



43rd Annual Report of the

PACIFIC STATES MARINE FISHERIES COMMISSION

FOR THE YEAR 1990

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

PSMFC COMMISSIONERS 1990

Pete Isleib, Chairman

ALASKA

RICHARD ELIASON
Alaska State Senate

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Alaska Dept. Fish & Game

PETE ISLEIB
Governor's Appointee

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Washington State Senate

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Washington Dept. Fisheries

ROBERT ALVERSON
Governor's Appointee

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".

43rd Annual Report
of the
**PACIFIC STATES MARINE
FISHERIES COMMISSION**
FOR THE YEAR 1990

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; 776; and 315 of the 80th; 87th; and 91st Congresses of the United States Assenting Thereto.

Respectfully submitted,
PACIFIC STATES MARINE FISHERIES COMMISSION

GUY THORNBURGH, Executive Director

Headquarters
2501 S.W. First Avenue, Suite 200
Portland, Oregon 97201-5346

Al J. Didier, Jr.
EDITOR

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43RD ANNUAL REPORT - 1990

ANNUAL MEETING EVENTS

SUMMARY

The Pacific States Marine Fisheries Commission's 43rd annual meeting was held October 22 - 24, 1990 in Sitka, Alaska. Mr. Pete Isleib, long-time Alaska fisherman and recognized ornithologist, chaired the meeting. The Annual Meeting included In-state meetings for the five member states, two half-day panel discussions, and the annual business meeting. The panels addressed Threatened and Endangered Species of Anadromous Fish, and Marine Mammals. Ms. Fran Recht of the Commission staff also apprised the Commission of recent developments in the PSMFC Habitat and Marine Debris programs.

SPECIAL ISSUES

Threatened and Endangered Species of Anadromous Fish. PSMFC staff member Dr. David Hanson moderated the October 22 morning session on threatened and endangered species of anadromous fish. Panelists included Mr. Doug Ancona from the office of the NOAA General Counsel; Mr. Mel Odemar representing the California Department of Fish and Game, Mr. Bill Bakke of Oregon Trout, Mr. Bob Eaton of Salmon for All, and Mr. Steve Crow representing the Northwest Power Planning Council.

Marine Mammals. Mr Guy Thornburgh, PSMFC Executive Director, moderated the October 22 afternoon work session on marine mammals. Panelists included Mr. Loyd Lowry, Chairman of the Steller Sea Lion Recovery Team; and Mr. Charles Karnella, Chairman of the NMFS Task Force on Guidelines for Incidental Take of Marine Mammals by Commercial Fisheries. The panelists described where the activities of their respective committees were leading. The panel discussed the August 1, 1990 guidelines recommended by the Marine Mammal Commission to govern the incidental taking of marine mammals in the course of commercial fishing operations after October 1, 1993. The Marine Mammal Commission recommendations were expected to carry considerable weight with the Task Force. Discussion focused on how PSMFC and the fish industry should proceed.

BUSINESS MEETING

The Commission took the following actions at the October 24th business session:

1. The Commission agreed to use its Interjurisdictional Fisheries Act funds to continue Dungeness crab fishery planning.

2. The Commission instructed its staff to track the petition to list Columbia River salmon under the Endangered Species Act. This process may set precedence for other living marine resources of interest to Pacific fisheries.

3. PSMFC voted to continue active support for delisting the gray whale from the Endangered Species List. The gray whale is unquestionably at its optimum sustainable population level and no longer in need of protection by the Endangered Species Act. Delisting the whale will (a) relieve fishermen from the risk of prosecution for unintentional takes and (b) enhance the credibility of the ESA by showing that living marine resources may be removed from, as well as added to, the list.

4. The Commission agreed to again strive to increase federal funding of Pacific Ocean fisheries programs during the FY1992 congressional appropriations process.

5. The Commission directed its staff to intensify efforts to protect and restore marine habitat for fisheries.

6. The Commission will begin a program to improve the public's image of the fishing industry.

7. PSMFC vigorously supported rational management of marine mammals, and will continue to coordinate west coast action toward that end.

1991 ANNUAL MEETING

The 44th Annual Meeting will be held at the Red Lion Inn in Coos Bay, Oregon on October 2-4, 1991. The meeting will address Dungeness crab, federal legislation, protected species, marine habitat, on-board observers, and other sport fishing, commercial fisheries and environmental issues. Mr. Paul Heikkila, a commercial troller and Sea Grant extension agent from Coquille, Oregon, was elected chairman for 1991.

**ANNUAL PSMFC AWARD
FOR CONTRIBUTION TO
PACIFIC COAST FISHERIES**

GARY SLAVEN

The Commission's annual award for contributions to Pacific coast fisheries was established in 1987. Its purpose is to recognize individuals who have made outstanding contributions to promote the conservation, development and management of marine fishery resources.

The 1990 annual award was presented to Mr. Gary Slaven of Petersburg, Alaska. Mr. Slaven is a second generation commercial fisherman who has fished since 1963 and who has owned fishing vessels since 1973. He graduated from high school in Junction City, Oregon in 1969 and served three years in the U.S. Marine Corps. He has been an outstanding advocate for fisheries resources and the industry as a member of the Pacific Salmon Commission, the United Fishermen of Alaska, the Alaska Trollers Association, the Northern Southeastern Aquaculture Association and the Alaska Board of Fisheries. He served as a Pacific Salmon Commission Northern Panel member from 1985-1988 and as Alaska's alternate PSC Commissioner in 1989. He also served as the Chairman of the Alaska Board of Fisheries from 1987-1990. He is respected for his ability to meld varied and often diverse interests into compromise positions that fairly address the concerns of the affected parties.



Figure 1. Gary Slaven, recipient of the 1990 PSMFC award for contribution to Pacific Coast fisheries.

ADMINISTRATIVE REPORTS AND ACTIONS

EXECUTIVE DIRECTOR'S REPORT

It is a pleasure to report that the Pacific States Marine Fisheries Commission continued to expand its role in assisting the fishermen and resource agencies of the five compact states address the management of Pacific ocean living marine resources. Considerable effort was made to improve the appropriations for the National Marine Fisheries Service; develop interstate fishery management plans; address issues such as marine debris, vessel safety, marine mammal/fishery interaction, and high seas driftnet; contract services for state and related agencies; and improve coastwide fishery computerized data bases. These activities are explained more fully in this document.

Issues relating to marine mammal/fishery interactions were particularly numerous and significant in 1990. Steller sea lions were listed as threatened under the Endangered Species Act; the Marine Mammal Commission prepared guidelines for a long term amendment of the Marine Mammal Protection Act; the

Interim Exemption Program went into full swing with permits, fees, log books and observer programs; and Herschel the sea lion continued to dine on steelhead at the Ballard locks.

PSMFC has worked with marine mammal issues since 1973 when we were discouraged by the MMPA's failure to address the management interrelationships between fisheries and marine mammals. This past year illuminates four points:

- a. The commercial fishing industry responded positively and responsibly to concerns for the dramatic decline of Steller sea lions. They acknowledged the need to list the species, worked to reduce takes and helped increase the funding for research;
- b. The public raised the broader question of what indirect impact fishing may have on the food supply for marine mammals, and the corollary question of how to define the carrying capacity

of mammals when harvesting fish for human consumption;

- c. The Marine Mammal Commission continues to focus on the protection, rather than the rational management, of marine mammals in an ecosystem of other living marine resources; and
- d. The lesson for the seafood industry is to acknowledge and accept the public's role in resource management, followed by industry's commitment to work with environmental groups toward sustainability of living marine resources in the presence of man's use. (Note: Mr. Ben Deeble of Greenpeace is one of PSMFC's advisors from Washington State and has been a positive contribution to Commission activities.)

PSMFC remains committed to working with NMFS, Capitol Hill and the environmental community in structuring a more practical wildlife management program for the marine environment.

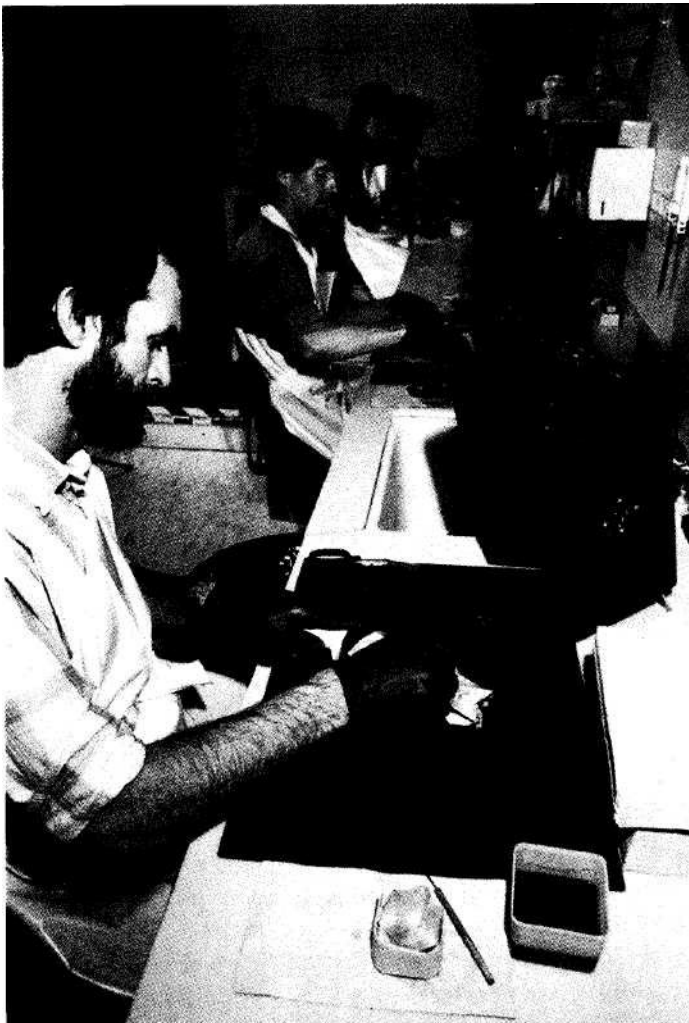


Figure 2. Technicians extract coded-wire tags, used to follow salmonid migrations along the Pacific Coast (ADFG Photo).

NEW OFFICE LOCATION

Growing pains moved PSMFC into a larger office in the Oregon Department of Fish and Wildlife building. Also located in this office are the Regional Mark Processing Center, the PIT Tag Operations Center, the Fish Passage Center and the Columbia Basin Fish and Wildlife Authority.

FEDERAL APPROPRIATIONS FY1991

The Fisheries Coalition for An Effective Fisheries Budget for NMFS is commended for its efforts to unite and work diligently with Congress to achieve the FY1991 appropriation. Thirty-five groups from the Pacific, North Pacific and Western Pacific participated.

PSMFC remains committed to continuing its efforts to sponsor these lobbying efforts. A fully funded NMFS budget is necessary for productive recreational and commercial fisheries, as well as a healthy marine ecosystem.

The Congressional delegation from the Commission's member states was instrumental in a significant enhancement to the overall NMFS budget.

PSMFC REGIONAL DATA PROJECTS

The Commission administers four regional computerized fisheries databases. Each database has a steering committee of state and federal agency representatives plus a PSMFC employee serving as database administrator.

