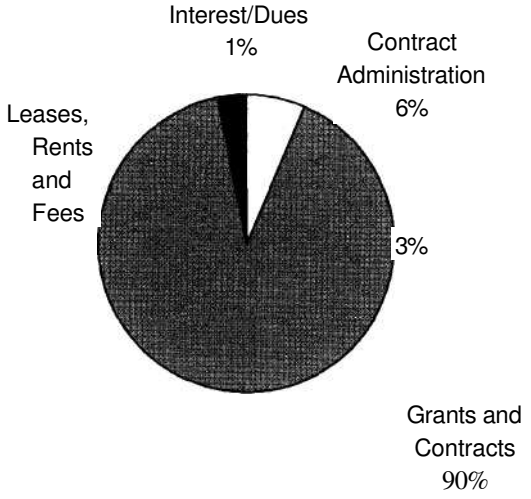
listed in the table of contents is also presented for purposes of additional analysis and is not a required part of the general purpose financial statements. The information has been subjected to the auditing procedures applied in the audit of the general purpose financial statements and, in our opinion, is fairly stated in all material respects in relation to the general purpose financial statements taken as a whole.

Aldrich, Kilbride & Tatone LLP
June 17,2002 Salem, Oregon

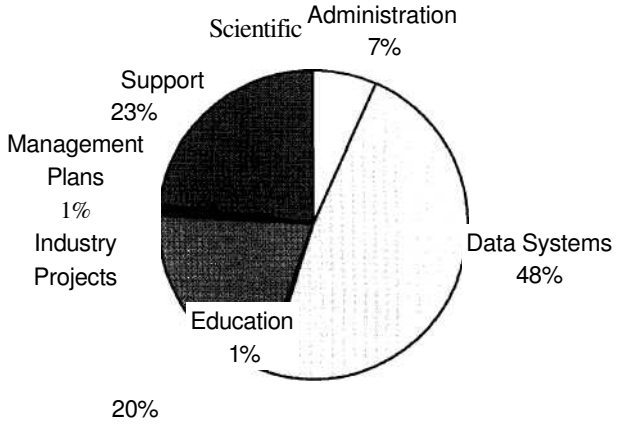
Editors Note: Copies of the complete auditor's report are available upon request

2000 PSMFC OPERATING BUDGET

REVENUES



EXPENDITURES



External Contracts for the Period
July 1, 1999-June 30, 2000

NMFSAKFIN	1,793,700
NMFS AK Fisheries Center Databases	73,790
NMFS Albacore Logbook & Port Sampling	49,636
NMFS Columbia Basin Biosampling and Monitoring	1,125,700
NMFS Economic Analysis of West Coast Fisheries	174,004
NMFS Expanding Pinniped Populations	500,000
NMFS Habitat Restoration Data	55,941
NMFS Interjurisdictional Fisheries Program	250,000
NMFS Marine Recreational Fisheries Economic Survey	71,452
NMFS Miscellaneous support agreements	431,542
NMFS Pacific Fisheries Information Network (PacFIN)	2,156,899
NMFS Recreational Fisheries Angler Survey Analysis	40,000
NMFS Recreational Fisheries Information Network (RecFIN)	1,022,104
NMFS Streamnet	119,585
NMFS/USFWS Regional Mark Processing Center	367,312
NPPC Framework	50,600
USFWS W/B Administration	150,000
PFMC/NPFMC Council Support	64,881
COE Fish Bypass Transportation Program	239,232
EPA Technical Support	172,000
BPA Aquatic Nuisance Species	61,054
BPA Columbia River Coded Wire Tag	1,726,783
BPA Comparative Survival Study	257,604
BPA Northern Pikeminnow Sport Reward Program	3,194,633
BPA PIT Tag Data Base	1,116,560
BPA PIT Tag Procuring	1,889,760
BPA Smolt Coordination (Fish Passage Center)	1,054,833
BPA Smolt Monitoring	1,714,384
BPA Streamnet	1,883,631
Multi-Agency Fish Marking Coordination Support	35,842
For the Sake of the Salmon	459,210
Willamette Restoration Initiative	122,397
CDFG Marine Related Issues Coordination	37,140
ODFW Groundfish Observers/Data Collection	106,500
ODFW/PSMFC Whiting Observer Program	14,145
WDFW Cowlitz Falls	100.056
Total Contracts	22,682,910

Submitted by Pam Kahut, Fiscal Manager/Treasurer

2000 ANNUAL MEETING EVENTS

SUMMARY

The 2000 PSMFC Annual Meeting was held August 28-30 in Girdwood, Alaska with State Senator Georgianna Lincoln and David Benton as co-chairs. The agenda included reviews of federal legislation and appropriations, a general discussion of selected fishery issues, and a panel discussion exploring future fishery management options. Topics considered during the general discussion included NMFS plans for the new Emergency Groundfish Disaster Relief funding, the new West Coast observer program, West Coast catch and effort monitoring, and abundance surveys. Quentin Fong of the University of Alaska Fairbanks described Asian markets for live fish fishery products. Ginny Goblirsch of OSU Sea Grant provided an update of the new Regence BlueCross group health plan that is available to fishing families. A panel consisting of Jane DiCosimo, Trevor McCabe, and Brad Gilman discussed fishery management options of the future, including individual quotas (IQs) for halibut and other species, sport/commercial halibut allocations, fishery cooperatives, and the allocation issues raised in the context of the MSFCMA reauthorization. Andrew Trites of the North Pacific Universities Marine Mammal Research Consortium described how ecosystem modeling can be used to unravel the effects of fisheries from natural oceanographic changes. Barbara Belknap of the Alaska Seafood Institute described marketing the fishery business. Captain Vince O'Shea discussed vessel safety, training, and the US Coast Guard budget, and Don Mclsaac reviewed the strategic plan for West Coast groundfish fisheries that was recently developed by the Pacific Fishery Management Council. Don Knowles of NMFS described the mission of the Protected Resource Division, current ESA listings, and the things his agency must do to demonstrate that it has an effective conservation strategy for the ESA-listed species. Joe Scordino of NMFS described salmon and steelhead 4D rules and recovery planning.

BUSINESS MEETING

The following issues were addressed at the annual business meeting on August 30, 2000:

- Marine Mammals and the Marine Mammal Protection Act (MMPA)
  The Commission moved to continue lobbying for MMPA amendments addressing robust stocks and the use of non-lethal deterrent devices (Vote: 5-0).
  a) The Commission actively supports the non-lethal research program and the procedural changes to the Take Reduction Team (TRT) process suggested in the draft bill recently issued by the House Resources Committee.
  b) The Commission requested that the non-lethal deterrent research provision be amended to authorize the Secretary to request that the Commission act as the program administrator for the research under a cooperative agreement with the Secretary of Commerce.

- Magnuson-Stevenson Act Reauthorization
  The Commission agreed not to take a position on the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) legislation proposed by Senator Snowe (Vote: 5-0). PSMFC staff will continue to monitor MSFCMA reauthorization developments and will establish a working group consisting of one member from each state to develop a Commission position on developing legislation.

- Coast Guard Funding
  PSMFC supports lobbying efforts for additional Coast Guard funding, with the understanding that this be new funding and not funds taken from existing fisheries-related programs or sources (Vote: 5-0).

- Pacific Fishery Management Council (PFMC) Strategic Plan
  PSMFC supports the PFMC strategic plan for West Coast groundfish fisheries, and directed staff to lobby Congress for the funds to implement it, with the understanding that this be new funding and not funds taken from existing fisheries-related programs or sources (Vote: 5-0).

- Electronic Reporting
  The Commission will continue to promote regional databases under regional control, rather than a centralized approach to fisheries data collection and reporting. PSMFC encourages the use of standards that make these data versatile and user-friendly (Vote: 5-0).

- National Marine Aguaculture Act

The Commission reaffirmed its recommendations from the 1999 Annual Meeting. The states will name individuals to participate on a working group for this issue. The 1999 recommendations were:

a) PSMFC supports funding for aquaculture research but not aquaculture promotion in the NMFS budget.

b) PSMFC supports the development of environmentally sound aquaculture programs. Further, the Commission supports the development of a coastwide genetics and disease policy and protocol for aquaculture. The Commission opposes further expansion of the culture of non-endemic species and stocks until this policy is developed and approved, to ensure that aquaculture practices in one region do not adversely affect another region. Commission staff is directed to work with NMFS to develop a process whereby the states may affect the development of the national aquaculture policy.

c) PSMFC staff was directed to consider the issues raised in the Alaska White Paper on Atlantic Salmon, and the comments of other states on that document, during efforts to develop a national aquaculture policy.

- Interjurisdictional Fisheries - Tri-State Dungeness Crab Committee

  PSMFC staff were directed to lobby for an extension of existing state jurisdiction in the West Coast Dungeness Crab fishery, drawing advice from ad hoc advisory groups representative of the state agencies and industry as necessary (Vote: 5-0).

- West Coast Marine Reserves

  The Commission supports the use of Marine Reserves as a management tool as needed to achieve the goals contained in the West Coast Groundfish Strategic Plan. Commission staff were directed to support and lobby for sufficient new federal funds as needed to implement, enforce, and evaluate the effectiveness of marine reserves (Vote: 5-0).

  a) PSMFC believes that the decision to establish marine reserves must be a regional council decision with concurrence from each affected state.

  b) Commission lobbying efforts should focus on obtaining adequate research funding to establish baselines, goals, objectives, and monitoring programs.

- Conservation and Reinvestment Act (CARA)

  PSMFC supports efforts by the House resources Committee and the Senate Energy Committee to enact CARA prior to the adjournment of the Congress in 2000, with the maximum funding possible for coastal stewardship and ocean and coastal conservation (Vote: 5-0).

  a) Concerns were expressed over increased government acquisition of private property in Western states. PSMFC will not take a position on those portions of the bill.

  b) PSMFC will continue to support the general concept of funding coastal resource protection, stewardship, and research through this mechanism, even if the current CARA legislation is not enacted in 2000.

- NMFS Mission Review and Requirements

  Should this evaluation be performed, the Commission (Vote: 5-0):

  a) Requests a substantive review of the NMFS fisheries statistical programs with particular emphasis on ways in which the Federal and State fisheries programs can be coordinated to improve effectiveness, enhance reliability and constituent confidence, and reduce duplication, consistent with Sec. 412 of the MSFCMA;

  b) Should actively develop recommendations and strategies for NMFS and the reviewers to improve the relationship between the agencies and the West Coast/Alaska marine constituencies;

  c) Requests a substantive review of the benefits of regionalizing data programs such as PacFIN, and extending this concept into RecFIN, VMS, and others;

  d) Suggests that Congress request a General Accounting Office (GAO) audit of the NMFS budget and accounting policies, processes, and procedures.

- Coordination of Recreational Fishery Data Collection Between the Marine Recreational Fisheries Statistics Survey (MRFSS) and the State Agencies

  The Commission should facilitate the coordination of recreational fishery data collection programs with the intent of creating efficiencies, eliminating overlaps and conflicting data (Vote: 5-0).

- PSMFC Operations

  The Commission recommended the following PSMFC operating procedures (Vote: 5-0).

  a) Briefing Book

     i) Contain a summary of the previous year's meeting;

     ii) Provide follow-up discussions from previous year's action items;

iii) Identify who is proposing that the Commission take a position on an issue (i.e., a state, NMFS, PSMFC staff, or other); iv) Provide a detailed report from the Executive Director (including items i and ii above) and plans for the next five years, including how to get there.

b) Annual Meeting
   i) Start with the Executive Director summarizing the Executive Director's report;
   ii) Have a copy of the previous year's transcript for review (Do not put in the briefing book).

c) Executive Committee
   i) Develop a role statement for the Executive Committee;
   ii) Review the previous Executive Committee role statement in Rules and Procedures; and
   iii) Meet on a more regular basis as appropriate.

- Annual Meeting Date
  The Commission directed staff to consider future annual meting dates that are later in the year than the current dates in August to maximize participation by state legislators and industry, in addition to federal legislative staffs (Vote: 5-0).

2001 ANNUAL MEETING

The 54th Annual Meeting of PSMFC will be hosted by the state of Oregon. The tentative meeting location and dates have not been determined.

ANNUAL PSMFC AWARD FOR CONTRIBUTION TO PACIFIC COAST FISHERIES

LADD MACAULAY and RICHARD LAUBER

The Commission's 2000 award for contributions to Pacific coast fisheries was jointly presented to Ladd Macaulay and Richard Lauber.