Regional Mark Processing Center All data relating to releases and recoveries of salmon and steelhead with finclipped markings or embedded coded wire tags are stored at the "Mark Center". This database encompasses all wild and hatchery stocks marked by state, federal, tribal and private parties from California through Alaska, including Idaho and British Columbia. It is a model cooperative program, funded primarily by the Anadromous Fisheries Act and the Pacific States Marine Fisheries Commission, with ad hoc contributions by federal and tribal agencies.

The database increases by a half million records each year and is used extensively by fisheries managers. It is a corner stone of information necessary for implementation of the Pacific Salmon Treaty. The Mark Center resides at the PSMFC headquarters and Dr. J. Kenneth Johnson is its administrator (503) 326-7474.

Pacific Coast Fisheries Information Network (PacFIN) PacFIN is a highly visible and successful cooperative coastwide fishery data collection, analysis, and monitoring system which builds on existing state data programs to meet federal management obligations. The PacFIN computer database contains fishery catch and effort information, primarily for the vast groundfish

fisheries, from California to Alaska. These day-to-day fisheries data contribute to the "real time" management of the state and Regional Council fisheries. The PacFIN database resides on the NMFS computer in Seattle and is administered by PSMFC employee Will Daspit (206) 526-4072.

PIT Tag Information System Bonneville Power Administration has funded extensive research and development by NMFS for a Passive Integrated Transponder (PIT) tag to mark salmon, steelhead and sturgeon in the Columbia River Basin. PSMFC has developed and administers a centralized database for all of the information generated by this program. During the March-September fish runs, interrogation sites at five dams collect information and electronically transfer it daily to the PIT Tag Center for processing. The system resides at the Commission's headquarters office and is administered by Judith E. Cress (503) 326-7025.

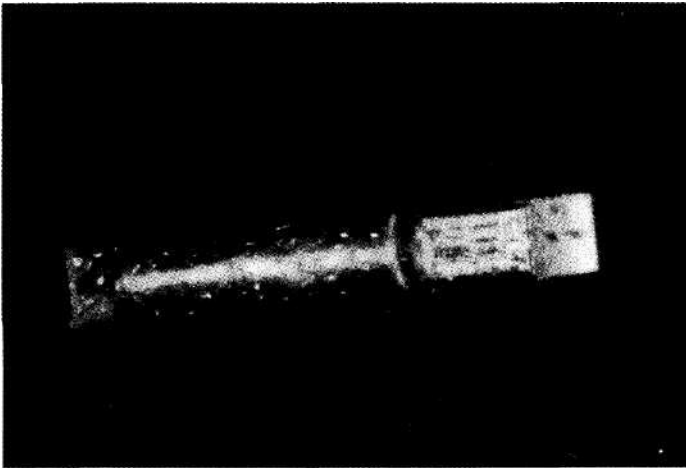


Figure 3. A Passive Integrated Transponder (PIT) tag, approximately 10 mm long and 2 mm in diameter (Scott McCutcheon Photo).

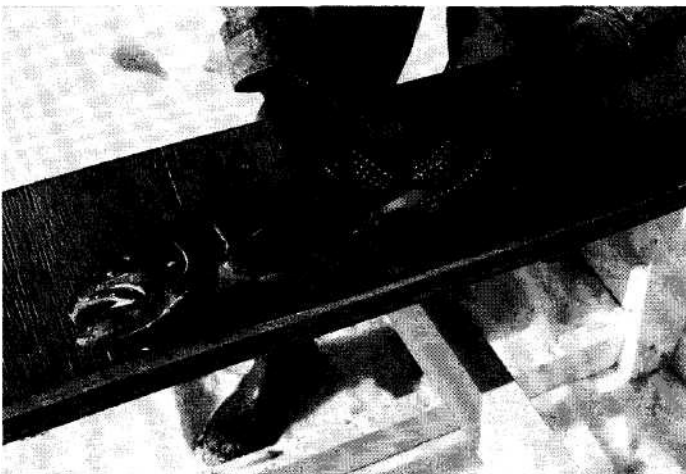


Figure 4. PIT tags are injected into the abdominal cavity where they can be automatically detected and decoded in situ (Scott McCutcheon Photo).

Marine Recreational Fisheries Statistics Survey

With funds provided from a Wallop/Breaux Grant, PSMFC administers a coastwide database of angler information. The database resides on microcomputers at the Commission and in state fisheries offices. Russell Porter of PSMFC is the coordinator (503) 326-7025. However, in 1990 NMFS terminated the Pacific coast segment of its long standing Marine Recreational Fisheries Statistics Survey -- leaving the nation with an irrecoverable gap in its time series of angler information and catch.

FISHERY MANAGEMENT PLANS

PSMFC received federal grants from the Interjurisdictional Fisheries Act (IFA) and the Wallop/Breaux Administrative Fund (W/B) to prepare multijurisdictional FMP's.

The Thresher Shark FMP for Washington/Oregon/California was completed by the Planning Committee and endorsed by the three state management agencies and the Commission. Three years of development, including an onboard observer program to collect data in the Washington/Oregon experimental gill net fishery, led to an FMP for cooperative management along the coast. A tri-state management committee will annually review and coordinate the FMP and state regulations.

The Commission formed a White Sturgeon Planning Committee and developed a first draft of an FMP (using W/B funds). The Committee includes representatives from the state agencies of Washington, Oregon, California and Idaho; from NMFS and USFWS; and from the Columbia River Inter-Tribal Fish Commission and the Yakima Indian Nation. The final document is expected in 1991.

INDUSTRY SUPPORT

To further its goal of developing Pacific coast fishery resources, PSMFC pursued several projects in 1990 in support of the fishing industry (both commercial and recreational). These projects are indicative of PSMFC's role of addressing issues typically not undertaken by its member state agencies or the Regional Councils.

Marine Debris PSMFC continued its West Coast Marine Debris Recovery Project in 1990. This program was funded by Saltonstall-Kennedy and Wallop-Breaux grants to address the MARPOL Annex V prohibitions of at-sea disposal of plastic and other waste. Fran Recht was project leader and applied the lessons she learned in the highly successful Newport, Oregon pilot program for providing adequate port refuse disposal facilities.

High Seas Driftnets PSMFC supports a ban on high seas driftnets (nets longer than one and one-half

miles in length, fished beyond any nations' 200 mile EEZ). The PSMFC coordinator was quite active in the campaign to resolve this issue and worked closely with news media, fishing organizations, Capitol Hill and environmental groups.

Marine Mammals Marine mammal issues were plentiful in 1990. The listing of Steller sea lions as threatened under the Endangered Species Act filled the headlines. Although much of the California seafood industry had experienced the implications of ESA via the California sea otter, the remainder of the coast and the vast industry of the North Pacific were suddenly awakened. PSMFC facilitated the industry's response to the issue by (a) hosting a fact finding/public awareness workshop of industry, government and environmentalists in Anchorage, Alaska, (b) coordinating a written response by all the major seafood organizations to the proposed rulemaking by NMFS and (c) co-sponsoring several aspects of an education program to inform fishermen of the need to protect the animals.

The Marine Mammal Commission's "Guidelines to Govern the Incidental Taking of Marine Mammals in the Course of Commercial Fishing Operations" were another issue. The guidelines were mandated by Congress in the 1988 amendments to MMPA and reflect the Mammal Commission's intent for a long term solution to fishery/mammal interactions. PSMFC facilitated a written response from twenty-one seafood organizations from around the nation, reflecting the industry's concern for (a) excessive protection of marine mammals, independent of other living marine resources in the ecosystem; (b) unwillingness to manage marine mammals similar to other wildlife; (c) proposing that optimum sustainable population levels should be defined as levels of marine mammals prior to fishing and (d) lack of credibility in the implementation of MMPA and ESA.

Recall the long-standing issue of "Herschel", i.e. California sea lions at the Ballard locks inflicting devastating losses on the remnant run of a local population of steelhead. After years of expensive efforts to deter the mammals, state authorities requested that NMFS lethally remove the animals through the public health and welfare provision of MMPA. NMFS concluded that this was contrary to the Marine Mammal Commission's interpretation of the legislative history of MMPA, although NMFS could apply for a general waiver of the MMPA moratorium to lethally remove the sea lions. According to NMFS "However, the waiver process, which requires a finding on the species status with respect to its optimum sustainable population (OSP), is likely to be very lengthy (18-24 months) and costly and its success is questionable. Therefore, we cannot support the approach at this time". THE GAMES PEOPLE PLAY!

Finally, 1990 marked the first full year of the MMPA interim exemption program for commercial fishing with permits, decals, log books and onboard observers.

It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States. Annex V of the MARPOL TREATY is a new international law for a cleaner, safer marine environment. Each violation of these requirements may result in civil penalty up to \$25,000, a fine up to \$50,000, and imprisonment up to 5 years.

U.S. Lakes, Rivers, Bays, Sounds and 3 miles from shore	3 to 12 miles	12 to 25 miles	Outside 25 miles
ILLEGAL TO DUMP Plastic & Garbage Paper Rags Glass Food	ILLEGAL TO DUMP Plastic Dunnage (lining & packing materials that float) also if not ground to less than one inch: Paper Rags Glass Crockery Metal Food	ILLEGAL TO DUMP Plastic Dunnage (lining & packing materials that float)	ILLEGAL TO DUMP Plastic

State and local regulations may further restrict the disposal of garbage.

WORKING TOGETHER, WE CAN ALL MAKE A DIFFERENCE!
PACIFIC STATES MARINE FISHERIES COMMISSION, (503) 326-7925
Designed by the CENTER FOR MARINE CONSERVATION, Washington, DC

Figure 5. The PSMFC Marine Debris program assists ports, fishing groups, and fishermen understand and meet their obligations under MARPOL Annex V.

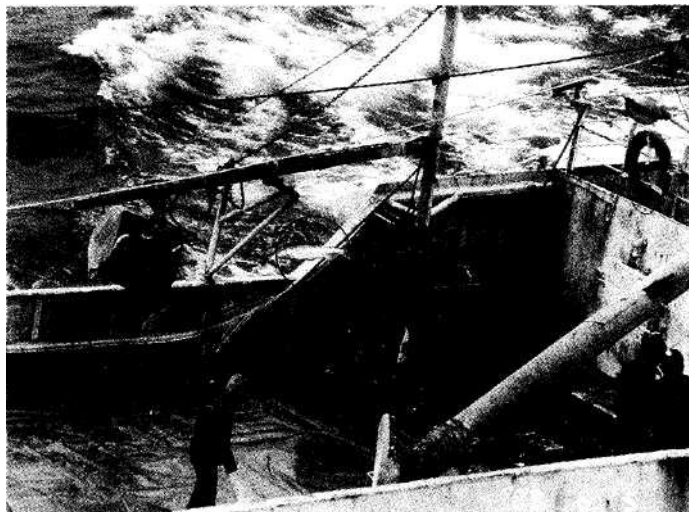


Figure 6. Crew members of the Taiwanese F/V TA CHIEH #3 toss salmon overboard after being caught while illegally targeting salmon in the North Pacific on June 5, 1989 (USCGC MIDGETT Photo).



Figure 7. PSMFC supports management of marine mammals as one component of the marine ecosystem.

CONTRACT SERVICES

Contract Services to the States PSMFC provides contract services for many State fishery data projects that are funded by the Federal Government. The National Marine Fisheries Service (NMFS) is the principal Federal agency involved, and NMFS uses PSMFC as the primary contractor because of the Commission's proven fiscal ability and low overhead rate (14%). PSMFC is able to hire technical personnel to work alongside existing State employees and thereby enhance the State data programs as necessary to support regional fishery management. The low PSMFC overhead rate allows the money to go further toward the purpose for which it is intended. These are primary advantages of PSMFC involvement.

In 1990 PSMFC administered over \$2.6 million for its member states, including over 1,500 man months of personnel. These state assistance projects are critical elements of the information system required for state and federal management of important fishery resources.

Contract Services to Other Organizations In addition to the above, PSMFC provides contract services for other entities. In a sense, the Commission serves as a "parent" organization for these entities, that do not have the necessary staff to handle payroll, procurement, accounting, travel expense and related functions. PSMFC retains no programmatic or policy control over these projects; it provides administrative support only. These projects totaled \$3.8 million in 1990. The entities involved were:

Columbia Basin Fish and Wildlife Authority The Columbia Basin Fish and Wildlife Authority was created to coordinate the activities of the member agencies in the Columbia River area. State, federal, tribal and member agencies contributed funds to PSMFC for employment of an Executive Staff and for operations.

Fish Passage Center With funds from BPA, PSMFC hires most of the staff of the Fish Passage Center, which is charged with monitoring and enhancing anadromous fish passage in the Columbia River Basin.

Enhancement Planning Teams With funds from the Northwest Power Planning Council and BPA, the Commission administers several teams of state, federal, tribal and private scientists/managers to prepare blueprints for anadromous fisheries production in the Columbia Basin.



Figure 8. PSMFC contract employees assist in state operated fisheries data collection and management programs.

EXTERNAL AFFAIRS

Commission staff serve on several councils and committees that affect regional and national policies for fisheries research and management.

Regional Councils The Magnuson Act stipulates that the Executive Director of PSMFC shall serve as a non-voting member of the Pacific and North Pacific Fishery Management Councils. Dr. David L. Hanson, as the Commission's Fishery Coordinator, sits on both councils. Dr. Hanson focuses on legislative, budget, information management, and groundfish issues and devotes substantial time to this important process.

MAFAC The Executive Directors of the Pacific, Atlantic and Gulf State Marine Fisheries Commissions serve as consultants to the Marine Fisheries Advisory Committee. MAFAC meets 3 to 4 times per year to provide advice to the Department of Commerce and its Assistant Administrator for Fisheries on all major fishery policy issues in the Nation.

Canada-U.S. Groundfish The Executive Director serves as the U.S. member on the Canada-United States Groundfish Committee. Established in 1959, the Committee meets annually to discuss and recommend research and management activities of mutual concern for transboundary species of groundfish. A large Technical Subcommittee of state, federal and Canadian scientists advises the Committee. The group has been an effective, largely informal instrument for resolving fishery issues, and has prevented potentially serious bilateral fishery problems that would have required more formal negotiations.

AFS/IAFWA The Executive Director and Mr. Russell G. Porter, Assistant Director, serve on several committees of the American Fisheries Society and the International Association of Fish and Wildlife Agencies. The Commission provides input on marine fisheries issues, federal appropriations, and fisheries habitat.

F.I.S.H. Habitat Education Program The Executive Director is a member of the newly formed association of commercial harvesters, anglers and environmentalists who are committed to protecting the marine environment for fishery resources. Fishermen Involved in Saving Habitat is particularly concerned with preserving and restoring marine associated wetlands and in protecting water quality for marine, estuarine and anadromous fishes.

P.F.L.T.F. The Pacific Fisheries Legislative Task Force assembles four state legislators from each of Washington, Oregon, California, Alaska, Idaho and Hawaii several times a year to address marine fisheries issues of common interest. Dr. David Hanson serves as PSMFC's consultant to the Task Force.

ADMINISTRATIVE REPORTS AND ACTIONS

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 latest 5-year catch records.

1990 AUDIT REPORT

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

We have audited the accompanying general purpose financial statements of Pacific States Marine Fisheries Commission as of June 30, 1990, and for the year then ended. These general purpose financial statements are the responsibility of Pacific States Marine Fisheries Commission's management. Our responsibility is to express an opinion of these general purpose financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards, Government Auditing Standards, issued by the Comptroller General of the United States, and the provisions of Office of Management and Budget Circular A-128, "Audits of State and Local Governments." Those standards and OMB Circular A-128 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 financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall general purpose financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

As described in Note 9 to the financial statements, the Commission changed its method of accounting for grants and contracts to the modified accrual basis.

In our opinion, the general purpose financial statements referred to above present fairly, in all material respects, the financial position of Pacific States Marine Fisheries Commission, as of June 30, 1990, and the results of its operations for the year then ended in

conformity with generally accepted accounting principles.

Our audit was conducted for the purpose of forming an opinion on the general purpose financial statements taken as a whole. The schedules listed in the table of contents are presented for purposes of additional analysis and are not a required part of the general purpose financial statements of Pacific States Marine Fisheries Commission. Such information has been subjected to the auditing procedures applied in the audit of the general purpose financial statements and, in our opinion, is fairly presented in all material respects in relation to the general purpose financial statements taken as a whole.

Cahall, Nolan & Co.
November 2, 1990
Portland, Oregon

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

COMBINED BALANCE SHEET - JUNE 30, 1990

	General Fund	General Fixed Assets	Totals
ASSETS			
Cash	78,697		78,697
Receivables:			
Grants and Contracts	827,771		827,771
Other	218		218
Fixed Assets		896,209	896,209
Total Assets	906,686	896,209	1,802,895

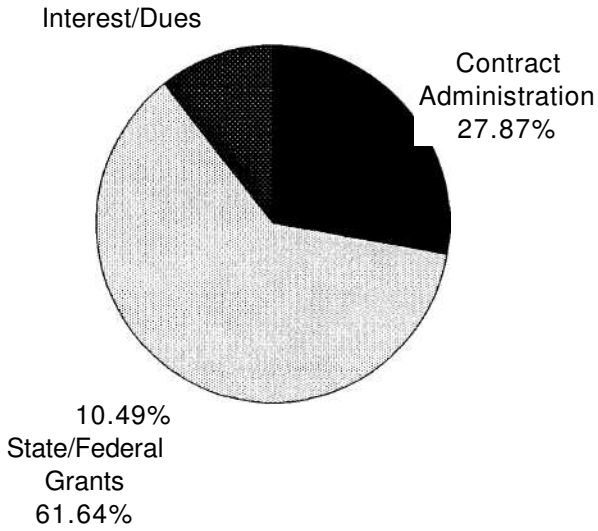
LIABILITIES AND FUND BALANCE

Liabilities			
Accounts Payable	542,287		542,287
Withholding Taxes	489		489
Capital Lease Obligations	35,013		35,013
Deferred Revenue	74,837		74,837
Other Liabilities	8,122		8,122
Total Liabilities	660,748		660,748
Fund Equity			
Investment in General Fixed Assets		896,209	896,209
Fund Balance	245,938		245,938
Total Fund Equity	245,938	896,209	1,142,147
Total Liabilities and Fund Equity	906,686	896,209	1,802,895

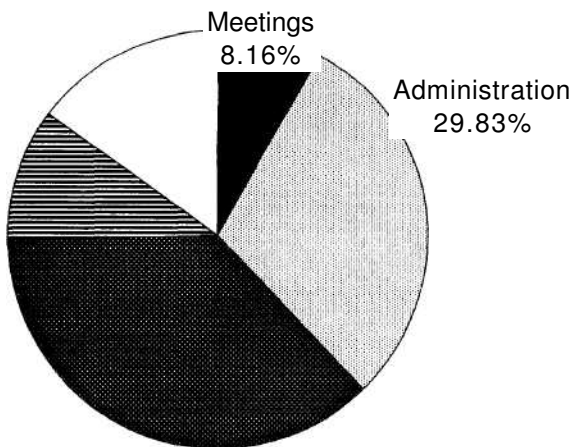
1990 PSMFC OPERATING BUDGET

REVENUES (\$1,146,171)

14.94%
Industry Projects 10.19%
Data Systems 36.88%



EXPENDITURES (\$1,146,171)



Fishery Plans

External
 Contracts for
 the Period
 July 1, 1989
 -June
 30, 1990

Marine Recreation Survey	161,078
Squawfish Sport Reward Program	81,056
Total Contracts	6,424,873

Submitted by Pam Kahut, Fiscal Manager/Treasurer

<u>Contract</u>	<u>Amount</u>
Administrative Support of SFFMP	\$ 18,000
Albacore Logbook & Port Sampling	54,000
Interjurisdictional Fisheries Program	109,000
OCS Fishery Resource Data	130,428
PIT Tag Data Base	52,686
Regional Mark Processing Center	158,137
Pacific Fisheries Information Network (PacFIN)	950,000
West Coast Marine Debris Program	80,500
USFWS Cooperative Interstate Fishery Management	96,435
USFWS Stream Improvement	23,911
AK Coastwide Data System	50,000
AK High Seas Drift Net	50,000
CA Artificial Reef Study	67,000
CA Bay Estuary & Nearshore Ecosystem	64,000
CA Gill Net Alternative Study	147,271
CA Marine Resource Inventory	101,000
CA Northern Sportfish	55,000
CA Ocean Salmon Stock Analysis	25,000
CA Salmon Protection & Enhancement	15,317
CA Sardine Resource Research	36,000
CA Sea Urchin Fishery	60,000
CA Sportfish Assessment Project	15,000
CA Sportfish Sampling Studies	260,500
NWPPC Columbia Basin System	460,969
BPA Implementation of Planning Process	162,256
BPA Columbia River Coded Wire Tag	709,019
BPA Coordinated Information System	413,703
BPA Scientific Review Group Support	231,150
BPA Smolt Coordination (FPC)	1,254,870
BPA Technical Work Group Coordination	206,006
Columbia Basin Fish & Wildlife Council Support	63,179
Fishing Vessel Safety	30,000
Fish Marking Coordination	8,805
	23,597

PACIFIC COAST FISHERY REVIEW REPORTS

DUNGENESS CRAB FISHERY IN 1989-90

Alaska

Total landings were 8.1 million pounds, 0.5 million pounds above 1989. Production by area was: Southeast, 4.7; Kodiak, 2.3; Prince William Sound, 0.4; Chignik, 0.06; Cook Inlet 0.03; Dutch Harbor, 0.02; and Alaska Peninsula, 0.003 million pounds respectively. Landings in Southeast and Dutch Harbor increased, while landings in all other areas remained the same or declined.

Washington

Total Dungeness crab landings were 8.7 million pounds. A late recruitment molt caused a delay in opening the coastal season until January 10, 1990. The opening ex-vessel price was \$1.25/lb. When the coastal season closed on September 15, the 6.7 million pounds landed were somewhat below the long term average of 6.9 million pounds. Two hundred twenty nine (229) vessels made 7,173 deliveries. The number of vessels was the same as the number that participated in the 1988-89 record season in which 21.8 million pounds were landed. The Puget Sound fishery was open from October 1, 1989 through April 15, 1990. About 1.9 million pounds were taken in Puget Sound, about 1 % more than the previous 10-year average.