LADD MACAULAY

Ladd Macaulay was the visionary behind Douglas Island Pink and Chum, Inc. (DIPAC), one of Alaska's earliest private non-profit salmon hatcheries. A former biology and environmental education teacher in Juneau, Mr. Macaulay began to develop the idea of building a hatchery in the Juneau area during the early 1970's while he worked as a loan officer for the Alaska Department of Commerce. He spent many hours during these years visiting hatcheries, studying at the library, attending public meetings, and other activities to learn about the steps needed to set-up a private non-profit hatchery. Through his initiative, experience, and training with the Alaska Department of Fish and Game, he became a self-educated fish culturist.

Mr. Macaulay turned his vision for salmon enhancement into the original DIPAC hatchery located in the back yard of his family home on Kowee Creek. After having incubated salmon eggs on the back porch the first year, the permanent incubation facility became located in an old mining shaft the following year. By 1979, 20,000 to 30,000 pink salmon returned to the hatchery at Kowee Creek, a stream that had not seen salmon in the previous 7 years. Mr. Macaulay then left state employment and began building a second hatchery at Sheep Creek, south of Juneau. This hatchery with capacity for 20-million salmon eggs launched DIPAC as a major salmon producer in Northern Southeast Alaska.

A third facility, the Gastineau Salmon Hatchery (renamed the Macaulay Hatchery in 2000), was completed in June 1989 at a capital cost of 7.4 million dollars. This hatchery has the capacity to incubate 111 million chum, 50 million pink, 1.5 million coho and 700,000 Chinook salmon annually. Demonstrating Mr. Macaulay 's continuing dedication to education, the hatchery's visitor center was built to provide a place for adults and children to learn about salmon, their near-shore marine environment, hatcheries, and the Alaska commercial fishing industry. Next to the hatchery an "Urban Dock" was constructed to provide fishing opportunities for locals and visitors alike.

Mr. Macaulay retired as Executive Director of DIPAC and from its Board of Directors in 1997, returning to state service at the Department of Commerce and Economic Development. He died in a tragic automobile accident on April 19, 2000 while on state business visiting hatcheries in south-central Alaska. Mr. Macaulay will be sorely missed, but his legacy will live on through DIPAC. It is a shining example of how one man's dream can become a major influence on the state of Alaska's fishing industry, economy, and way of life.

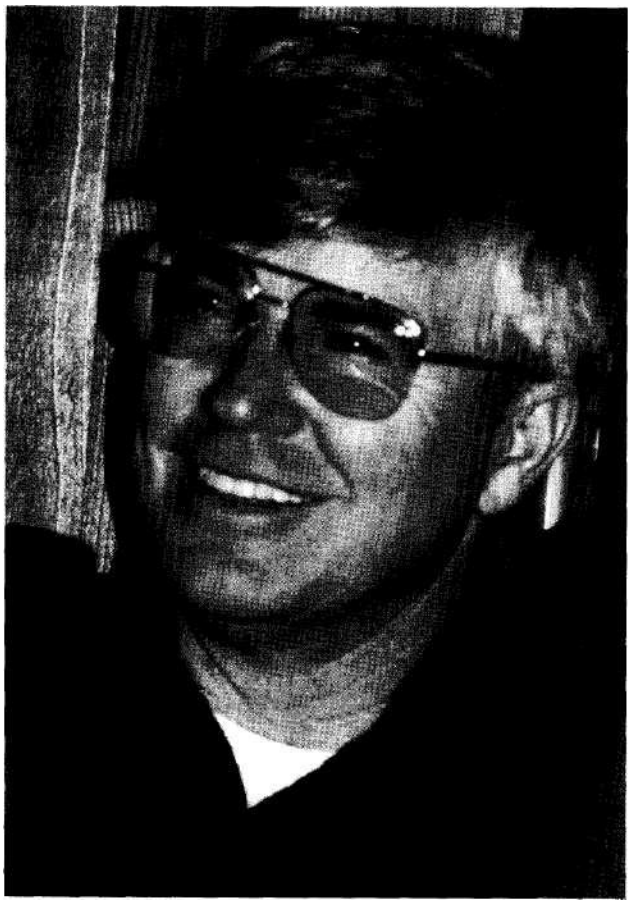


Figure 7. Mr. Ladd Macaulay was awarded posthumously the 2000 PSMFC Annual Award in recognition of his contribution to Alaska fisheries.

RICHARD LAUBER

An attorney and former District Court judge for the State of Alaska, Richard B. "Rick" Lauber was Vice President and the Alaska Manager of Pacific Seafood Processors Association from 1969 through 1998. He was first appointed to the Advisory Panel of the newly formed North Pacific Fishery Management Council in December 1976, and served continuously until his appointment to the Council itself in 1990. He was first elected Chairman of the Council in 1991, and was reelected nine more times until he retired in 2000.

Mr Lauber was a member of the Advisory Panel of the International North Pacific Fisheries Commission from 1971 through 1982, and a Commissioner of that organization and of its successor, the North Pacific Anadromous Fish Commission, from 1983 through 1995. During that period, he became involved in the negotiations that banned drift net fishing on the high seas. He has been active in other international fisheries negotiations, serving an advisor to the US State Department since 1972 on bilateral and multilateral negotiations with Japan, South Korea, Canada, USSR, Russia, Poland and China, and on the US/Russia Inter-Governmental Fisheries Consultative Committee since 1988.

Mr. Lauber has served on numerous fisheries policy committees, including the (Alaska) Governor's Fishery Policy Task Force, the (Alaska) Department of Environmental Conservation Task Force, and the US Marine Fisheries Advisory Committee of MAFAC. He received the Outstanding Service Award from the Bristol Bay Fishermen in 1991 and the US Coast Guard's Distinguished Public Service Medal in 2000. In support of fisheries-related education, Mr. Lauber helped establish the A.W. "Winn" Brindle Memorial Scholarship Fund.

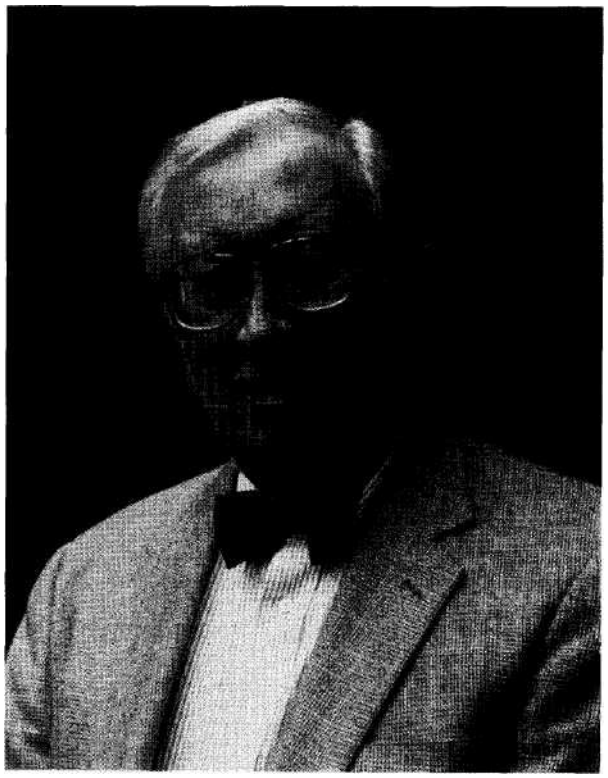
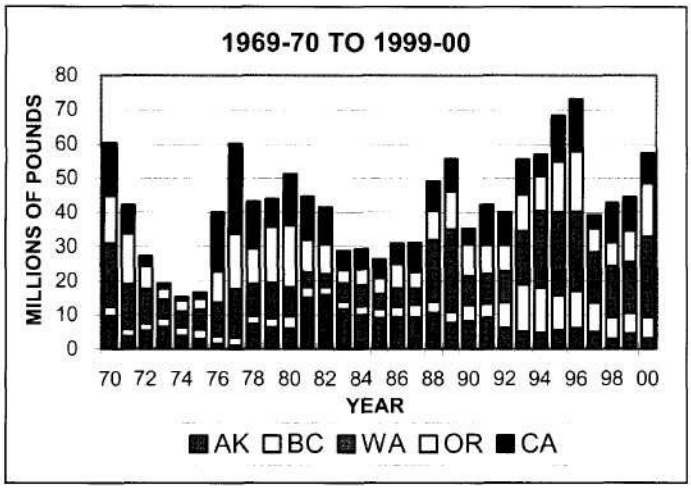
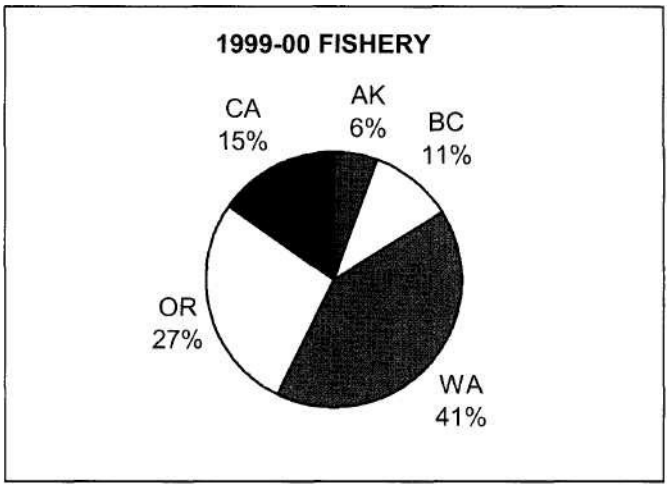


Figure 8. Mr. Lauber received the 2000 PSMFC Annual Award in recognition of his contributions to Alaska fisheries

It gives the Pacific States Marine Fisheries Commission great pleasure to recognize the contributions of both these outstanding individuals through this award for 2000.

DUNGENESS CRAB FISHERY IN 1999-00





Alaska

Total landings of Dungeness crab in 2000 were 3.21 million pounds, a 28% decrease from the 1999 total and 44% less than the previous 10-year mean. Ninety-one percent of the landings were from Southeast Alaska (2.9 million pounds) with the remainder reported from Kodiak, Chignik, the Alaska Peninsula, and the Bering Sea.

British Columbia

Province-wide landings of Dungeness crab in 2000 totaled 6.07 million pounds (2752 tonnes) which remained nearly identical to 1999 (2783 tonnes). Price per kg dropped from $7.49 (Can) in 1999 to $6.12 in 2000 which was reflected in an overall decrease in value of the fishery from $21 million in 1999 to $18 million in 2000. The fishery continues to be driven by landings from Area A (Hecate Strait) which decreased from 1,414 tonnes in 1999 to 1,090 in 2000. Area B (northern mainland) landings were also down from 128 to 97 tonnes. Area C (Strait of Georgia) landings were up from 493 tonnes to 592 tonnes. Area D (Fraser River) showed an increase from 512 tonnes in 1999 to 566 tonnes in 2000. Landings from Area E (west coast of Vancouver Island) nearly doubled from 236 tonnes in 1999 to 408 tonnes in 2000 as a result of a strong recruitment event.

Active licenses totaled 222, up from 220 in 1999 and effort showed an overall increase. Year 2000 was the first year of the second iteration of a 3-year license area selection. As a result, effort and landings in some license areas increased partly as a function of redistribution of licenses. Year 2000 was also the first year in which trap limits were implemented in all areas with an industry-funded compliance monitoring program. Trap limits vary by license area but are vessel length-based only in Area A.

A video monitoring system installed on all vessels in the Area A (Hecate Strait) fishery has proven to be very successful in reducing problems with gear theft, trap robbery, and other illegal crab fishing activities in this area and offers potential as a management tool. Preliminary indications from Area A suggest higher crab abundance in 2001 than during the past several seasons. Tofino (Area E) is also expected to show higher than average landings this year as a result of the 2000 recruitment wave. Other areas are not expected to vary significantly from normal. The fishery continues to be near fully exploited.

Washington

Landings for the 1999-00 Washington Dungeness crab fishery totaled 23.5 million lbs. The coastal fishery (treaty and non-treaty fishers) landed 17 million lbs. Non-treaty fishermen landed 16 million pounds with an ex-vessel value of 32.6 million dollars. Coastal treaty fishers landed 976,247 lbs. A total of 195 non-treaty and 20 treaty vessels made landings. The opening ex-vessel price for the coastal fishery was $1.75 per lb. The non-treaty season opened on December 1, 1999 and closed on September 15, 2000.