Oregon

Ocean landings were 9.3 million pounds, down from 11.2 million pounds last year. Effort was very high in December, with many Washington boats participating due to the season delay in Washington waters. Crab condition early in the season was generally good, except crab condition on the north was marginal. Ex-vessel price opened at \$1.25 everywhere except on the north coast, where \$1.00 was paid. Average price climbed steadily through May to \$1.75 and then remained stable until the August 14 closure. Three hundred seventy eight (378) boats made 9,625 deliveries.

California

California Dungeness crab landings during the 1989-90 season totaled 4.6 million pounds, a significant drop (5 million pounds) from the previous season.

Landings for the northern California ports of Crescent City, Trinidad, and Eureka were 2.4, 0.5 and 0.8 million pounds, respectively. These were the lowest landings in 15 years. The ex-vessel price opened at \$1.25 and there were 313 vessels in the fleet.

Central California landings totaled 0.9 million pounds, down 0.7 million pounds from the 1988-89 season. The ex-vessel price opened at \$1.75.

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Table 1. Annual landings of Dungeness crab by state, province, and entire Pacific coast (in 1000's of lbs.)

Year or Season*	Alaska	British Columbia	Washington	Oregon	California	Total
1952-53	3,472	4,596	6,222	6,949	8,277	29,516
1953-54	2,739	4,871	7,455	10,178	8,266	33,509
1954-55	4,384	5,064	6,755	6,106	5,853	28,162
1955-56	2,446	3,486	9,395	8,602	13,083	37,012
1956-57	552	2,873	11,327	11,560	19,279	45,591
1957-58	1,747	4,079	11,285	10,080	17,288	44,479
1958-59	3,999	4,120	8,219	7,033	17,786	41,157
1959-60	4,733	4,828	7,555	8,093	15,865	41,074
1960-61	4,592	4,284	7,388	10,816	12,446	39,526
1961-62	8,990	2,444	5,675	5,813	3,987	26,909
1962-63	12,084	3,738	5,105	3,546	2,342	26,815
1963-64	12,709	4,302	5,043	3,540	1,998	27,592
1964-65	8,895	3,501	7,715	6,221	4,749	31,081
1965-66	5,053	4,538	11,649	10,187	10,419	41,846
1966-67	11,598	5,295	9,291	9,428	10,705	46,317
1967-68	13,242	4,373	11,736	10,215	13,158	52,724
1968-69	10,886	3,705	19,250	11,965	13,685	59,491
1969-70	9,696	2,548	18,675	13,849	15,564	60,332
1970-71	3,749	1,963	13,211	14,735	8,501	42,159
1971-72	5,448	1,975	10,095	6,780	2,875	27,173
1972-73	6,423	2,580	5,583	3,143	1,500	19,229
1973-74	3,818	2,500	4,604	3,462	880	15,264
1974-75	3,036	2,513	5,896	3,335	1,816	16,596
1975-76	1,545	2,121	9,885	9,099	17,410	40,060
1976-77	1,162	2,269	14,023	16,200	26,404	60,058
1977-78	7,169	2,592	9,237	10,375	13,800	43,173
1978-79	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
1980-81	15,109	2,626	4,494	9,529	12,717	44,475
1981-82	15,811	1,969	3,928	8,700	10,786	41,194
1982-83	*11,801	1,848	5,237	4,100	5,413	28,399
1983-84	9,967	1,155	6,166	4,700	5,854	27,842
1984-85	9,180	2,561	4,266	4,900	5,248	26,155
1985-86	9,358	2,913	5,430	7,171	5,990	30,862
1986-87	9,346	3,587	4,806	4,680	8,671	31,090
1987-88	10,571	3,324	17,858	8,654	8,748	49,155
1988-89	7,667	3,348	23,895	11,162	9,554	55,626
10-year Mean	10,472	2,708	8,440	8,187	8,783	38,591
1989-90	8,145	4,694	8,657	9,257	4,571	35,324

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 referenced and ends during the following year. Includes all deadloss.

SHRIMP FISHERY IN 1990

The 1990 Pacific Coast Pandalid shrimp landings in the United States and Canada totaled 63.1 million pounds (Table 1), a 27.1 percent decrease from 1989 landings. The decrease resulted from reduced landings in all reporting areas except Alaska.

Alaska

Alaskan landings of Pandalid shrimp totaled 2.8 million pounds in 1990. Landings of trawl caught shrimp totaled 2.4 million pounds, and 431,000 pounds of shrimp were caught by pot.

Southeastern Alaska landings accounted for 2.2 million pounds of trawl caught and 391,000 pounds of pot caught shrimp. The remainder of the Alaska landings were scattered between Cook Inlet, Prince William Sound and Western Alaska.

The trawl shrimp fishery in Western Alaska remains closed due to depressed stocks. No substantial increases in stock abundance are expected in the near future.

British Columbia

Total shrimp landings for the west coast of Canada were 6.2 million pounds. These landings originate from trawl and trap fisheries.

The trawl fishery consists of offshore otter trawl and inshore beam trawl operations. Offshore smooth pink shrimp, *Pandalus Jordanii*, landings totaled 3.3 million pounds from the Tofino and Nootka grounds (Vancouver area), a decline of 25% from 1989. Inside beam trawl landings of *P. borealis*, *P. jordani*, *P. platyceros*, and *Pandalopsis dispar* totalled 666,000 pounds from Georgia Strait and Chatham Sound (both Vancouver and Charlotte areas).

The coastwide trap fishery targets mainly on the prawn, *Pandalus platyceros*, with a small operation for coonstripe shrimp, *P. danae*, in Sooke Harbour (Vancouver area). Total landings from these fisheries were 1.9 million pounds, a decrease of 4% from 1989.

Washington

Coastal pink shrimp landings in 1990 totaled 13.5 million pounds, a drop of 2.4 million pounds from 1989 (15% decrease). Of this total, 93.9% were caught off the Washington coast. This compares with 1989 and 1988 figures of 82.2% and 90.4%, respectively. This total was attained by 93 vessels, expending 38,727 hours of effort to make 1,035 landings, 85% of which were by double rigged vessels. Of the 93 vessels, 61 (49 double rigged) made five or more landings, representing a nine vessel increase in this category over 1989. Eight of the additional boats were single rigged bottom fish boats that made a few shrimp landings. CPUE for the season averaged 349 lb/h, down from 1989's 476 lb/h, and the lowest since landings picked up in 1985. Fishing was best in April, when fishermen averaged 636 lb/h, but declined steadily through the season to a low of 200 lb/h in October.

Ex-vessel prices for shrimp began at 450, a nickel higher than the 1989 opening price. A split price for small shrimp was not an issue because of the exceptionally large mean size of shrimp landed throughout the season. The price rose through the summer, reaching 600 on September 1st, where it remained through the rest of the season. The mean price paid for shrimp over the entire season was 49.90, up almost 13 cents from 1989. Consequently, though landings were below the 1989 level, the ex-vessel value of the 1990 landings, at over \$6.75 million, exceeded the \$5.9 million of 1989.

Catches were dominated throughout the season by two year old shrimp of the 1988 year class. Normally the one year olds dominate the landings in the latter half of the season, but the 1989 year class of one year olds was weak in all areas, though strongest in area 72 to the north. Primary transitioning was not observed in samples from any areas off Washington. To the contrary, apparently in response to the small supply of one year old males, an unusually high percent of two year olds (26%) remained males rather than transitioning into females as they normally would before their second breeding season.

Oregon

The total 1990 pink shrimp *P. jordani* harvest in Oregon was approximately 31.9 million pounds (Table 1). The 1990 harvest was 17.2 million pounds less than was landed during the 1989 season but remained above the ten year average of 27.2 million pounds. A total of 178 vessels made 2,414 deliveries into Oregon ports during 1990 compared to 188 vessels and 2,839 deliveries during 1989. CPUE declined sharply during the later half of the season resulting in longer than normal trips and fewer deliveries.

The total effort (hours) expended to harvest the landed catch was 80,845 h, a decrease of 12,063 h over 1989 (Table 1). Total CPUE was 394 lb/h, considerably less than the 528 lb/h seen in 1989. PSMFC areas 84 and 86 again had the most pounds harvested and the most effort expended. Areas

Table 1. Annual Pacific Coast pandalid shrimp landings (in 1000's of pounds) by state and province, 1975 - 1990.

Year	Alaska	British Columbia	Washington	Oregon	California	Total
1975	98,535	1,728	10,167	23,893	4,993	139,316
1976	129,011	7,723	9,261	25,392	3,400	174,787
1977	116,011	6,176	11,803	48,580	15,633	198,203
1978	73,293	3,460	12,298	56,997	13,167	159,215
1979	50,916	1,578	12,135	29,579	4,992	99,200
1980	52,568	1,500	12,629	30,152	5,050	101,899
1981	28,029	1,841	10,055	25,918	3,670	69,513
1982	16,987	1,200	5,000	18,462	4,550	46,199
1983	7,458	1,200	5,656	6,547	1,132	21,993
1984	9,539	2,009	3,423	4,844	1,485	21,300
1985	4,204	2,969	9,118	14,848	3,293	34,432
1986	4,064	2,400	17,400	33,798	6,800	64,462
1987	2,457	4,700	15,900	44,800	7,800	75,657
1988	2,521	5,600	18,300	41,484	11,100	79,005
1989	1,885	6,300	15,870	49,083	13,314	86,452
Mean	39,832	3,359	11,268	30,292	6,692	91,442
1990	2,831	6,152	13,510	31,883	8,680	63,056

72 and 74 contributed a larger proportion of the catch and effort in 1990 than in 1989.

Shrimp fishing in 1990 started slowly due to intra-industry disputes. These disputes involved processors, fishermen and the Fishermen's Marketing Association (FMA). The disputes centered on several issues including price, use of split prices based on count per pound, proposed linking of shrimp market orders with groundfish market orders at processors with FMA contracts, and sympathy "tie-ups" by independent fishermen supporting FMA members. Low shrimp inventories and the excellent grade of shrimp landed within the first two weeks of the 1990 season helped to settle the disputes. Small, age one shrimp were scarce, leading to low counts and a diminished incentive for establishing or disputing a split price structure. By mid-April, all vessels were fishing and were receiving a single price for all shrimp landed. Membership of Oregon vessels in the FMA apparently increased this year, particularly on the south and central coasts.

The ex-vessel shrimp price in 1990 opened at 45C/lb for legal grade shrimp as compared to 400/lb for 140 count and larger shrimp and 250/lb for smaller legal shrimp in 1989. In mid-June the price increased to 50C/lb, then about August 1st jumped to 550/lb. The price increased again to 600/lb during the fourth week of August, where it remained through season's end. The higher price for shrimp in 1990 resulted from declining catches as the season progressed combined with a steady demand. Inventories were reported to still be very low at the end of the season.

The pink shrimp catch in 1990 contained a much lower percentage of age one shrimp than in 1989. Age one shrimp comprised nearly 70% of the catch by number in 1989, and exceeded 70% in 1988 and 1987. By contrast, in 1990 the proportion of age one shrimp exceeded 50% of the catch only once, during August in area 82. Otherwise, the largest observed percentages of age one shrimp ranged from 40-45% of the catch.

The consistently low count per pound reflected the dominance of age 2 and older shrimp. Counts were well below 100 shrimp per pound in most areas and months, and somewhat above this level early in the season in areas 72 and 74. Overall, the grade of shrimp landed was uniformly excellent. No count per pound problems occurred in 1990.

In 1989, age zero shrimp were encountered in only one area sampled in October. This lack of age zero shrimp appears to have correctly indicated low numbers of age one shrimp in 1990. In 1990, zero age shrimp were observed in most areas in October, perhaps indicating a rebound in recruitment of age one shrimp for 1991. Zero age shrimp collected in fall 1990 appeared to be somewhat smaller in size than zero age shrimp in recent years.

The sex composition of pink shrimp in the fall of 1990 was characterized by a very low proportion of primary females when compared to recent years. The low level of age one shrimp in 1990 resulted in a relative excess of age two and older shrimp which are usually female. As a result, most age one shrimp and even some age two shrimp failed to transition into females, resulting in a sexually balanced breeding stock despite an unusual age structure in the population.

California

For the first time in seven years the statewide landings of Pacific Ocean shrimp *P. jordani* declined. The 8.7 million pounds landed in 1990 was a decrease of 35% from the 13.3 million pounds landed in 1989. Even though the landings decreased substantially, the 1990 statewide landings were still the fifth largest on record.

AREA 92

Shrimp landings at the ports of Crescent City and Eureka totaled 8.16 million pounds, a 4.3 million pound decrease from 1989. Total Area 92 landings were comprised of 7.4 million pounds caught in Area 92 waters, 18,000 pounds from area 94, 725,000 pounds from Area 88, and 4,000 pounds from Area 86. The season opened April 1 but the price settlement of 45C/lb was not reached until April 15. The ex-vessel price increased by 50 increments until it reached 600/lb on August 29, where it remained until the season ended on October 31. A total of 58 boats (39 single-rigged and 19 double-rigged) made 978 trips (697 s.r. and 281 d.r.) during 1990. This was an increase of 2 boats and a decrease of 31 trips from 1989. Double-riggers averaged 634 lb/h, down from 842 lbs/h in 1989.

The 1990 catch exhibited several anomalies which seemed to be in response to an extremely weak 1989 year class. Two year old males made up 62.7% of the males in the

PSMFC Area Geographic Boundaries		1989 and 1990, by PSMFC area of harvest.			
		1990		1989	
		Pounds	Hours	Pounds	Hours
72	Cape Flattery to Cape Elizabeth	3,056,228	6,969	1,718,885	3,051
74	Cape Elizabeth to Cape Shoalwater	4,115,172	10,029	2,157,070	3,860
75	Cape Shoalwater to Columbia River	174,436	634	302,903	611
82	Cape Shoalwater to Columbia River	2,593,487	6,371	4,710,626	10,380
84	Columbia River to Cape Falcon	8,061,216	24,661	14,012,731	31,014
86	Cape Falcon to Cape Perpetua	8,828,111	22,331	18,728,251	32,988
88	Cape Perpetua to Cape Blanco	4,223,482	8,144	6,216,738	9,218
88	Cape Blanco to OR/CA border	830,652	1,706	1,236,267	1,787
92	OR/CA border to Cape Mendocino				
Total		31,882,785	80,846	49,083,472	92,910

1990 catch while they averaged only 0.1 % of the males during the previous ten year period. The 1990 landings only had 18.8% one year old shrimp, compared to the 1980-89 average of 80.5%. Primary females (one year old) were absent from the 1990 catch, while they averaged 39.5% of the females in the catch during the previous 10 years.

Area 94

Area 94 Pacific Ocean shrimp landings were 519,000 pounds, down 38% from 1989. Over 50% of the season's landings occurred during April and May, with one vessel accounting for 44% of the season total. The ex-vessel price was the same as in Area 92.

A total of 72 landings were made by six single-rigged vessels which had an average seasonal catch rate of 441 pounds per hour. The CPUE started at 607 lb/h in April and declined to 175 in August. Count per pound was below 100 for the first three months of the season and slightly over for the remainder. One year old shrimp made up 21% of the sampled catch in April, and steadily increased to 80% by August. Females made up a decreasing percent of the sampled landings, from a high of 35% in April to a low of 17% in August. Gravid females made up 3% of the females in April and 29% in May.

ALBACORE FISHERY IN 1990

Commercial albacore landings increased in 1990 to 6.6 million pounds and represent a 27% increase from the record low experienced by the fishery in 1989. Fishing effort was concentrated north of Vancouver Island, Canada and increased average fish size (12 pounds in 1989 to 16 pounds in 1990) contributed to the rise in total landings this year.

Pan Pacific Cannery and the Western Fishboat Owners Association (WFOA) set the 1990 price for albacore at \$ 1,100 per ton for fish 7 to 9 pounds and \$1,700 per ton for fish greater than 9 pounds. The WFOA also agreed to a \$100 per ton shipping fee for fish landed at buying stations. The 1990 agreement increased last year's price by \$100 and \$200 per ton respectively.

California

The 1990 albacore season had a false start in late April when an intrusion of warm water created a corridor along the California coast which brought albacore up from Guadalupe Island. By mid-May, albacore were being caught as far north as Bodega Bay. Unfortunately, strong winds developed, the corridor collapsed, and fishing stopped at the end of May. One vessel returned from the south Pacific and off-loaded 308,110 pounds of albacore at Pan Pacific Cannery late in the month. During May, 312,773 pounds were landed.

As in recent years, the true start occurred in July when sport boats located albacore off northern Baja California, primarily around Geronimo Island, Guadalupe Island, and Cape Colnett. The fish ranged in size from 10 to 16 pounds with occasional 20-pound fish taken. In addition, a number of purse seine vessels caught albacore as well as sub-tropical species, such as skipjack and bluefin tuna, around the Coronado Islands and Sixty-mile Bank.

While a good sport fishery had developed in southern California and several commercial fishing boats had limited success, there was clearly not enough albacore available to

AREA 96 No landings in Area 96 have been reported this season.

AREA 98

There was one landing of 1,200 pounds in Area 98 and it was caught in Area 92.

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maintain a strong commercial effort south of Point Conception. July landings totalled 70,022 pounds.

In August, most albacore boats were working between Newport, Oregon and the Columbia River and offshore 400 miles. A few local jig boats tried traditionally good albacore spots off central California such as the "1908" spot, Davidson seamount, the "1500" spot, Guide and Pioneer seamounts without success. At mid-month, these boats located large schools of albacore 70 miles west of Fort Bragg. Catches of between 20 to 40 fish/day/boat were reported. However, these schools proved to be transitory and disappeared after a day or two. In August, 108,726 pounds of albacore were landed.

In September, fishing activity increased along the central coast as jig/drift gill net boats began catching albacore along Sur Canyon, Davidson seamount, and 50 to 100 miles west of Morro Bay. These boats had scores of one fish per day, with fish varying in size from 10 to 20 pounds. Jig boats headed home from Washington found albacore at Gorda Valley, west of Shelter Cove, while sport boats out of San Francisco had their first catches of the season. The sport caught fish were located just south of Point Arena. Sport boats from Morro Bay made four trips in September but were unsuccessful. In southern California, the sport fishery continued to bring in good-sized albacore (15 to 25 pounds) along with other tunas.

In the latter part of September, storms in the Gulf of Alaska sent most of the fleet southward. Previously the fleet had followed the albacore as far north as the Queen Charlotte Islands, Canada where the scores were as high as 200 fish/day/boat. The total pounds landed in September equalled 724,856 pounds.

In October, most landings were made by vessels returning south from Canadian waters and off-loading at home ports or at Pan Pacific Cannery in Terminal Island. Commercial landings in October totaled 689,764 pounds.

Albacore landings in California totaled 1.9 million pounds in 1990. This was a 6% increase from 1989's record low of 1.8 million pounds, but constituted only 12% of the 25-year average (16 million pounds). There was a 30% decrease in the number of boats from California that participated in the 1990 fishery compared to 1989. However, fishing success for the fleet was good; 63 out of 157 boats landed over one ton of albacore during the season.

Oregon

There were catches of albacore reported in late July about 300 miles off the Oregon-California Border, and at two spots west of Cascade Head, one located 300 miles and the other located 500 miles offshore. Catches ranged from 50 to 200 fish/day/boat. There were no landings in Oregon in July.

During the first week of August fishing was excellent about 350 miles off the Columbia River, with catches ranging from 100 to 600 fish/day/boat and averaging 200 to 300 fish. Fishing success dropped quickly during the second week of August to about 30 to 80 fish/day/boat. Fishing moved northward rapidly and by the end of the month, the fishery was centered off Vancouver Island, Canada. Some fishing occurred 100 miles off Newport but as time went on, the number of 6-to 8-pound fish increased and the catch/day/boat decreased to between 25 to 50 fish/day/boat. Oregon landings for August were approximately 1 million pounds.

Fishing effort off Oregon was light during September because of low catch per effort and the small size of the fish. Most of the fishing effort continued to be centered off Vancouver Island and the majority of the landings made at month's end were from that area as boats returned south and quit fishing. Landings in September were again about 1 million pounds. Fishing ended in early October and landings were less than 100,000 lbs.

Preliminary season total landings for Oregon were 2.1 million pounds. This was a 98% increase from 1989's total of 1.1 million pounds, but represents only 18% of the 25-year average (11.8 million pounds).

Washington

Albacore landings for the 1990 season began in Washington in July when a single landing totaling 2,736 pounds was made. The fish were caught 400 to 500 miles off the Oregon coast. Jig vessels continued to work the area approximately 400 miles offshore of Oregon during the first part of August with daily catches averaging up to 200 to 300 fish. The average weight of fish was approximately 12 to 14 pounds. Fish in this area began to scatter as the month progressed and catches decreased to an average of about 30 to 80 fish/day by mid-month. By the latter part of August, fishing effort was centered off of Vancouver Island, Canada. Washington albacore landings for the month of August totaled 1,055,015 pounds.

A minor amount of fishing effort occurred off the Washington coast during September. An apparent low availability of albacore in Washington coastal waters kept the Washington sport catch of albacore below an estimated 300 fish. The most productive commercial fishing continued to be in Canadian waters, with the best fishing reported about 100 to 140 miles west of Cape St. James, Queen Charlotte Islands. Large fish of 22 to 24 pounds were found in this area. Landings for the month of September were 1,427,842 pounds;

over 90% of these landings were reported from Canadian catch areas.

Deteriorating weather in Canadian waters at the end of September effectively terminated the 1990 Washington albacore fishery. A few vessels delivering their final trip catch in early October accounted for 56,132 pounds, all from Canadian catch areas.

Total Washington albacore landings for 1990 were 2.5 million pounds. Total catch increased 650,000 pounds or about 27% from last years total, but still constitute only 54% of the 25-year average (4.7 million pounds).

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Table 1. Albacore landings in California, Oregon and Washington (in thousands of pounds).