Total landings for the treaty and non-treaty Puget Sound fishery (October 1999 - May 2000) produced 6.5 millions lbs.

Oregon

Oregon Dungeness crab landings for 1999-00 season totaled 15.7 million pounds, 6.5 million over the previous season, and the fifth highest catch since at least 1947-48. The three leading ports were Newport, Astoria, and Coos Bay at 4.9, 4.4, and 2.1 million pounds, respectively. Monthly landings continue to be concentrated in the December-January period with 79% taken during this time period, compared to the most recent 13 average of 74%.

A total of 327 vessels were active in the ocean fishery making 8,866 landings. The number of pots continues to increase in Oregon's ocean fishery. A total pot estimate based on a summary of pot declared from pre season mandatory hold inspections and estimates for other non-inspected vessels produce a combined estimate of nearly 148,000 pots. Ex-vessel prices started strong in December at $1.74 per pound (a record), moving consistently to $3.01 in May and settling back to $1.95 at the end of the summer season in August. The overall monthly average of $2.00 was the highest in the history of the fishery and yielded a record high $31.4 million season ex-vessel value, nearly $10 million higher than any previous season value.

Oregon expanded its preseason crab quality-testing program into the central and south coastal areas prior to the start of the 1999-00 season. The biggest single issue in the fishery is possible action to adopt a pot limitation program for Oregon by the start of the 2002-03 season.

Table 1. Pacific Coast commercial landings of Dungeness crab (ir thousands of

Year	Alaska	British Columbia	Wash-ington	Oregon	California	Total
1969-70	9,696	2,548	18,675	13,849	15,564	60,332
70-71	3,749	1,963	13,211	14,735	8,501	42,159
71-72	5,448	1,975	10,095	6,780	2,875	27,173
72-73	6,423	2,580	5,583	3,143	1,500	19,229
73-74	3,818	2,500	4,604	3,462	880	15,264
74-75	3,036	2,513	5,896	3,335	1,816	16,596
75-76	1,545	2,121	9,885	9,099	17,410	40,060
76-77	1,162	2,269	14,023	16,200	26,404	60,058
77-78	7,169	2,592	9,237	10,375	13,800	43,173
78-79	6,334	2,599	10,362	16,352	8,300	43,947
1979-80	5,912	3,750	8,320	18,277	14,853	51,112
80-81	15,109	2,898	4,494	9,429	12,717	44,647
81-82	15,811	2,201	3,928	8,700	10,786	41,426
82-83	11,801	2,110	5,237	4,100	5,413	28,661
83-84	9,967	2,548	6,166	4,700	5,854	29,235
84-85	9,180	2,566	4,266	4,900	5,248	26,160
85-86	9,358	2,909	5,430	7,171	5,990	30,858
86-87	9,346	3,595	4,806	4,747	8,597	31,091
87-88	10,571	3,324	17,858	8,685	8,754	49,192
88-89	7,667	3,348	23,896	11,154	9,552	55,617
1989-90	8,145	4,695	8,629	9,236	4,548	35,253
90-91	9,062	4,096	8,870	8,248	11,950	42,226
91-92	6,210	7,349	9,163	7,561	9,806	40,090
92-93	5,016	13,865	15,532	10,873	10,077	55,363
93-94	4,575	13,217	22,532	10,243	6,445	57,013
94-95	5,670	10,007	24,240	15,052	13,242	68,211
95-96	6,132	10,870	23,188	17,681	15,184	73,056
96-97	4,944	8,647	14,630	7,046	4,006	39,272
97-98	2,900	6,434	14,911	7,086	11,381	42,711
98-99	4,461	6,134	14,832	9,115	9,885	44,427
1999-00	3,211	6,067	23,526	15,678	8,755	57,238
10-Year Mean	5,711	8,531	15,653	10,214	9,652	49,762

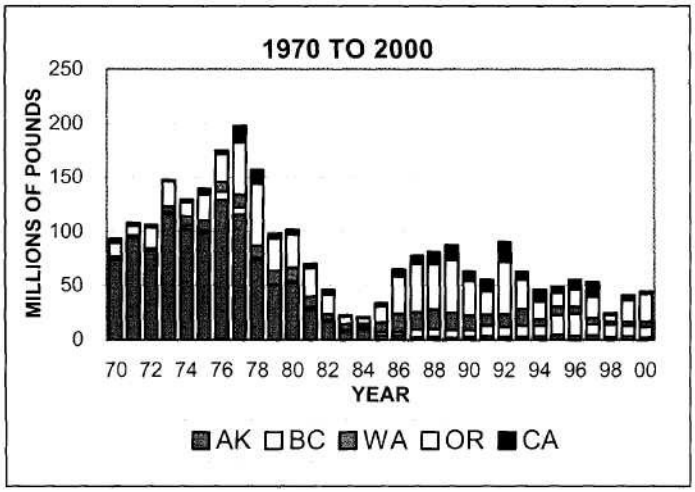
t Alaska and British Columbia crab catches are reported on a calendar year basis. The last year mentioned in this column is the calendar year. Washington, Oregon, and California catches are reported on a season basis that begins during the first year and ends the following year.

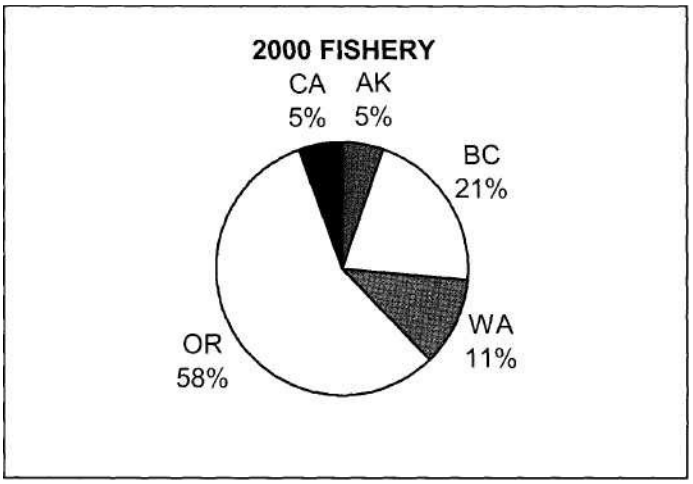
California

California Dungeness crab landings were 8.755 million pounds during the 1999-00 fishing year. This was 11% below the 10-year average and 1.13 million pounds lower than the previous season. Over 70% of the catch occurred in December, a pattern that is typical for this fishery. Eureka/Crescent City accounted for 83% of the landings, with Fort Bragg and the San Francisco/Bodega Bay area tallying six percent and 10%, respectively. The catch was valued at over $17 million ex-vessel.

Contributors:
Peggy Murphy, AKFIN
Antan Phillips, Department of Fisheries and Oceans, Canada
Heather Reed, Washington Department of Fish and Wildlife
Rod Kaiser, Oregon Department of Fish and Wildlife
Pete Kalvass, California Department of Fish and Game

SHRIMP FISHERY IN 2000





Alaska

Commercial landings of shrimp during 2000 totaled 2.37 million pounds, about 35% less than in 1999 and the previous 10-year average. Landings consisted of pink shrimp *(Pandalus eous,* 1.23 million pounds), sidestripe shrimp *(Pandalopsis dispar,* 0.22 million pounds), coonstripe shrimp *(Pandalus hypsinotus,* 0.08 million pounds), and spot shrimp *(Pandalus platyceros,* 0.85 million pounds). Approximately 1.45 million pounds were taken by trawl gear and 0.9 million pounds were taken by pot gear. Southeast Alaska accounted for about 97% of the landings by weight in 2000, but shrimp were also landed in Prince William Sound and Kodiak.

Table 2. Pacific Coast commercial landings of pandalid shrimp in thousands of pounds.

Year	Alaska	British Columbia	Wash-ington	Oregon	California	Total
1970	74,256	1,538	926	12,482	4,172	93,374
71	94,801	735	678	9,213	2,728	108,155
72	82,098	794	1,582	19,165	2,621	106,261
73	116,719	1,735	5,271	22,753	1,206	147,685
74	102,298	2,650	9,325	13,022	2,383	129,678
75	98,535	1,729	10,167	23,893	4,993	139,317
76	129,011	7,722	9,261	25,392	3,400	174,786
77	116,011	6,176	11,803	48,580	15,633	198,203
78	73,293	1,569	12,298	56,997	13,167	157,324
79	50,916	716	12,135	29,579	4,992	98,338
1980	52,568	1,500	12,629	30,152	5,050	101,899
81	28,029	2,070	10,084	25,924	4,166	70,273
82	16,987	1,515	5,042	18,462	4,550	46,556
83	7,458	1,636	5,747	6,547	1,151	22,540
84	9,539	2,013	3,453	4,844	1,658	21,506
85	4,204	2,628	9,134	14,855	3,381	34,203
86	4,064	2,901	17,460	33,884	6,758	65,066
87	2,457	7,196	15,948	44,589	8,023	78,214
88	2,773	7,233	18,226	41,846	11,236	81,314
89	2,000	6,876	15,909	49,129	13,351	87,265
1990	3,197	5,955	13,570	31,883	8,701	63,305
91	3,794	9,317	10,098	21,720	10,365	55,293
92	3,073	8,490	12,363	48,033	18,683	90,642
93	2,838	9,916	15,793	26,923	7,127	62,597
94	3,826	9,253	6,058	16,386	11,227	45,924
95	4,949	17,550	8,409	12,106	5,785	48,799
96	4,001	20,164	6,512	15,727	9,414	55,818
97	3,966	10,405	5,768	19,560	13,946	53,645
98	3,138	11,208	2,720	6,096	1,843	25,006
99	3,637	9,094	3,745	20,451	4,242	41,168
2000	2,371	9,434	5,053	25,455	2,459	44,772
10-Year Mean	3,642	11,135	8,504	21,888	9,133	54,220

British Columbia

Total landings of shrimp from both the commercial trawl and trap fishery during 2000 totalled approximately 9,433,549 pounds. Shrimp trawl landings in British Columbia in 2000 totalled 5,457,500 pounds, down from landings in 1999. Fishing areas on the west coast of Vancouver Island accounted for approximately 65% of the 2000 landing, which consisted primarily of *Pandalus jordani.* In contrast landings from the east coast of Vancouver Island accounted for approximately 22% of the total landings. The north and central coast areas accounted for the remainder of the landings (13%).

The commercial prawn trap fishery landed 3,976,000 pounds in 2000, up slightly from landings in 1999. The majority of the commercial prawn fishery landings were from the fishing grounds on the east coast of Vancouver Island (65%), with the remainder from the west coast of Vancouver Island (6%) and the north/central coast (29%).

Washington

Washington 2000 coastal pink shrimp *(Pandalus jordani)* landings totaled 4,352,908 pounds. Vessels fishing in Puget Sound landed an additional 699,965 pounds of pink shrimp. Compared to 1999, statewide landings increased by 35 percent in 2000 but were still below the recent ten year average of 8.5 million pounds. Coastal landings averaged 17,7667 pounds for the season. The number of vessels participating in the coastal fishery in 2000 totaled 31, but of those only 12 made more than ten landings during the season.

Oregon

The total 2000 pink shrimp *(Pandalus jordani)* harvest in Oregon was approximately 25.5 million pounds (Table 2), an increase of about 5.2 million pounds above the 1999 landing total. The fifteen-year average Oregon landing total was about 27.6 million pounds. A total of 108 vessels made 1,228 deliveries of pink shrimp into Oregon ports during 2000 compared with 121 vessels and 1,354 deliveries during 1999. Fishing effort expended harvesting shrimp that were landed into Oregon declined by about 20% in 2000, with a total of 38,738 hours spent fishing. Unlike other recent years with

Table 3. Oregon landings (pounds) of pink shrimp and effort (hours) during 1999 and 2000, by PFMC area of harvest

PFMC Area	Geographic Boundaries	2000		1999	
		Pounds	Hours	Pounds	Hours
72	Cape Flattery to Cape Elizabeth Cape	685,012	1,067	13,150	72
74	Elizabeth to Willapa Bay Willapa	1,145,700	2,186	162,053	501
75	Bay to Columbia River Columbia	44,566	139	739	5
82	River to Cape Falcon Cape Falcon to	3,466,084	4,675	3,069,170	8,363
	Cape Perpetua Cape Perpetua to	13,335,417	20,126	8,826,455	20,257
	Cape Blanco Cape Blanco to	5,680,990	9,425	7,053,795	15,683
	California border California border to	1,058,828	1,091	1,249,654	2,786
92	Cape Mendocino	38,666	29	76,220	289
Total		25,455,264	38,738	20,451,236	47,956

declining effort, the decrease was related more to market conditions than to shrimp availability on the grounds.

The 2000 shrimp fishery was functionally delayed nearly two months due to price disputes between shrimpers and processors, the longest delay in recent memory. The dispute involved not only the ex-vessel price per se, but the way that the price was determined. Many processors were only willing to pay according to a "finish count" of processed meats per pound, rather than by a price based on whole raw shrimp per pound as favored by most shrimpers. Once shrimping began, may processors placed their boats on trip limits that further slowed the harvest.

Shrimp harvest was focused in central and northern Oregon beds during 2000, much like the pattern in 1999. About 88% of the Oregon landings were harvested in areas 82, 84 and 86 (Table 3), with 50% produced in area 84 alone. The amount of shrimp taken off California and Washington but landed in Oregon remained low.

The weighted average count per pound (count) was 112 shirmp/lb in 2000. It was slightly lower than the 15-year average count of 114 and sharply lower than the 131 count seen in 1999. The low average count was good news to shrimper and processors alike, with processors reportedly not wanting shrimp that peeled at more than 500 meats/lb and with small shrimp fetching a reduced price. The age-2 percentage of the catch tripled over that seen in the 1999 catch. The good hold-over of age-2 shrimp (1999 age-1's), plus two months of pre-harvest growth of the 2000 age-1's during the tie-up in April and May probably contributed heavily to the low average count.

The ex-vessel shrimp price structure was more complex than usual during 2000. Most shrimpers agreed to fish in late May for $0.41 to $0.46 per pound, lower than the $0.50 initially received in 1999. Prices were variable between plants, often with a load being paid in three price increments. In mid-July, a common price structure was $0.46, $0.41, and $0.30 per pound, with most shrimp sold for $0.41 per pound. By October most shrimp were sold for $0.41 and $0.36 per pound.

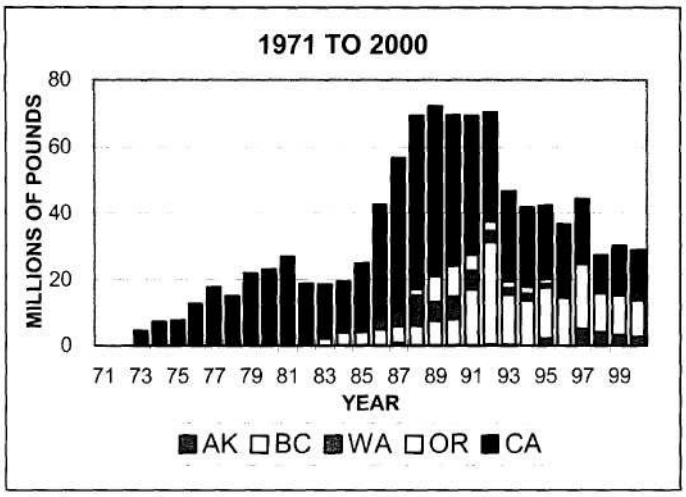
California

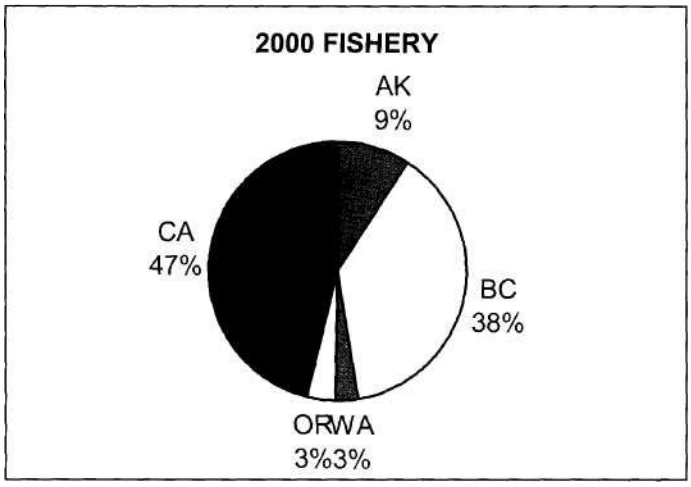
California's pink shrimp *(Pandalusjordani)* landings for the year 2000 totaled 2,459,000 pounds, the second lowest catch since 1984. This total was a decrease of 42% from 1999 and a decrease of 73% from the 10-year mean. The average price for the season was $0.39/lb in northern California. It took 54 boats 206 trips to land the total catch; in 1999, 63 vessels made 373 trips and caught 4,232,000 pounds. The northern California ports of Crescent City and Eureka landed 85% of the catch (2,083,000 lbs.) in 2000 which was almost the same percentage as the 84% landed in 1999.

California has had a moratorium on new shrimp permits since 1994. In 2000 a new restricted access policy was developed and will be initiated with the start of the 2001 shrimp season.

Contributors:
Peggy Murphy, AKFIN
Dennis Rutherford, Department of Fisheries and Oceans, Canada
Lorna Wargo, Washington Department of Fish and Wildlife
Stephen Jones, Oregon Department of Fish and Wildlife
Patrick Collier, California Department of Fish and Game

SEA URCHIN FISHERY IN 2000





Alaska

The 1999-2000 commercial red sea urchin fishery began in Southeast Alaska on October 1, 1999 with a total guideline harvest level (GHL) of 5,567,300 pounds in districts 1,2,3 and 4. Forty-seven divers took a harvest of 2.67 million pounds leaving 52 % of the GHL. Five processors bought product for an average of $0.37 per pound making the ex-vessel value of the fishery $1,012,377. The season ended on September 30, 2000 with an average roe percent of 7.9 for the season. Most of the harvest occurred around Duke Island and on the outer islands west of Prince of Wales Island. The 2000-2001 commercial red sea urchin fishery began on October 1, 2000 with a total guideline harvest level (GHL) of 6,806,700 pounds in districts 1, 2, 3 and 4.

British Columbia

The red sea urchin *(Strongylocentrotus franciscanus)* is one of three sea urchin species historically fished in British Columbia waters. Presently both red sea urchins and green sea urchins *(Strongylocentrotus droebachiensis)* are fished commercially under authority of a limited entry, category "Z" license. The current assessment of purple sea urchin *(Strongylocentrotus purpuratus)* stocks does not support a commercial fishery.

One hundred and ten (110) licenses are currently eligible for the red sea urchin fishery. The red sea urchin fishery operates on a non-calendar year, from July to June, implemented in July 1998. The previous year was a transitional year where the season ran from January 1997 to June 1998 (18 months). Red sea urchin landings during the 2000/2001 season totaled 10.6 million pounds. The coast-wide total allowable catch (TAC) for the 1999/2000 season was 5,601.5 tonnes (12.3 million pounds), with individual quotas of 112,265 pounds per license. For the 2000/2001 season the minimum size limit was reduced from 100 mm to 90 mm. This resulted in a 12 percent reduction in TAC for the 2000/2001 season to 4885.9 tonnes (10.8 million pounds), with individual quotas of 97,923 pounds per license. Fishing opportunities are scheduled; the North Coast is managed through a "Block System" which provides for a year-round supply of high quality product. The South Coast fishery is scheduled to take place primarily during the period of traditional peak market. Timing of fishery openings is developed in consultation with the Pacific Urchin Harvesters Association with the intent to meet market demands and to prevent local stock depletions.

The green sea urchin fishery is currently limited to 49 licenses. The fishing season runs from November to March with all eligible areas open concurrently. The majority of the fishery occurs in the South Coast where there is ready access to facilities for the shipment of live product to overseas markets. Open areas have been limited, since 1996, to areas with a known catch history. Development of further fishing opportunities are available through scientifically-based exploratory fishing protocols developed by Fisheries and Oceans Canada in consultation with the West Coast Green Sea Urchin Association. Green sea urchin landings during the 2000/2001 season totaled 399,665 pounds. The total allowable catch (TAC) for the 1999/2000 season was 427,393 pounds; the South Coast TAC was 414,393 pounds and individual quotas were set at 8,457 lbs ($1/49^{th}$ of the South Coast TAC). These values remained in place for the 2000/2001 fishing season. The North Coast TAC was made available under the exploratory fishing protocol.

Washington

Sea urchin landings during the 2000 season (October 2000 through approximately February 2001) is estimated at 853,000 pounds (603,000 pounds of red urchins and 250,000 pounds of green urchins). Total landings were up 16% from the previous season, even though the quotas were nearly identical to last year. This increase in landings was due mainly to the fact that Treaty Tribal and non-Indian divers took a combined 90% of the red urchin quota this season, compared to only 65% last season. Non-Indian catch-per-landing for red urchins in the San Juan management region was 2,416 pounds, up 36% from last season. Non-Indian catch-per-landing for red urchins in the Strait region was 2,145 pounds, up 18% from last season. Non-Indian green urchin catch-per-landing for the San Juan region was 1,194 pounds, up 25% from last year. Non-Indian green urchin catch-per-landing for the Strait region was 608 pounds, down 35% from last year. There are no significant changes expected to Washington state sea urchin quotas for the 2001 fishery.

Oregon

Red urchin landings for 2000 totaled 0.984 million pounds, a 296% increase over 1999 landings of 0.248 million pounds and reverses nine consecutive years of declining production (1991-1999). No purple urchins were landed during the year. Effort (diver deliveries) also increased from 347 deliveries in 1999 to 746 in 2000, up 215%. Improving markets and ex-vessel prices were reflected in a dramatic increase in ex-vessel value, $1.91 million compared to $0.14 million in 1999.

Permit numbers for 2000 were at 29 issued permits and 26 active with one or more landings. If the number of issued permits falls below 30 limited entry maximum, a lottery is held for the available permits.

California

The 2000 red sea urchin catch is estimated at 13.331 million pounds, with approximately 4.328 million pounds in northern California and 9.003 million pounds in the south. This represents a 6% decrease from 1999 statewide catch, but a 36% increase in the northern catch, with landings there up by 19%. The southern California catch fell by 18% over the previous year. Average statewide CPUE as catch per receipt (diver) was virtually unchanged at 840 pounds per delivery. There were 406 sea urchin permits sold in 2000, 15 less than 1999. Fishery value is estimated at $13,076 million compared to $13,244 million the previous year. Purple sea urchins taken totaled just over 20,000 pounds in 2000.

Mean test diameter for northern California catch-sampled red urchins was 108 mm, compared to the past 6-year mean of 105 mm. The southern California mean test diameter was at 94 mm compared to the past 7-year average of 97 mm. Minimum size limits are 89 mm and 83 mm in northern and southern California.

Densities of fishable stocks continue to be depressed at subtidal survey sites examined in the Fort Bragg area (the principal fishing area of northern California) since 1988. From 1988 to 1997 legal-sized red urchins surveyed outside of reserves, declined from 47 percent to 20 percent of the population, and from 0.8 per square meter to 0.2 per square meter surveyed. In contrast, during this period densities in two area reserves averaged over 3.0 red urchins per square meter. These patterns were observed to continue during northern California surveys in 1999 and 2000. Episodic and infrequent recruitment combined with intensive harvesting on the north coast have had a serious impact upon catches, as the fishery has devolved into a "recruitment" fishery, with fishers targeting harvest of newly recruited sea urchins.

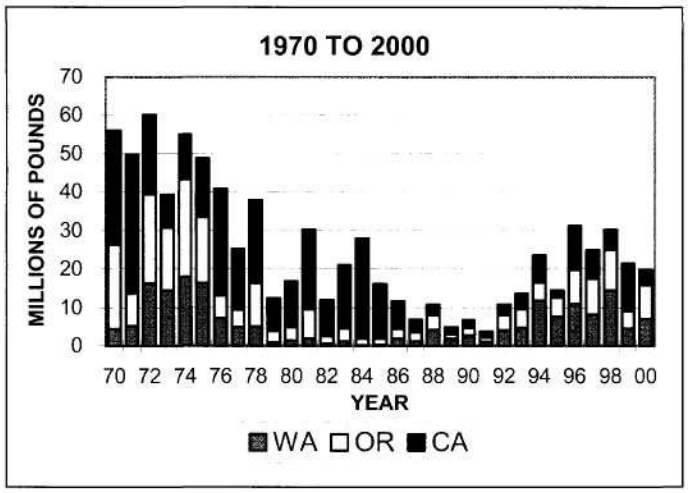
Table 4. Annual landings of sea urchins (in thousands of pounds) by state or province.