Year	California	Oregon	Washington	Total	
1960	35,113	4,563	526	40,202	
61	29,123	3,250	456	32,829	
62	36,622	8,949	365	45,936	
63	48,860	11,400	527	60,787	
64	42,551	4,452	1,055	48,058	
65	23,218	12,122	2,048	37,388	
66	18,189	18,041	1,101	37,331	
67	17,858	29,243	1,240	48,341	
68	15,077	37,752	3,050	55,879	
69	14,722	29,828	1,240	45,790	
1970	29,932	21,782	4,390	56,104	
71	36,117	8,420	5,250	49,787	
72	21,001	23,056	16,238	60,295	
73	8,641	16,350	14,446	39,437	
74	11,806	25,225	17,983	55,014	
75	15,413	17,166	16,297	48,876	
76	27,754	5,934	7,202	40,890	
77	15,905	4,420	4,948	25,273	
78	21,549	11,285	5,008	37,842	
79	8,508	3,107	830	12,445	
1980	11,958	3,505	1,299	16,762	
81	20,584	7,727	1,928	30,239	
82	9,439	1,913	586	11,938	
83	16,732	3,410	1,168	21,310	
84	26,520	1,631	147	28,298	
85	14,410	1,525	379	16,314	
86	7,018	2,461	1,862	11,341	
87	3,090	2,279	1,167	6,536	
88	2,665	3,952	4,197	10,814	
89					
25-year Mean	1,819	15,997	1,050	1,882	4,751
1990* Preliminary		1,942	11,727	4,635	32,360
		2,077	2,542	6,561	

TROLL SALMON FISHERY IN 1990

Southeast Alaska

The commercial troll fishery in Southeast Alaska and Yakutat occurs in State of Alaska waters and in the Federal Exclusive Economic Zone (EEZ) east of the longitude of Cape Suckling. The EEZ waters are those more than 3 miles west of the surf line. All other waters of Alaska are closed to commercial trolling.

The commercial troll fishery harvests primarily chinook and coho salmon. Other species of salmon harvested by trollers are normally considered incidental, although targeting of pink and chum salmon has increased in recent years. The troll fishery normally harvests about 90 percent of the chinook

salmon and 50-75 percent of the coho salmon taken in Southeast Alaska commercial fisheries.

Commercial trolling for chinook salmon occurs in two seasons; winter (October 1 through April 14) and summer (April 15 to September 30). The summer season is divided into four fisheries: 1) June experimental fishery; 2) hatchery access fishery; 3) terminal fishery; and 4) general summer fishery. The first three are designed to maximize the catch of Alaska origin hatchery chinook. A quota on the number of non-Alaskan chinook salmon is set yearly under the U.S./Canada Pacific Salmon Treaty. Time and area openings are set by the Alaska Board of Fisheries. The season for coho salmon is from June 15 to September 20. There are no season restrictions for other species of salmon.

In 1990, experimental troll fisheries were conducted several days each week during June in near-terminal hatchery areas. The purpose of all except the Cross Sound fishery was to increase the take of Alaska origin chinook. Between two and three hundred boats participated in the 1990 experimental fisheries and harvested 7,196 chinook salmon. Catchers were highest in statistical week 25 (June 17-23).

Hatchery access fisheries were conducted in most of the inside waters during June 5-7 and June 21-23. The purpose of this fishery was to compare the catch and percentage catch of Alaskan hatchery produced chinook salmon with the catch and percentage catch in other troll fisheries, primarily the experimental fishery. This was the second year for the fishery and the catch of 34,810 chinook salmon exceeded that in the 1989 fishery by 3,588. Effort in the fishery was down from the previous year, due primarily to a conflicting halibut opening on June 6. Only 254 permits were fished in the first opening compared to 741 permits fishing in the similar 1989 opening.

The general summer season troll harvest target was determined by subtracting the base catches in the winter and June troll fisheries along with the expected net and recreational harvest from the total ceiling of 306,900. Five percent of this total is added for the expected add-on. This brought the projected total to 207,700. This was 52,200 fish greater than the 1989 general summer season troll chinook salmon harvest.

Opening of the 1990 general summer trolling season was again delayed until July 1. This reduced the duration of the chinook salmon non-retention fishery which occurs after the allowable chinook salmon catch has been taken. A total of 24 days were open to chinook salmon fishing during the summer season. This was approximately double the number of days open during the 1988 and 1989 seasons. Final summer troll chinook catch was approximately 212,280 fish, bringing the 1990 chinook total troll landings to about 287,427 fish (4.9 million pounds dressed; 5.56 million pounds round weight). This is slightly above the 1980-89 average of 244,605 chinook, and the largest harvest since the 1979-80 season.

Chinook salmon non-retention was implemented for a total of 48 days in 1990, July 23 through August 12 (21 days) and August 25 through September 20 (27 days). Several areas were again closed to all fishing during chinook non-retention periods to reduce hook and release mortality.

The coho harvest of 1,831,515 fish (12.2 million pounds dressed; 13.2 million pounds round weight) was above the

Table 1. Pacific Coast commercial troll chinook salmon landings in millions of pounds round weight, 1956-1990. All 1990 data are preliminary.

Year	Alaska	British Columbia	Washington	Oregon	California	Total
1956	3.9	9.8	4.0	4.4	11.3	33.4
1957	5.1	9.7	4.8	3.0	5.3	27.9
1958	5.7	9.1	3.3	1.8	4.1	24.0
1959	6.7	8.7	2.7	0.5	7.5	26.1
1960	4.8	6.4	1.7	1.5	7.0	21.4
1961	2.9	6.0	2.5	1.4	9.3	22.1
1962	3.9	5.9	2.4	0.7	7.2	20.1
1963	4.1	6.8	2.8	1.6	7.9	23.2
1964	6.0	8.5	2.1	0.7	8.7	26.0
1965	5.1	8.8	1.3	0.7	9.3	25.2
1966	4.8	11.4	2.0	0.9	6.9	26.0
1967	4.3	10.4	1.7	1.3	4.4	22.1
1968	5.8	10.8	1.9	1.1	5.3	24.9
1969	5.1	10.8	2.3	1.4	5.6	25.2
1970	5.1	9.9	2.5	1.9	6.1	25.5
1971	4.9	15.2	3.1	1.2	5.7	30.1
1972	3.3	14.1	2.6	1.5	6.2	27.7
1973	5.0	12.7	3.8	4.0	8.7	34.2
1974	5.1	13.5	4.3	2.6	5.8	31.3
1975	4.4	12.6	3.3	3.0	6.6	29.9
1976	3.5	13.8	4.4	2.2	5.7	29.6
1977	4.7	12.1	3.3	4.0	6.6	30.7
1978	6.8	13.2	2.4	2.2	6.0	30.6
1979	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
1981	4.7	10.2	1.4	1.8	6.8	24.9
1982	4.5	11.9	1.9	2.7	8.5	29.5
1983	4.9	6.5	0.8	0.8	2.4	15.4
1984	4.4	9.8	0.2	0.6	2.3	17.3
1985	4.0	9.8	0.6	2.3	5.2	21.9
1986	4.7	8.6	0.7	3.9	7.6	25.5
1987	5.3	11.6	1.1	6.0	9.5	33.5
1988	4.3	11.2	1.5	5.0	16.5	38.5
1989	5.2	8.6	1.2	4.1	6.2	25.3
10-yr	4.8	10.0	1.1	3.0	7.1	26.0
Mean						
1990	5.6	9.2	0.6	2.5	4.2	22.1

* Troll-caught salmon are landed dressed. Round weights are projected.

1980-89 ten-year average of 1,199,115, and the second largest harvest on record for Southeast.

The estimated ex-vessel value for the Chinook troll fishery for 1990 was approximately \$10 million (\$2.06 per pound dressed), with coho valued at about \$ 15.55 million (\$1.28 per pound dressed).

Washington

Washington Non-Indian trollers targeted on Chinook in a coho non-retention fishery that was open from Cape Falcon, Oregon, north to the U.S.- Canada border. The fishery opened on May 1 and closed permanently on June 14. There were four separate evaluation closures during this fishery, resulting in a total of 32 open days.

Three all-species fisheries occurred in 1990. The first was from Cape Falcon, Oregon, north to the U.S.- Canada border. The fishery opened on August 18 and closed for evaluation on August 21. The fishery re-opened on August 25 and closed permanently on August 26 for a total of 6 open days. The second all-species fishery was a limited participation fishery limited to 15 vessels from Cape Alava, Washington to the south end of Destruction Island, Washington. The fishery opened on September 15 and closed for evaluation on September 16. The fishery re-opened on September 19 and closed permanently on October 31 for a total of 45 open days. The third all-species fishery occurred from Leadbetter Point, Washington to Cape Falcon, Oregon. The fishery opened on August 30 and closed for evaluation on September 14. The fishery re-opened on September 18 and closed for evaluation on September 19. The fishery re-opened on September 22 and closed permanently on October 15 for a total of 42 open days.

Landings from these fisheries, combined with those from the Treaty Indian commercial troll fishery, totaled 0.6 million pounds round of Chinook and 1.0 million pounds round of coho. 1990 Chinook landings were 50% below the 1989 landings of 1.2 million pounds round, and were 45% below the 10 year mean of 1.1 million pounds round. 1990 coho landings were 43% higher than the 1989 landings of 0.7 million pounds round, and equaled the 10 year average.

Oregon

The area from Cape Falcon north to the US/Canada border opened for all species except coho on May 1 and was scheduled to run to June 15 or Chinook quota. The fishery was actually open during the time periods of May 1 through 14, May 18 through 27, May 31 through June 2, June 8 through 11, and June 14. A second season north of Cape Falcon to the US/Canada border was open August 18 through 21, and August 25 through 26; this was an all species fishery with a landing restriction of 20 Chinook and 200 coho per vessel per open period. The final 1990 troll season north of Cape Falcon that included Oregon waters, was open from Cape Falcon to Leadbetter Point, Washington. This season was open from August 30 through September 14, September 18 through 19, and September 22 through October 14. A single daily landing limit of 50 coho plus one coho for each chinook was in effect through September 19, and was changed to 100 coho per single daily landing from September 22 through the remainder of the season.

The all species except coho fishery from Cape Falcon to Cascade Head was open from May 1 through June 25, July 4 through 15, and September 1 through October 31. From Cascade Head to Humbug Mountain the fishery was open May

1 through June 25, and August 1 through October 31; except that the area from Cape Arago to Humbug Mountain was closed from August 7 through 14. The all species fishery from Cape Falcon to Cascade Head was open from July 16 through August 31. This fishery had a single daily landing limit of 50 coho plus one coho for each chinook landed. The all species fishery from Cascade Head to Humbug Mountain was open from July 4 through 31, with a ratio landing requirement of not more than one coho per chinook; except that the area from Cape Arago to Humbug Mountain was closed July 10 through 17, and July 24 through 31.

Within the Klamath Management Zone (KMZ) (Sisters Rocks to Punta Gorda, California), the subarea of Sisters Rocks to House Rock within 6 miles of shore was open from May 1 through 24 for all except coho. The KMZ troll fishery for all

Tabl 2. Pacific Coast commercial troll coho salmon landings in millions of pounds ; round weight, 1956-1990. All 1990 data are preliminary.