	Alaska	British Columbia	Wash-ington	Oregon	California	Total
1971		**	1.8		0.2	2.0
72		**	2.5		76.5	79.0
73		802.5	14.7		3,594.7	4,411.9
74		†	57.4		7,107.8	7,165.2
75		†	31.0		7,567.2	7,598.2
76		†	1,544.4		11,106.4	12,650.8
77		154.5	1,045.6		16,536.3	17,736.4
78		165.3	471.4		14,424.3	15,061.0
79		701.5	697.0		20,544.2	21,942.7
1980	*	733.7	132.9		22,167.1	23,033.7
81	*	254.2	304.2		26,333.7	26,892.1
82	*	349.4	40.6		18,403.9	18,793.9
83	*	2,173.3	497.2		15,809.4	18,479.9
84	107.4	3,890.1	604.5		14,746.5	19,348.5
85	126.0	4,001.2	878.8		19,994.9	25,000.9
86	282.4	4,561.9	3,501.2	55.8	34,130.7	42,532.0
87	757.1	5,142.1	4,908.3	202.8	45,636.8	56,647.1
88	244.9	5,713.9	9,357.9	1,947.3	51,988.0	69,252.0
89	187.0	7,274.8	5,739.7	7,842.6	51,187.3	72,231.4
1990	100.3	7,965.7	6,839.2	9,320.9	45,269.7	69,495.8
91	225.1	16,785.9	5,686.4	4,736.9	41,926.7	69,361.0
92	454.1	30,778.7	3,298.2	2,954.2	32,681.4	70,166.6
93	368.9	15,079.3	1,867.6	2,217.3	27,012.4	46,545.5
94	23.4	13,628.6	2,037.9	1,986.7	23,985.0	41,661.6
95	2,118.2	15,350.2	1,036.2	1,546.2	22,316.9	42,367.8
96	††	14,463.0	1,223.5	819.5	20,120.4	36,626.4
97	4,981.4	19,614.8	1,048.1	490.1	18,110.9	44,245.3
98	4,090.3	11,769.7	690.7	342.0	10,361.6	27,254.3
99	3,075.2	12,057.5	744.1	248.3	14,197.6	30,322.6
2000	2,678.4	11,015.6	852.9	984.0	13,331.0	28,861.9
10-year Mean	1,715.2	15,749.3	2,447.2	2,466.2	25,598.3	47,804.7

* Confidential Information; fewer than four fishermen with landings
** Data from 1971-73 combined
† Data from 1974-77 combined
†† Convert to season accounting; 1996-97 season Jan 96-Sept 97

Contributors:
Scott Walker, Alaska Department of Fish and Game
Peggy Murphy, AKFIN
Leslie Barton, Department of Fisheries and Oceans, Canada
Michael Ulrich, Washington Department of Fish and Wildlife
Rod Kaiser, Oregon Department of Fish and Wildlife
Pete Kalvass, California Department of Fish and Game

ALBACORE FISHERY IN 2000



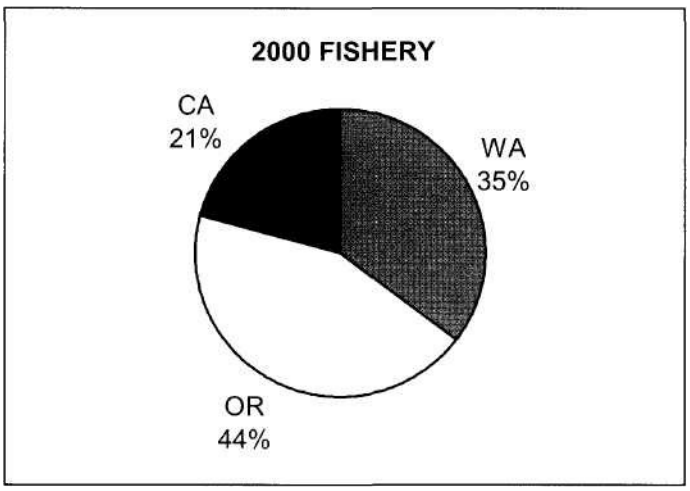


Table 5. Albacore i in *ton, Oregon, and California (in thousands of pounds).

Year	Washington	Oregon	California	Total
1970	4,390	21,782	29,932	56,104
71	5,250	8,420	36,117	49,787
72	16,238	23,056	21,001	60,295
73	14,446	16,350	8,641	39,437
74	17,983	25,225	11,806	55,014
75	16,297	17,166	15,413	48,876
76	7,202	5,934	27,754	40,890
77	4,948	4,420	15,905	25,273
78	5,008	11,285	21,549	37,842
79	830	3,107	8,508	12,445
1980	1,299	3,505	11,958	16,762
81	1,928	7,727	20,574	30,229
82	586	1,904	9,437	11,926
83	1,168	3,397	16,540	21,105
84	147	1,624	26,127	27,897
85	379	1,525	14,192	16,096
86	1,863	2,461	7,235	11,559
87	1,167	2,288	3,510	6,965
88	4,188	3,967	2,665	10,820
89	1,885	1,080	1,917	4,882
1990	2,700	2,079	1,900	6,679
91	943	1,258	1,494	3,695
92	4,110	3,889	2,772	10,770
93	4,778	4,754	4,027	13,560
94	11,855	4,698	6,982	23,536
95	7,523	5,034	1,833	14,390
96	10,954	8,948	11,340	31,242
97	8,323	9,168	7,399	24,890
98	14,396	10,601	5,312	30,308
99	4,588	4,551	12,317	21,455
2000*	6,994	8,759	4,137	19,891
10-year Mean	7,017	5,498	5,538	18,053

* Preliminary

Washington

Albacore landings in Washington during 2000 totaled 6,994,271 pounds, an increase over the 1999 landings of 4,574,469 pounds, and on par with the recent 10-year mean. Total landings by month were: 40,515 pounds prior to July; 502,477 pounds in July; 3,993,078 pounds in August; 1,912,555 pounds in September; 443,974 pounds in October; and 101,672 pounds during November and December.

A total of 198 vessels made landings in Washington in 2000, slightly below the number in 1999. Daily catch rates were higher than in 1999, and the average trip landed 15,000 pounds of albacore. The Washington port of Ilwaco received the majority of the deliveries, accounting for 66% of the total; landings in the port of Westport accounted for 29%, while landings in other Washington ports accounted for 6% of the total Washington albacore landings. Approximately 40 buyers purchased albacore, with four major buyers purchasing 91% of the total landed catch.

Oregon

Landings of albacore into Oregon ports began in June and continued through early November with the peak occurring in August. The preliminary total for commercial albacore landings in Oregon during 2000 is 8,759,354 pounds. This is a 92% increase from 1999. Astoria received the majority of deliveries (46%) followed by Newport at 43% and Charleston at about 6%. Other port accounted for the remaining 5% of landings.

A total of 372 commercial vessels landed albacore into Oregon in 2000, which is a 22% increase from 1999. The number of trips also increased from approximately 786 in 1999 to 882 in 2000. Catch per unit of effort was similar to 1999. The year 2000 again saw a weak offshore fishery with most of the landings into Oregon coming from inside the EEZ. Much of the fishery occurred off coastal Oregon and Washington. The ex-vessel price paid to fishermen for frozen product averaged $1,500 to $1,600 per ton until late in the season when it rose to $2,000 per ton.

California

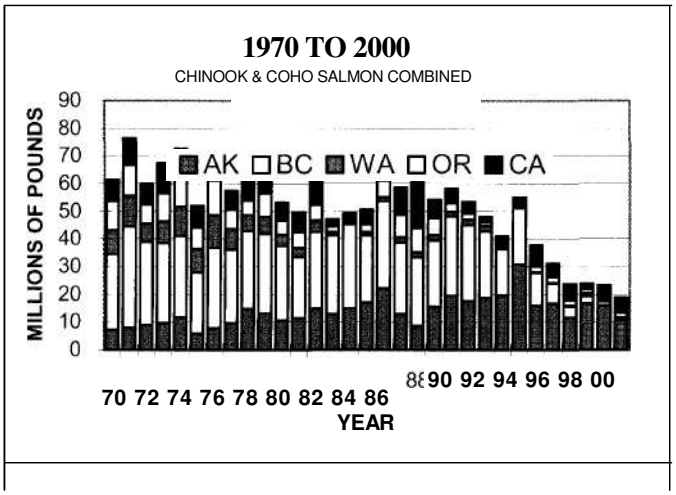
Despite an optimistic forecast for the 2000 albacore season, both the commercial and recreational components of the California fishery reported relatively low landings. According to market receipt data, a total of 390 commercial fishing vessels made 1,614 landings in California. More than

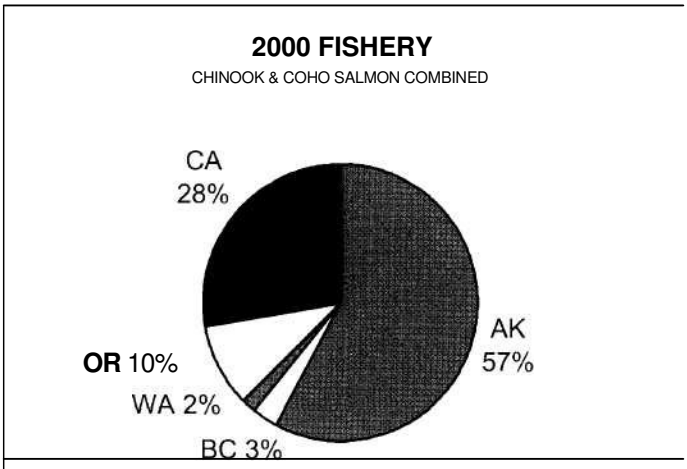
60 percent of these landings were less than 1,000 pounds. Ports from San Diego to Crescent City received deliveries of albacore, but unlike previous years, landings were distributed relatively evenly throughout the state, with San Pedro receiving a majority of the fish (28%), followed by Morro Bay (21%), Monterey (18%), and Eureka (17%). Peak landings occurred during the months of September and October. Overall, commercial landings statewide decreased 66 percent from 12.3 million pounds in 1999 to 4.1 million pounds in 2000, for an estimated total annual ex-vessel value of $3.8 million. The average price per short ton was $1,900, up $250 from 1999. As reported in 1999, a higher number of premium albacore are being sold to specialty markets for up to $6.00 per pound in 2000.

The recreational fishery got underway in early May and landings peaked by August. A majority of the fish were caught in the offshore waters adjacent to the US/Mexico border, in areas where the sea surface temperatures ranged from 65° to 69° F. A total of 69,000 albacore were landed during the 2000 season which represents a 65 percent decrease from the 21-year period high of 180,970 fish reported in 1999. The average weight of albacore in 2000 was 19.5 pounds for an estimated annual yield of 1,343,440 pounds.

Contributors:
Wendy Beeghley, Washington Department of Fish and Wildlife
Rhonda Haynes, Oregon Department of Fish and Wildlife
Stephen Wertz, California Department of Fish and Game

TROLL SALMON FISHERY IN 2000





Alaska

For the 2000 season, the troll harvest of Chinook salmon was managed to: 1) comply with the June 1999 PSTA, 2) continue the Southeast Alaska natural Chinook salmon conservation program, 3) provide maximum harvest of Alaska hatchery-produced Chinook salmon, 4) minimize incidental mortality during Chinook salmon non-retention periods by closing areas of high Chinook salmon abundance, and 5) to comply with terms of the incidental take permit issued by the NMFS. Alaska's all-gear quota was set on a catch rate initially based on a preseason abundance estimate and was later adjusted, based on an inseason estimate of abundance. The 2000 Chinook harvest was managed to achieve an all-gear harvest of 190,000 Treaty Chinook salmon (treaty fish).

The 2000 winter troll fishery began October 11, 1999, and continued through April 14, 2000. By regulation, the open area during the 2000 winter season was restricted to those areas of Southeast Alaska lying east of the surfline south of Cape Spencer, and the waters of Yakutat Bay. All outer coastal areas, including the EEZ, are closed during the winter fishery.

Under the BOF troll fishery management plan, the winter fishery remains open until either a harvest of 45,000 Chinook salmon is reached, or until April 14. A total of 310 vessels participated in the 2000 winter fishery, and harvested a total of 36,000 Chinook salmon (23% of the 2000 total troll chinook salmon harvest). The harvest increased by 14% and harvest per landing increased slightly when compared to the 1999 season.

Experimental and terminal fisheries (collectively called spring fisheries) target Alaska-origin hatchery chinook salmon, except for the Cross Sound fishery, which targets chum and pink salmon. Experimental troll fisheries were opened in mid-April, and terminal areas were opened in accordance with private non-profit hatchery (PNP) board schedules. In general, experimental fishing areas were initially opened by emergency order for 2-days per week (Monday-Tuesday). Some areas were initially opened for longer periods, based on historic run timing of Alaska hatchery fish. Department personnel examined fish deliveries, and the heads of adipose fin-clipped fish were shipped to the state tag lab in Juneau. CWT data that was provided by the tag lab was used inseason to estimate the Alaskan hatchery contribution to the harvest in each area. Fishing time for the following week was determined using this information in combination with historic harvest timing information in each area. Fishing time was extended or curtailed during the week by emergency order as more tag data and harvest information became available.

A total of 397 vessels participated in the 2000 spring fisheries and hatchery terminal area fisheries, and harvested 29,000 chinook, 1,000 sockeye, 1,600 coho, 4,700 pink and 79,000 chum salmon. The chinook harvest was similar to the

1999 harvest, but the Alaska hatchery contribution increased from 54% to 63%. The highest chinook salmon harvests were in the Hidden Falls area, followed by the Eastern Channel and Middle Island areas. The majority of the pink and chum salmon were harvested in the Cross Sound pink and chum salmon experimental fishery. Two new areas in North and South Sumner Strait were opened in 2000 to assess the Alaska hatchery chinook salmon contribution there, as this area was not sampled during the hatchery access fisheries in 1989 to 1992. Most fishing occurred in South Sumner and produced an Alaska Hatchery percent of 27%. In 2000 two new areas were opened in Icy Strait, Homeshore and South Passage. These areas had been closed since the Hatchery Access Fisheries of 1989-91, and were reopened based on high Alaska hatchery contributions to the winter and summer fisheries. Homeshore was a very successful experimental area, producing a 40% Alaskan hatchery percent while South Passage produced 0% Alaska hatchery percent due to low catch and effort.

In 2000, the department received the preseason abundance index of 1.14 in late June, which translated to an all-gear quota under the PSTA of 190,000 fish. Under the current BOF commercial fisheries plan, the troll and sport fisheries divide the treaty quota in 80/20 split, after 8,600 plus 4.3% of the Treaty chinook salmon quota are subtracted from the quota for the commercial net fisheries. The seine fleet was allocated 8,200 fish, the drift gillnet fleet 7,600 fish, and the set gillnet fleet 1,000 fish. The remainder, 173,000 fish, was then initially divided between the troll and sport fisheries in an 80/20 split, which translated to 138,000 fish to the troll fishery, and 35,000 fish to the sport fishery.

Table 6. Pacific Coast commercial troll landings of chinook salmon in millions of pounds round weight. *

Year	Alaska	British Columbia	Wash-ington	Oregon	California	Total
1970	5.1	9.9	2.5	1.9	6.1	25.5
71	4.9	15.2	3.1	1.2	5.7	30.1
72	3.3	14.1	2.6	1.5	6.2	27.7
73	5.0	12.7	3.8	4.0	8.7	34.2
74	5.1	13.5	4.3	2.6	5.8	31.3
75	4.4	12.6	3.3	3.0	6.6	29.9
76	3.5	13.8	4.4	2.2	5.7	29.6
77	4.7	12.1	3.3	4.0	6.6	30.7
78	6.8	13.2	2.4	2.2	6.0	30.6
79	6.0	11.1	2.0	3.0	7.9	30.0
1980	5.5	11.6	1.9	2.5	6.4	27.9
81	4.7	9.9	1.4	1.8	6.8	24.6
82	4.5	11.9	1.9	2.7	8.5	29.5
83	4.3	9.5	0.8	0.8	2.4	17.8
84	4.4	11.1	0.2	0.6	2.3	18.7
85	4.0	9.3	0.6	2.3	5.2	21.4
86	4.7	8.6	0.7	3.9	7.6	25.5
87	5.3	10.2	1.1	6.0	9.5	32.1
88	4.3	11.3	1.5	5.0	16.5	38.6
89	5.2	8.6	1.2	4.1	6.2	25.3
1990	5.6	9.2	0.6	2.5	4.7	22.6
91	5.2	8.3	0.8	0.8	3.7	18.8
92	3.3	10.1	1.0	1.2	1.9	17.5
93	4.4	8.7	0.6	0.9	2.9	17.5
94	3.4	6.6	0.1	0.3	3.6	14.0
95	2.6	2.6	0.1	2.1	7.6	15.0
96	2.8	0.0	0.2	2.2	4.7	9.9
97	4.2	2.7	0.2	1.8	6.0	14.8
98	3.8	2.6	0.9	1.6	2.0	10.9
99	2.5	1.40	0.4	0.8	4.4	9.7
2000t	2.8	0.6	0.2	1.7	5.2	10.4
10-Year Mean	3.8	5.2	0.5	1.4	4.2	15.1

* Troll-caught salmon are landed dressed. Round weights are projected.
t All 2000 data are preliminary.

The general summer season troll harvest target was estimated by subtracting the estimated winter Treaty fish harvest (33,000 fish), spring fishery harvest (10,000 fish), the pre-Treaty production of Alaska hatchery fish (3,700 fish), and an estimated 1,000 fish risk factor (the standard error of the projected Alaska hatchery chinook salmon harvest), from the yearly PST quota allocated to the troll fishery. This resulted in an initial estimate of 90,000 Treaty fish for the general summer quota. According to the BOF plan, 70% (63,000 fish) of these were to be taken in the first opening, and the remaining 30% (27,000 fish) harvested following any closure for coho salmon management in August. The first opening was managed for a harvest of 63,000 treaty fish, plus about 4% Alaska hatchery fish, or 66,000 total fish.

Based on past fishery performance at various abundance indices, and anecdotal information from the sport fisheries in Sitka and Craig, the first summer troll chinook salmon fishery was estimated to last for five days. The fishery was not managed inseason using the FPD program because a minimum of five days is needed to accurately assess the regionwide Catch rate. Therefore, the general summer troll was opened July 1-5. The harvest during the first chinook salmon opening was 52,000 chinook salmon, of which 50,000 counted as treaty fish. The harvest per fleet day was 10,400 fish per day.

Following the first opening, the areas of high chinook salmon abundance were closed. After the fish ticket data were reviewed it was apparent that the target had not been met for the first opening. There were approximately 40,000 chinook salmon left to be harvested for the remainder of the summer. There was concern that it would be difficult to catch that many fish in the August opener; therefore the troll fishery was reopened August 11-12, before the ten-day coho closure. Approximately 11,000 chinook salmon were harvested in this two-day opener. When the troll fishery reopened on to both coho and chinook retention on August 23, the fishery was monitored in-season using FPD and on-the-grounds catch information. After six days it was thought that the remainder of the summer troll allocation had been caught, therefore the fishery was closed August 30. Approximately 25,000 chinook salmon were harvested in this third summer opening, of which 23,000 were treaty fish. Approximately 10% of the chinook harvested in this third opening were of Alaska Hatchery origin, this was a higher hatchery percentage than was originally anticipated. After this third opening there were still chinook salmon remaining on the quota, therefore the fishery reopened to king salmon possession on September 12 and remained open until the summer closure on September 20. Approximately 5,500 chinook were harvested in this final opening, bringing the summer total harvest to 93,800 fish, of which 88,200 were treaty fish. The final summer troll harvest brought the total 2000 troll chinook harvest to 159,000 fish, of which 134,000 were treaty fish, this was below the troll treaty quota of 138,000 fish although it was within the 7.5% management range designated by regulation.

Coho salmon retention began by regulation on June 15, during the spring fisheries, but few were caught until the general summer season opened on July 1. The late-July assessment indicated that the run was projected to be greater than the conservation threshold of 1.1 million wild coho salmon. A second assessment in early August (week 32) indicated that a closure of the troll fishery was necessary for conservation and allocation, primarily in the northern inside areas. At the time of the second assessment, the troll harvest (752,000) was 187% greater than the 1971-1980 base period average (262,000). Catch rates were

above average in most areas through late July, but they dropped to near or below average after the ten day closure. Overall, the drift gillnet harvest was 7% greater than the base period (1971-80). Weekly and cumulative catch rates in the Juneau marine sport fishery were below the base. Therefore, the troll fishery was closed for ten days beginning August 13.

In mid-September, the coho salmon return was assessed to evaluate an extension of the trolling period beyond September 20. Although escapements were being met in the indicator streams, 2000 was not a year of "high coho abundance" based on catch rates in the troll and drift gillnet fisheries, CWT information and escapement. Therefore the coho salmon fishery was not extended past September 20.

The 2000 troll coho salmon harvest of 1.12 million fish was 1.1 million fish less than the 1999 harvest. The BOF management plan allocates 61% of the long-term commercial harvest to the troll fleet. In 2000, the troll portion was 67%, bringing the average since 1989 to 63%. Average head-on, dressed weight of coho salmon was 6.5 pounds in 2000, this was 0.1 pounds less than the recent 5-year average.

A total of 4,500 sockeye salmon, 187,000 pink salmon, and 478,000 chum salmon were harvested during the 2000 troll season. This was the lowest harvest of sockeye salmon since 1982, the lowest harvest of pink salmon since 1986 and the second highest harvest of chum salmon since statehood.

In 2000, the Alaska Commercial Fisheries Entry Commission (CFEC) renewed 899 power troll permits and 1,006 hand troll permits, a 9% decrease in renewals from 1999. Preliminary estimates indicate that 717 power troll permits and 318 hand troll permits units were actually fished, representing a 1% decrease in the power troll effort and a 4% decrease in hand troll effort when compared to the 1999 season.

Washington

The Pacific Fishery Management Council set a total allowable harvest of 25,000 Chinook and 100,000 landed coho for non-Treaty fishers in 2000. The commercial and recreational fishery representatives agreed in-season to trade part of the commercial allocation of coho for part of the recreational allocation of Chinook. This resulted in an allocation of 13,500 chinook and 21,000 coho to the non-Treaty troll fishery.

The 2000 non-Treaty troll fishery opened May 1 in the area between the U.S.-Canada border and Cape Falcon until the earlier of June 15 or attainment of 11,000 chinook. All salmon except coho could be legally retained. Catch rates were high in the northern area known as the "prairie" , but the fishery operated uninterrupted until its automatic closure date of June 15. The fishery was open for a total of 46 fishing days.

The non-Treaty troll fishery reopened on August 4 in the area between the Queets River and Cape Falcon for all salmon species. This fishery was opened on a cycle of 4 days open/3days closed until the earlier of September 30 or attainment of 21,000 coho or the overall chinook quota. The fishery was open August 4-7, August 11-14, August 18-21, August 25-28, and September 1-5, for a total of 21 fishing days.

Landings from the non-Treaty troll fishery in the area north of Cape Falcon totaled 12,900 chinook and 17,300 coho. This represents 95% of the chinook quota and 82% of the coho quota. A total of 0.140 million round pounds of chinook and 0.036 million round pounds of coho were landed.

The 2000 Treaty Indian salmon troll fisheries were constrained by a low forecast of Washington coastal naturally spawning coho salmon stock. Other constrains on the fishery came from low Queets River natural coho, and with concerns for impacts on Puget Sound and Columbia River chinook salmon. The 2000 season consisted of a directed chinook salmon season conducted between May 1 and June 30 and an all species season from August 1 to September 15. A season total of 7,625 chinook and 22,174 coho were landed. These catches represent 30% of the 25,500 chinook quota and 111% of the 20,000 coho quota. From the 232 landings, there were a total of 69,222 pounds of chinook and 109,988 pounds of coho. The 2000 season ran for 72 days for the Makah Tribe, and 75 days for the Quinault Nation, Hoh Tribe and Quileute Tribe. Areas 2,4, and 4b were the main areas fished during the 2000 salmon treaty troll season.

Oregon

Oregon troll chinook landings in 2000 totaled 136,400 fish and 1,703,100 pounds (round weight), coho landings totaled 12,000 fish and 82,200 pounds (round weight) from a total of 7,506 boat days of effort.

The year 2000 saw the first commercial hatchery coho selective fishery in Oregon. This was the first commercial opening for coho salmon in 7 years. All fisheries to the south of Cape Falcon were closed for coho and had terminal gear limitations of no more than 4 "spreads" per wire to reduce interceptions of coho salmon.