Year	Alaska	British Columbia	Washington	Oregon	California	Total
1956	3.9	12.9	5.3	3.2	0.5	25.8
1957	7.5	14.4	5.0	3.9	0.6	31.4
1958	5.2	15.6	4.7	1.3	0.1	26.9
1959	5.8	11.7	3.7	1.0	0.3	22.5
1960	2.5	9.3	1.5	0.8	0.1	14.2
1961	3.6	14.8	4.2	2.3	0.6	25.5
1962	5.2	16.4	4.7	2.2	0.4	28.9
1963	6.3	16.1	4.0	3.0	1.2	30.6
1964	5.7	20.5	4.6	4.2	2.2	37.2
1965	6.2	23.5	7.4	4.8	1.8	43.7
1966	4.7	24.3	6.1	5.2	4.0	44.3
1967	4.2	14.1	6.2	8.3	3.9	36.7
1968	5.8	22.6	4.5	5.1	2.7	40.7
1969	3.1	12.7	3.3	3.6	1.4	24.1
1970	2.2	17.3	6.1	8.7	1.5	35.8
1971	3.1	21.4	7.9	10.1	3.7	46.2
1972	5.7	15.9	3.9	5.6	1.2	32.3
1973	4.5	16.2	4.3	5.9	2.3	33.2
1974	6.7	15.6	6.4	8.3	4.3	41.3
1975	1.5	9.5	5.1	4.7	1.3	22.1
1976	4.3	15.3	7.2	10.4	3.3	40.5
1977	4.9	14.4	4.3	3.0	0.2	26.8
1978	8.0	14.9	3.2	3.2	1.5	30.8
1979	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
1981	6.7	11.3	2.0	3.8	0.5	24.3
1982	10.2	15.8	2.2	3.1	0.6	31.9
1983	9.3	13.3	0.3	1.3	0.3	24.5
1984	10.0	17.3	0.3	0.1	0.4	28.1
1985	12.6	17.3	0.6	0.6	0.1	31.2
1986	16.6	23.0	0.7	2.2	0.8	43.3
1987	8.0	18.5	0.7	2.2	0.3	29.7
1988	4.2	13.1	0.3	3.8	0.4	21.8
1989	9.9	15.1	0.7	2.3	0.3	28.3
10-yr	9.3	16.0	1.0	2.2	0.4	28.9
Mean						
1990	13.2	19.5	1.0	0.7	0.3	34.7

* Troll-caught salmon are landed dressed. Round weights are projected.

except coho was open from August 1 through 6, and August 8 through 31. The subarea of Sister Rocks to Mack Arch within 6 miles of shore was open September 3 through 16.

The 1990 troll Chinook landings of 2.5 million pounds round weight were down 39% from 1989 landings, and were 17% below the 1980-89 ten year average of 3.0 million pounds. The 1990 coho harvest of 0.7 million pounds was 70% below the 1989 landings, and 68% below the 1980-89 ten year mean of 2.2 million pounds.

California

The troll season north of Horse Mountain was open August 1 through August 6 and August 8 through August 31. A special troll fishery with a 15,000-fish chinook quota opened September 3 and closed October 31; it extended from Punta Gorda to Trinidad Head (centering on the Eel River mouth), inside 6 miles. From Horse Mountain to Point Arena, the initial salmon season extended from May 1 through May 29. It was reopened from June 6 through September 29 except for closures from June 12 through June 19, June 26 through July 3, July 10 through July 17, and July 24 through July 31. South of Point Arena, the troll season was open from May 1 through September 30. Coho fishing was permitted south of Horse Mountain from June 1 until July 31 when the subarea impact ceiling of 102,000 was reached south of Cascade Head. The 5,000 coho reserve, south of Horse Mountain, permitted coho fishing until September 21. Minimum size limits statewide for chinook and coho were 26 and 22 inches total length, respectively, and barbless hooks were required.

California preliminary troll chinook landings were 4.2 million pounds round, 41% lower than the previous 10-year average, and about 25% of the 1988 landings which were the highest in California since 1916 when records were first kept. Preliminary landings of coho salmon were 0.3 million pounds round, only 75% of the previous 10-year average.

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SALMON AND STEELHEAD SPORT CATCHES IN 1989

Alaska

Alaska anglers harvested 1,097,228 salmon and 6,387 steelhead during 1989. Salmon harvests were the highest on record, due primarily to large catches of sockeye, coho, and chinook salmon. The harvest of coho salmon was the highest on record, while the harvests of sockeye and chinook salmon were exceeded in only one previous year. Total salmon catches exceeded the 10-year average by about 76%. The harvest of steelhead was about the same as recorded in 1988, and exceeded the 10-year average by about 29%.

Canada

The 1989 sport angler harvest of salmon was 1,401,670 fish (preliminary estimate). Information on the steelhead sport harvest is not available.

Washington

Marine recreational catches from Puget Sound (Areas 5-13) were unavailable at the time of this report. Coastal anglers (Areas 1, 2, 3, 4, and 4B) caught a total of 19,858 chinook salmon, 212, 854 coho salmon, and 2,036 pink salmon.

Table 1. Salmon and steelhead sport harvest, 1989.

State	Chinook	Coho	Pink	*Other Salmon	Steel-head	Total
Alaska	122,737	338,195	164,778	471,518	6,387	1,103,615
Canada	312,625	752,252	297,406	39,387	**	1,401,670
Washington	†19,858	†212,854	†2,036	†12	105,947	340,707
Oregon	‡32,069	‡272,200	1,325	-	112,800	418,394
Idaho	-	-	-	-	38,621	38,621
California	†186,627	†49,604	-	-	**	236,231
Total	673,916	1,625,105	465,545	510,917	263,755	3,539,238

* Sockeye and chum salmon

** Unavailable

† Includes coastal fisheries (Areas 1, 2, 3, 4, and 4B) only. Puget Sound data are unavailable.

‡ Marine fishery data only

Table 2. Salmon and steelhead sport catches (1000's of fish) for the Pacific Coast States, 1975 to 1989 and 10-year (1979-1988) averages.

Year	Alaska		Washington		Oregon		Idaho		California		Total	
	Salmon	Steelhead	** Salmon	Steelhead	** Salmon	Steelhead	Salmon	Steelhead	* Salmon	Steelhead	Salmon	*
1975	178.0	2.2	1,399.4	92.9	329.1	185.5	0.0	0.0	125.0	Steelhead	2,031.5	280.6
1976	200.6	2.3	1,749.6	89.1	580.7	118.3	0.0	2.0	139.0	catches	2,669.9	211.7
1977	381.1	3.7	1,191.4	100.0	260.7	145.1	3.5	13.0	117.8	are	1,954.5	261.8
1978	525.4	4.3	1,107.9	163.1	282.6	200.6	7.0	11.5	114.0	not	2,036.9	379.5
1979	361.2	3.0	1,123.9	94.8	202.3	122.4	closed	5.7	140.9	estimated	1,828.3	225.9
1980	531.8	4.8	852.9	151.1	344.9	203.7	closed	9.1	106.4	in	1,836.0	368.7
1981	379.5	3.3	760.1	125.1	230.6	155.0	closed	13.0	94.6	Calif.	1,464.8	296.4
1982	597.3	3.7	736.9	104.2	213.9	135.1	closed	20.5	165.4		1,713.5	263.5
1983	532.5	5.4	860.6	78.6	171.7	84.2	closed	32.2	91.1		1,655.9	200.4
1984	625.8	6.5	561.4	149.5	140.3	198.4	closed	25.1	106.8		1,434.3	379.5
1985	619.2	4.7	686.3	165.8	246.1	188.4	2.5	34.5	186.9		1,741.0	393.4
1986	720.5	5.8	830.6	168.5	234.0	149.5	4.0	40.0	160.3		1,949.4	363.8
1987	969.9	5.9	782.8	134.5	236.0	161.0	0.7	30.2	239.8		2,229.2	331.6
1988	907.8	6.3	746.6	138.0	265.0	174.1	0.7	21.3	206.1		2,126.2	339.7
10-year	624.6	4.9	794.2	131.0	228.5	157.2	0.8	23.2	149.8		1,797.9	316.3
Mean												
1989	1,097.2	6.4	1,234.7	105.9	305.6	112.8	closed	38.6	236.2		1,639.0	263.7

* Excluding California catch

** Marine fishery data only

t Includes coastal fisheries (Areas 1, 2, 3, 4, and 4B) only. Puget Sound data are unavailable.

The 1989 Washington sport catch of steelhead was 105,947 fish, 19% below the ten-year average of 131,000 fish.

Oregon

The 266,600 ocean salmon angler trips in 1989 were 5% above the 1988 effort and the success rate was also up. The ocean recreational catch of 305,600 salmon exceeded 1988 landings by 13% and was the best year since 1980.

Chinook catches decreased from 38,600 fish in 1988 to 32,100 in 1989, comparable to the 1979-88 average of 32,500 Chinook.

Coho catches increased 27% from 226,400 fish in 1988 to 272,200 taken in 1989. The ten-year average catch is 195,000 coho salmon.

The steelhead catch of 112,800 fish in 1989 was 35% below the 1988 catch and 28% below the ten-year average of 156,200 steelhead. Only a fraction of this catch is made in the ocean.

Idaho

No spring chinook salmon sport fishery was opened in 1989. Steelhead anglers harvested 38,621 fish in 1989; 9,803 were harvested during the spring (1988-89 run year) and 28,818 were harvested in the fall (1989-90 run year). The 1989 harvest was 81% greater than the 1988 harvest and 66.4% greater than the ten-year average. The increase in the 1989 harvest was primarily the result of the large 1989-90 run-year hatchery return.

California

The 1989 ocean sport salmon catch, estimated at 236,231 fish, was up about 15% from the 1988 harvest of 206,071 fish. It was also higher than the 10-year average. Coho salmon made up 21 % of the ocean sport salmon catch in 1989. Steelhead catches are not estimated in California and no catch data is available.

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PACIFIC HALIBUT FISHERY IN 1990

Regulations for the 1990 halibut fishery were proposed, but not adopted, at the International Pacific Halibut Commission's Annual Meeting in Seattle, Washington, on January 29 - February 1. Failure to adopt the regulations resulted when the Canadian section abstained from voting on catch limits and fishing seasons in United States waters to protest the level of bycatch of halibut in U.S. fisheries off Alaska. In response to Canada's position, the U.S. section similarly abstained from voting on halibut fishing regulations applicable to Canadian waters.

For 1990, Canada and the United States each adopted halibut fishing regulations pertaining to their own waters and fishermen. References to Regulatory Area 2B are based on regulations adopted by Canada, and references to all other regulatory areas are based on regulations adopted by the United States.

Halibut landings continued to decline in 1990 (Table 1). Preliminary landings and number of fishing days by management area through September 28 are presented in Table 2. The fishery landed 61.2 million pounds dressed weight (36,960 mt round weight), compared to the 58.3 million pound (35,178 mt) combined catch limit set by the United States and Canada. Largest abundance and the majority of the catch occurred in the Gulf of Alaska.