The area north of Cape Falcon to the US Canada Border was open May 1 through June 15 for all species except coho, and was limited to a quota of 11,000 chinook. The control zone at the mouth of the Columbia River remained closed to all

Table 7. Pacific Coast commercial troll landings of coho salmon in millions of pounds round weight. *

Year	Alaska	British Columbia	Wash-ington	Oregon	California	Total
1970	2.2	17.3	6.1	8.7	1.5	35.8
71	3.1	21.4	7.9	10.1	3.7	46.2
72	5.7	15.9	3.9	5.6	1.2	32.3
73	4.5	16.2	4.3	5.9	2.3	33.2
74	6.7	15.6	6.4	8.3	4.3	41.3
75	1.5	9.5	5.1	4.7	1.3	22.1
76	4.3	15.3	7.2	10.4	3.3	40.5
77	4.9	14.4	4.3	3.0	0.2	26.8
78	8.0	14.9	3.2	3.2	1.5	30.8
79	7.1	17.7	4.2	5.3	1.2	35.5
1980	5.0	15.3	2.3	2.5	0.3	25.4
81	6.7	12.2	2.0	3.8	0.5	25.2
82	10.2	15.8	2.2	3.1	0.6	31.9
83	8.5	18.9	0.3	1.3	0.3	29.3
84	10.4	19.2	0.3	0.1	0.4	30.5
85	13.2	14.8	0.6	0.6	0.1	29.3
86	17.3	23.1	0.7	2.2	0.8	44.1
87	7.7	15.5	0.7	2.2	0.3	26.4
88	4.4	13.3	0.3	3.8	0.4	22.2
89	10.4	15.1	0.7	2.3	0.3	28.8
1990	13.8	19.5	1.0	0.7	0.4	35.4
91	12.5	19.1	1.1	1.6	0.5	34.7
92	15.5	13.8	1.0	0.2	0.0	30.5
93	15.3	8.0	0.4	0.0	0.0	23.6
94	27.3	13.8	0.0	0.0	0.0	41.0
95	13.3	9.2	0.3	0.0	0.0	22.8
96	13.9	7.2	0.2	0.0	0.0	21.2
97	7.5	1.3	0.0	0.0	0.0	8.9
98	12.9	0.0	0.0	0.0	0.0	13.0
99	13.4	0.0	0.2	0.0	0.0	13.6
2000	8.0	0.0	0.1	0.1	0.0	8.2
10-Year Mean	14.5	9.2	0.4	0.3	0.1	24.5

* Troll-caught salmon are landed dressed. Round ghts are t
All 2000 data are preliminary

salmon fishing. There were eight Oregon landings in this fishery totaling 245 Chinook.

In 2000, the area from Queets River, Washington to Cape Falcon, Oregon was scheduled to be open from August 4 through the earliest of September 30 or the 1,500 chinook guideline or the 25,000 finclipped hatchery coho quota. The area ultimately fished under a revised quota of 22,290 coho and a revised guideline of 3,750 chinook. The season was open August 4 through 7 and August 11 through 14 with a vessel limit of 300 coho per open period in place. The season was open without vessel limits August 18 through 21, August 25 through 28, and September 1 through 5. Oregon landings in this season totaled 12,000 coho and 2,000 chinook

The area from Cape Falcon to Humbug Mountain was open for all species except coho from April 1 through July 22, August 1 through 29, and September 1 through October 31. The fishery was open without quota limitations, and the 2000 catch totaled 128,300 chinook. The Tillamook Bay Control Zone was closed April 1 through 30 and June 1 through September 15. In addition, there was a state waters fall chinook terminal fishery off Tillamook Bay from November 1 through 15. A state waters fall chinook terminal fishery was also open off the mouth of the Elk River from November 1 through December 15. Landings were restricted to Port Orford, and there was no quota limiting the season. Catch in this season totaled 1,900 chinook.

In the area from Humbug Mountain to the Oregon/California border fishing occurred from May 1 through 31 for all species except coho. There was no quota on this fishery. The total catch was less than 50 chinook.

The area from Sisters Rocks to the Oregon/California border (0-4 miles off shore) was open for all species except coho with a 1,300 chinook quota from August 1 through 11. Landings were restricted to Port Orford, Gold Beach, and Brookings. The fishery slightly exceeded the quota with total landings of 1,400 chinook.

The area from House Rock to Humboldt South Jetty, California was scheduled to be open for all species except coho September 1 through 30 under a 7,000 chinook quota with a 1,000 chinook harvest guideline for landings into Brookings. There was a daily landing and possession limit of 30 fish. The harvest guideline for landings into Brookings was met early in the season and Oregon waters were closed from September 6 on. From September 1 through 5, 1,200 chinook were landed into Oregon. An additional state waters fall chinook terminal fishery occurred off the Chetco River (Goat Island to 42°01'20" N. latitude) from October 16 through 28. Landings were restricted to Brookings. There was a 20 chinook daily landing limit per vessel, and an overall quota of 1,000 chinook. A total of 900 chinook were landed during this season.

California

In 2000, the troll season north of Horse Mountain was open from the Oregon-California Border south to the southern jetty at the entrance of Humboldt Bay from September 1 through September 30, under a 7,000-chinook quota. Between Horse Mountain and Point Arena, commercial salmon fishing was allowed from September 1 through September 30.

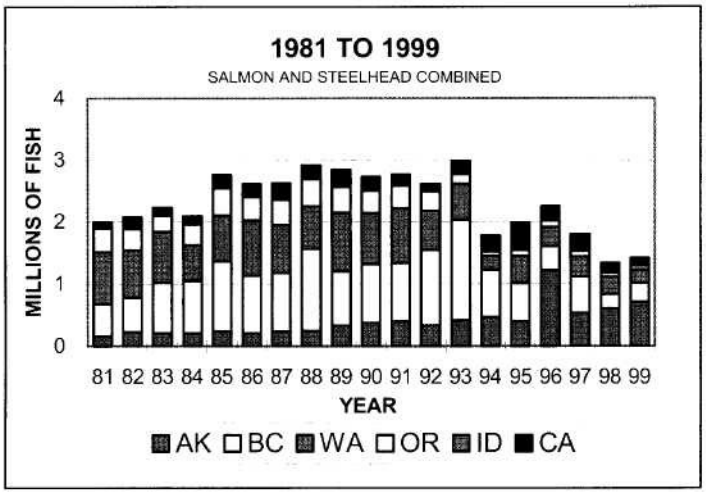
In the area between Point Arena and Point Reyes, fishing occurred from July 18 through September 30. For a third year, a test fishery inside six nautical miles was conducted between Fort Ross and Point Reyes from July 1 through July 3 and July 5 through July 15, under a 4,500 chinook quota. Landings were restricted to Bodega Bay with a daily landing limit of 30 fish per day. From Point Reyes to Point San Pedro, fishing occurred from May 29 through September 30. From Point San Pedro to California-Mexico Border, fishing occurred from May 1 through August 27.

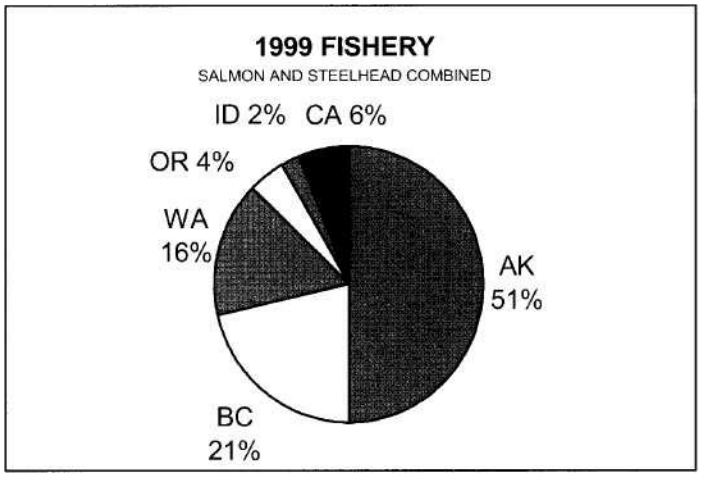
Statewide, the minimum size limit for chinook was 26 inches total length until July 1 when it increased to 27 inches total length. Barbless hooks were required with no more that 6 lines per vessel. When fishing with bait and angling by any other means than trolling, single-point, single-shank circle hooks were required.

California's preliminary troll chinook landings were 5.2 million pounds (round weight), which was 17% higher that 1999's 4.4 million pounds (round weight) and approximately 25% higher than the previous 10-year average of 4.2 million pounds (round weight). The sharp increase in California's 2000 troll chinook landings was primarily due increased abundance of Central Valley chinook and Klamath River fall chinook salmon. The commercial fishing for coho was closed the entire season.

Contributors:
Gary Timothy, Alaska Department of Fish and Game
John Davidson, Department of Fisheries and Oceans, Canada
Wendy Beeghley, Washington Department of Fish and Wildlife
Lee Hoines, Washington Department of Fish and Wildlife
Sandy Zeiner, Northwest Indian Fisheries Commission
Justine Benson, Oregon Department of Fish and Wildlife
Scott Barrow, California Department of Fish and Game

SALMON AND STEELHEAD SPORT HARVESTS IN 1999





Alaska

An estimated 707,414 salmon of all species were taken in saltwater recreational fisheries off Alaska in 1998. Marine fishery harvest totals increased 37% from 1998 due to increased harvests of all species except chum salmon (down 44%). Harvests of pink salmon increased 47%, while harvests of coho, sockeye, and chinook salmon were up 45%, 29%, and 22%, respectively. In the past decade, only about 41% of the total recreational harvest of salmon is taken in marine fisheries. The total (saltwater + freshwater) statewide harvest of anadromous salmon increased 20% from 1998, and at 1.397 million fish was the highest on record.

The statewide steelhead harvest increased over 1998, but was still relatively small with only 675 fish reported harvested. An estimated 35,159 fish (98% of the total catch) were caught and released by anglers.

British Columbia

Recreational salmon harvests in British Columbia tidal waters during 1999 increased from the lows of 1998. The harvest estimate of 294,200 salmon of all species is considered preliminary. Salmon harvests were 32% higher than in 1998 but 63% lower than the previous 10-year average.

Anglers in British Columbia harvested an estimated 5,062 steelhead during the April 1999 through March 2000 season, 26% less than the 1998-99 season and 39% less than the previous 10-year average. An estimated 90,381 fish (94.7% of the total catch) were caught and released.

Washington

Marine recreational anglers in Washington harvested a total of 43,420 chinook salmon, 73,561 coho salmon, 30,638 pink salmon, 2,818 chum salmon, and 27 sockeye salmon in 1999. The total of 150,464 salmon harvested in marine Catch Record Card Areas 1 - 13 in 1999 was slightly below the harvest in 1998 but 65% below the previous ten-year mean.

The 1999 Washington sport harvest of steelhead was 75,322 fish. This is 25% above 1998 but 36% below the previous ten-year mean.

Oregon

Oregon ocean recreational anglers harvested a total of 21,381 salmon of all species in 1999. This was substantially higher than the 6,293 seen in 1998, due largely to expanded selective hatchery coho fishing opportunities. Chinook salmon harvest by the ocean sport fishery increased from 4,021 in 1998 to 7,722 in 1999, but was still below the 1979-1998 average of 22,474 chinook. Traditionally chinook salmon in the Oregon ocean fishery have been taken incidentally by anglers targeting coho salmon, and the low recreational chinook catch is due largely to the limited coho salmon seasons. The ocean recreational harvest of coho was the highest since 1994 when all ocean coho seasons were closed. This was the first year that selective coho salmon fisheries occurred both north and south of Cape Falcon. A total of 13,644 coho salmon were landed in 1999 compared to the 2,272 coho landed in 1998. The 1999 catch was only 9% of the 1979-98 average of 146,375.

Preliminary license tag estimates indicate that anglers

Table 8. Salmon and steelhead sport harvests in 1999

State/Province	Chinook	Coho	Pink	Other Salmon*	Steelhead	Total
Alaska	89,948	432,794	142,947	41,725	675	708,089
British Columbia	172,000	21,500	90,000	55,270 00	5,062	299,262
Washington	43,420	73,561	30,638	2,845	75,322	225,786
Oregon	7,722	13,644			39,573	60,939
Idaho					31,841	31,841
California	87,800				NA	87,800
Total	400,890	541,499	263,585		152,473	1,413,717

Sockeye and chum salmon

Marine salmon fishery harvests only.

Table 9. Pacific coast salmon and steelhead harvest in thousands offish, t

	Alaska		British Columbia		Washington		Ore; ;on		Idahc		California		Total	
Year	Salmon	Steelhead	Salmon	Steelhead	Salmon	Steelhead	Salmon	Steelhead	Salmon	Steelhead	Salmon	Steelhead	Salmon	Steelhead
1975	NA	2.2	947.5		1,297.8	92.9	329.1	185.5	0.0	0.0	125.0		2,699.4	280.6
76	NA	2.3	982.6		1,649.0	89.1	580.7	118.3	0.0	2.0	139.0		3,351.2	211.7
77	146.3	3.7	NA	18.2	1,094.6	100.0	260.7	145.1	3.5	13.0	117.8		1,622.9	280.0
78	171.1	4.3	NA	14.7	1,021.0	163.1	282.6	200.6	7.0	11.5	114.0		1,595.7	394.2
79	142.0	3.0	NA	12.7	1,035.2	94.8	202.3	122.4	closed	5.7	140.9		1,520.4	238.6
1980	168.5	4.8	NA	10.9	747.4	151.1	344.9	203.7	closed	9.1	106.4	Steelhead	1,367.2	379.6
81	152.2	3.3	514.3	10.0	702.0	125.1	230.6	155.0	closed	13.0	94.6	harvests	1,693.7	306.4
82	221.3	3.7	538.9	13.5	658.1	104.2	213.8	135.1	closed	20.5	165.4	were	1,797.5	277.0
83	203.9	5.4	792.1	15.1	751.8	78.6	171.7	84.2	closed	32.2	91.0	not	2,010.5	215.5
84	202.5	6.5	828.1	18.9	419.3	149.5	139.6	198.4	closed	25.1	106.8	estimated	1,696.3	398.4
85	239.7	4.7	1,096.1	19.4	578.6	165.8	246.4	188.9	2.5	34.5	187.1	in	2,350.4	413.3
86	204.9	5.9	896.4	24.8	715.2	168.5	241.7	149.4	4.0	40.0	160.3	California	2,222.5	388.6
87	236.4	5.9	922.4	16.7	633.6	134.5	240.9	161.0	0.7	30.2	239.8	before	2,273.9	348.3
88	241.5	6.3	1,297.2	14.9	550.8	138.0	265.2	174.1	0.7	21.3	206.2	1993	2,561.6	354.6
89	330.1	6.4	848.1	12.2	713.0	236.2	306.6	112.8	closed	38.6	236.2		2,434.0	406.2
1990	373.6	5.6	926.5	9.4	716.2	103.0	227.2	142.3	0.9	30.6	191.4		2,435.8	290.9
91	389.1	5.1	933.0	10.1	778.7	103.0	273.8	95.0	closed	26.4	150.1		2,524.7	239.6
92	327.9	3.1	1,195.0	10.9	483.1	153.6	198.4	122.7	0.5	36.9	85.1		2,290.0	327.3
93	408.4	3.8	1,616.3	7.2	453.8	124.3	64.5	95.0	0.4	34.7	139.8	40.5	2,683.2	305.4
94	468.3	2.3	749.9	7.8	95.7	124.2	6.1	71.0	closed	21.4	183.7	52.8	1,503.6	279.6
95	389.6	1.0	611.0	6.7	334.1	105.7	18.6	75.1	closed	22.4	397.2	31.4	1,750.5	242.4
96	569.6	0.4	374.6	6.3	230.8	100.4	18.4	79.8	closed	26.2	164.2	37.7	1,357.6	250.9
97	523.7	0.3	583.3	5.9	295.7	67.8	13.7	83.0	3.5	32.9	228.9	NA	1,610.9	190.0
98	516.3	0.4	222.1	6.9	156.8	60.1	6.3	63.3	0.3	26.0	122.1	NA	1,172.1	157.2
1999	707.4	0.7	294.2	5.1	150.5	75.3	21.4	39.6	closed	31.8	87.8	NA	1,261.2	152.5
10-Year Mean	429.7	2.9	806.0	8.3	425.8	117.8	113.3	94.0	1.1	29.6	189.9	40.6	1,976.2	268.9

t Marine salmon fishery harvests only
NA Not Available

harvested an additional 79,299 Chinook salmon, 11,667 coho salmon, and 39,573 steelhead from Oregon estuary and freshwater sites in 1999. Note that less than 0.1% of the steelhead are taken in ocean fisheries off Oregon.

Idaho

Steelhead anglers in Idaho harvested a total of 31,841 fish in 1999, 12,574 from the 1998-99 run (spring season) and 19,267 from the 1999-00 run (fall season). The 1999 harvest was 22% higher than the 1998 harvest, and 7% above the recent 10-year average. Anglers released an estimated 27,757 steelhead during the spring season (21,267 hatchery and 6,490 wild) and 31,490 during the fall season (18,490 hatchery and 13,000 wild). There was no sport season for spring Chinook salmon in Idaho during 1999.

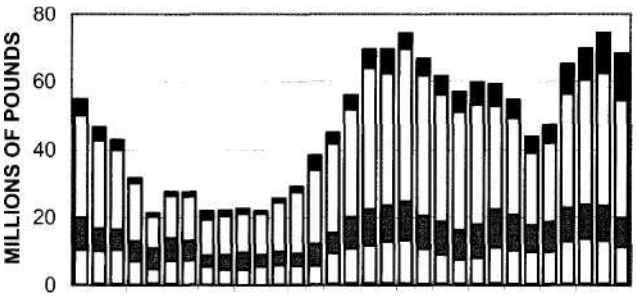
California

In 1999, recreational fishing was allowed along the entire California coast for salmon (all species except coho); however, fishing north of Horse Mountain was generally more restrictive. Waters from the Oregon border to Horse Mountain were open May 29 - July 4 and July 29 - September 14. Horse Mountain to Pt. Arena was open February 13 - July 4 and July 25 - November 14; Pt. Arena to Pigeon Pt. was open Mar 27-Oct 31; Pigeon Pt. to the U.S.-Mexico Border was open March 13-September 6.

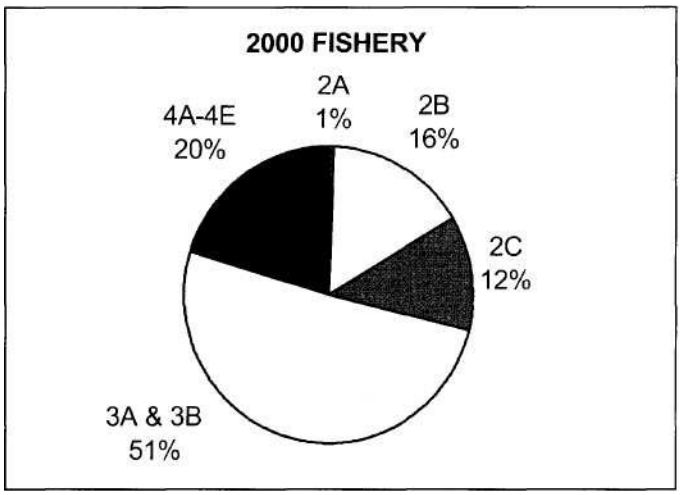
The recreational fishery landed approximately 87,800 chinook salmon during 1999; most of the recreational catch and effort occurred in the San Francisco port area. This is about 28% lower than the 1998 catch of 122,200 and under the previous 10 yr chinook salmon average of 168,600.

Contributors:
Allen Howe, Alaska Department of Fish and Game
Terry Gjernes, Department of Fisheries and Oceans, Canada
George Scholten, British Columbia Ministry of Fisheries
Wendy Beeghley, Washington Department of Fish and Wildlife
Justine Benson, Oregon Department of Fish and Wildlife
Greg Mauser, Idaho Department of Fish and Game
Marc Heisdorf, California Department of Fish and Game

PACIFIC HALIBUT FISHERY IN 2000



1970 TO 2000



Area 2A was managed to provide a total allowable catch for all user groups of 830,000 pounds. The allocation between user groups was recommended to the IPHC by the PFMC, and the IPHC adopted the recommendations. The sport fishery was allocated 351,404 pounds, while the treaty Indian fishery was allocated a total of 315,500 pounds (10,500 pounds for subsistence and ceremonial use and 305,000 pounds for the commercial fishery). The non-treaty commercial catch limit was 163,096 pounds with 138,632 pounds allocated to the directed fishery and 24,464 pounds for incidental catch in the salmon troll fishery. The directed commercial fishery was restricted to waters south of Point Chehalis WA (46°53'18" N. latitude) under regulations promulgated by the NMFS.

In 2000, the IPHC issued 633 Area 2A licenses; 235 licenses for the incidental commercial catch of halibut during the salmon troll fishery, 268 for the directed commercial fishery, and 130 for the sport charter fishery. There was little change in the number of licenses issued by fishery between 1999 and 2000.

In the incidental commercial halibut fishery conducted during the salmon troll season, the allowable incidental catch ratio was one halibut per three Chinook, and an 'extra' one halibut regardless of ratio, but the total number of incidental halibut landed could not exceed thirty-five. The ratio of halibut to number of Chinook has increased over the last five years with one to twenty in the first year of the program (1995) and with one to three in 2000. The incidental commercial halibut catch during the May and June salmon troll fishery was estimated at over 20,000 pounds, double the 1999 catch. Since the incidental catch limit was 24,262 pounds, as directed by the PFMC, approximately 3,000 pounds were rolled into the directed commercial catch limit at the end of the June troll fishery. The total commercial catch limit was not taken during the directed July fisheries so there were two incidental halibut fisheries in August for a total catch of 1,400 pounds.

The directed commercial fishery consisted of three 10-hour fishing periods with fishing period limits. The first opening (July 5th) had slightly higher fishing period limits than the previous year's first fishery and the total catch was the same (120,000 pounds). The total commercial catch for Area 2A was within 1% of the catch limit.

The treaty Indian catch of 300,100 pounds was under the catch limit by 5,000 pounds, or 2%. During the unrestricted fishery there were two fishing periods, March 15 and March 30, for a total catch of 186,000 pounds. The restricted fishery had fishing period limits of 500 pounds and a total catch of 113,400 pounds. The ceremonial and subsistence fishery remained open until December 31, 2000.

For the ninth year, the Individual Vessel Quota (IVQ) fishery was in effect in Area 2B. The IVQ fishery allowed each vessel to catch a predetermined poundage of halibut as calculated by the DFO, based on the 10.6 million pound catch limit approved by the IPHC. There was also an additional 145,820 pounds available as carryover from the underage/overage program in the 1999 fishery. The total catch limit of 10.6 million pounds was taken.

When the initial IVQ program was implemented in 1991, four hundred and thirty-five vessels received IVQs. Each initial

Table 10. Preliminary catch summary of the 2000 Pacific halibut fishery (in thousands of pounds), including research catch.

		Fishing Period	Number of Days	Catch Limit	Total Catch
2A	2A Treaty Indian	3/15-3/17 3/30	3	305	300
2A	Incidental [a]	May-June Aug 1-4 &11-21	76	24.5	22
2A	CA/OR/WA [ab]	7/5,7/19,8/2	30hrs	139	137
2B	British Columbia [cdL,]	3/15- 11-15	245	10,600	10,781
2C	Southeast Alaska [cfg]	3/15- 11-15	245	8,400	8,458
3A	Central Gulf of AK [tg]	3/15- 11-15	245	18,310	19,331
3B	Western Gulf of AK [cg]	3/15- 11-15	245	15,030	15,443
4A	Eastern Aleutian Is. [c\8]	3/15- 11-15	245	4,970	5,044
4B	Western Aleutian Is. [cs]	3/15- 11-15	245	4,910	4,712
4C	Pribilof Is. [B]	3/15- 11-15	245	2,030	1,746
4D	Western Bering Sea [cg]	3/15- 11-15	245	2,030	1,947
4E	Eastern Bering Sea [s]	3/15- 11-15	245	390	351
	Total			67,138	68,272

Pounds were carried over from the incidental to directed commercial catch limit

Fishing period limits by vessel class

Includes research catch in 1,000s of pounds: 2B=181; 2C=179; 3A=1,121; 3B=528; 4A=194; 4B=132; 4D=67

An additional 145,820 pounds available as carryover from 1999

Includes pounds landed by Native communal commercial licenses (F licenses)

Includes 54,026 pounds taken by Metlakatla Indians during additional fishing within reservation waters.

Additional carryover in 1,000's of pounds from the underage program were: 2C=376; 3A=408; 3B=196; 4A=39; 4B=127; 4C=46; 4D=34

```
ERROR: undefined
OFFENDING COMMAND: f`~

STACK:
```