The 1990 commercial season was characterized by catch overages in several areas despite fewer fishing days than in 1989. Fishing period limits were used in Area 3A to hold down the catch as it approached the catch limit. Daily catch rates, although declining, are still above historical catch rates and continue to jeopardize managing at the catch limit. Other problems identified by the IPHC in recent years continued in 1990: illegal fishing; deadloss wastage; poor quality of landed fish; and safety problems during short seasons.

Compiled by Calvin L. Blood, International Pacific Halibut Commission.

Regulatory Area	Catch Limit (millions lbs.)	Fishing Days	Catch (millions lbs.)
2A	0.195	2	0.194
		26	0.13
2B	7.8	10	8.5
2C	8.0	2	9.8
3A	31.0	3	29.0
3B	7.2	2	8.1
4A	1.5	3	2.465
4B	1.5	11	1.430
4C	0.5	5	0.540
4D	0.5	3	1.04
4ENW	0.07	126	0.021
4ESE	0.03	7	0.025
Total	58.295		61.245

Table 1. Pacific Coast halibut landings of the United States and Canada (millions of

Year	Canadian (pounds)	U.S.	Total
71	25.5	21.2	46.7
72	22.5	20.4	42.9
73	14.4	17.3	31.7
74	7.4	13.9	21.3
75	11.3	16.3	27.6
76	12.0	15.5	27.5
77	8.8	13.1	21.9
78	8.6	13.4	22.0
79	6.6	15.9	22.5
80	7.6	14.3	21.9
81	5.6	20.1	25.7
82	5.5	23.5	29.0
83	5.4	33.0	38.4
84	8.9	35.9	44.8
85	10.4	45.7	56.7
86	11.0	58.0	69.0
87	12.3	55.9	68.2
88	12.9	61.4	74.3
89	10.1	56.5	66.6
90	8.5	52.7	61.2

* Preliminary

Table 2. Preliminary catch summary of the 1990 Pacific halibut fishery.

Regulatory Area	Catch Limit (millions lbs.)	Fishing Days	Catch (millions lbs.)
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130,000 pounds of the Area 2A catch limit was allocated by the United States Government to twelve Northwest Indian treaty tribes.

GROUNDFISH FISHERY IN 1990

The estimated 1990 groundfish landings by North American fishermen fishing in the North Pacific Ocean is 2,345,514 metric tons (mt), a 1% increase over 1989 (Table 1). Recreational catch estimates (Table 9) for 1990 are incomplete and were not included in the above estimate. U.S. and Canadian joint venture fisheries landed 16% (374,751 mt) of the total commercial groundfish harvest. Landings in Canadian joint venture fisheries increased 4% while landings in U.S. joint venture fisheries decreased 59%. Landings by at-sea processors off Alaska increased 34% and a Washington-Oregon-California at-sea processing operation began. Trawl fisheries accounted for 94% (1,850,544 mt) of the aggregate catch, followed by longline (5%; 97,675 mt), pot (0.7%; 13,070 mt), and "other gear" (0.4%; 9,421 mt) (Table 2).

Statistics by state or province presented in this report are from the Pacific Fisheries Information Network (PacFIN), and reflect the first port of landing. Catches by geographic area are different, and those statistics are also available from PacFIN.

Alaska

Total Alaska groundfish landings were 1,810,990 mt, of which 26% was landed at Alaskan ports and the remaining 74% was landed to at-sea processors. Combined Alaska trawl landings were up approximately 32% over 1989 landings (Tables 3 and 7). This was primarily due to a 33% increase in pollock landings, a 19% increase in Pacific cod landings and a 241% increase in Pacific ocean perch group landings (Tables 3 and 7). Longline landings increased 74% over 1989, due largely to a 208% increase in landings of Pacific cod. Landings with pots increased a dramatic 1,288%, due primarily to large landings of Pacific cod. Landings with miscellaneous gears increased 441 %, due primarily to marked increases in catches of Pacific cod and "other" species.

Table 1 Total commercial groundfish landings in metric tons (mt) for 1989 and 1990 by port of landing with percent change.

Region	1989 (mt)	1990 (mt)	Percent Change
Alaska	344,639	462,909	34
Alaska At-Sea	1,007,782	1,348,081	34
Washington	41,406	34,358	-17
Oregon	36,859	35,548	-4
California	42,314	39,149	-7
WOC At-Sea	0	4,735	NA
Joint Venture	734,797	304,675	-59
Total U.S.	2,207,797	2,229,455	1
Canada (B.C.)	46,724	45,929	-2
Canada Joint Venture	67,117	70,130	4
Total Canada	113,841	116,059	2
Total U.S.-Canada	2,321,638	2,345,514	

British Columbia

Landings of groundfish (excluding halibut) to Canadian ports were 45,929 mt in 1990, an decrease of 2% from 1989 levels. Trawlers landed 39,967 mt, 87% of the total catch and 6% above 1989 levels. Major species in the trawl landings were "other rockfish" (37%), Pacific cod (16%) and Pacific ocean perch (11%).

Canadian landings of groundfish caught by gear other than trawl totaled 8,962 mt. Sablefish traps accounted for 3,205 mt (99.9% sablefish) and smaller Korean-type traps accounted for 161 mt(100% hagfish). Longline accounted for 2,592 mt (43% dogfish, 33% sablefish, and 17% rockfish); and troll/handline accounted for 4 mt (44% lingcod and 17% rockfish).

Washington

Washington trawl landings in 1990 decreased 17% from 1989 (Table 3). More species showed declines in landings than showed increases. Pacific whiting and walleye pollock showed the greatest percentage decrease. Longline landings decreased 19% from 1989 to 1990. There was a 23% decline in longline-landed sablefish, presumably as a result of declining quotas.

Oregon

Oregon trawl landings in 1990 declined 3% from 1989 (Table 3). All but Pacific whiting and the miscellaneous flatfish categories showed a decline in 1990 from 1989. The two largest components in the trawl fishery, "other rockfish" and Dover sole, decreased 6% and 16% respectively. Pacific whiting showed an increase of 2,478%. This large increase was due to the development of shore based processing capability and the resultant change from a sporadic bait fishery to a production human consumption fishery. Longline landings increased 13%, while pot and miscellaneous gear landings were down 13% and 24% respectively. Recreational landings showed a decrease of 9%.

California

California's 1990 commercial groundfish harvest was 39,149 metric tons, with an ex-vessel value of approximately \$28.9 million. All-species 1990 landings decreased approximately 3% from 1989. Rockfishes, Dover sole, Pacific whiting and thornyhead rockfishes were the principal species harvested in 1990. The general historical pattern of landings by gear changed somewhat during 1990. Bottom and midwater trawl landings continued to dominate total landings, however their contribution dropped from 79% in 1989 to 76% in 1990. While the trap component remained stable at about 2%, both the line and "other gears" (primarily setnet) components increased from 8% to 9% and 11% to 13% respectively.

Federal and state regulations for 1990 affected the harvest of sablefish, Dover sole, thornyheads, and widow rockfish in California. Trip limits were again used as the primary means of limiting landings of managed species. At present levels of fishing effort, trip limits offer the most viable method of meeting the Pacific Fishery Management Council (PFMC) objective of a year-round groundfish fishery.

Table 2. Domestic groundfish landings in metric tons for 1989 and 1990 by first port of landing with percent change.

	Trawl		Longline		Pot		Other	Gear	Total	Percent Change	
	1989	1990	1989	1990	1989	1990					
Alaska	319,329	428,714	24,893	26,600	416	6,948	1	648	344,639	462,909	34
Alaska At-Sea	982,488	1,286,460	25,122	60,393	173	1,229	0	0	1,007,782	1,348,081	34
Washington	33,476	27,806	4,199	3,434	172	117	3,559	3,001	41,406	34,358	-17
Oregon	34,225	33,095	929	1,055	898	784	807	613	36,859	35,548	-4
California	33,400	29,767	3,233	3,601	942	626	4,739	5,155	42,314	39,149	-7
WOC At-Sea	0	4,735	0	0	0	0	0	0	0	4,735	NA
Total U.S.	1,402,918	1,810,577	58,376	95,083	2,601	9,704	9,106	9,417	1,473,000	1,924,780	31
Canada (B.C.)	37,638	39,967	4,309	2,592	3,759	3,366	1,018	4	46,724	45,929	-2
Total U.S.- Canada	1,440,556	1,850,544	62,685	97,675	6,360	13,070	10,124	9,421	1,519,724	1,970,709	30

A continuing Asian demand for headed-and-gutted thomyheads drove landings of that species higher again in 1990. The increasing pressure on that resource prompted the Council to set a harvest guideline of 7,900 mt and a weekly trip limit of 7,500 pounds for the 1991 season.

California shore-based landings of Pacific whiting totaled 5,519 metric tons in 1990, a 24% decline from 7,298 metric tons landed in 1989. The most significant portion of the California catch was harvested by five midwater trawl vessels which delivered at Eureka and Crescent City. California landings accounted for 59% of shore-based landings in California, Oregon and Washington.

A bocaccio rockfish stock assessment completed in 1990 indicates a declining resource. A significant fraction of the observed decline is due to poor recruitment since 1978. In response to concerns for bocaccio the PFMC set a 1991 harvest guideline of 1,100 mt and established a trip limit for rockfish of 25,000 pounds with no more than 5,000 pounds of bocaccio allowed south of Coos Bay, Oregon.

California groundfish landings will most likely drop again in 1991 because of market limitations and even more restrictive regulatory limits on the landings of several major groundfish species.

Joint Ventures - Washington, Oregon, and California

In 1990, three foreign nations, the Soviet Union, Poland, and Japan, were involved in joint venture fisheries for Pacific whiting (hake) off Washington, Oregon, and California. The joint venture fishery, in which U.S. vessels deliver their catch at sea to foreign processing vessels, is the largest groundfish fishery off Washington, Oregon and California in terms of tons landed, accounting for more than half of the groundfish landed in 1990. Over 99 percent (170,972 metric tons) of the 171,000 metric tons of whiting available for joint venture processing was taken in 1990, a 16 percent decrease in tonnage since 1989 (Table 8). Approximately one third of the whiting taken in the 1990 joint venture was used for surimi; most of the remaining two-thirds was headed and gutted or fillet product. There was no directed foreign fishery in 1990.

Because the joint venture fishery operated under an "Olympic system" (first come, first served), the initial effort was elevated through early summer resulting in the close of the fishery on June 21, 1990. An inseason survey resulted in the reapportionment of 10,000 metric tons of whiting not needed by domestic processors, increasing the joint venture

allowance from 161,000 metric tons to 171,000 metric tons. The joint venture fishery for whiting reopened on August 1, to a much smaller fleet which completed operations in late October 1990.

At most, 58 foreign vessels (trawl, processing, and support vessels) operated in any one day off the coast, the highest density of foreign vessels in the EEZ since 1981. Over 20 of these were support vessels. A total of 36 different foreign processing vessels received whiting from 48 U.S. trawlers during the 1990 joint venture season. The highest year was 1989 when 44 foreign processing vessels received whiting from 65 U.S. trawlers.

Although shortbelly rockfish were available for joint venture processing in 1990 and applications were received, no joint venture occurred. Substantial areas would have been closed to foreign vessels south of 39° N. latitude for national security reasons, and the potential participants decided the operation would not be viable.

Joint Ventures - Bering Sea and Aleutian Islands

Six foreign nations, Iceland, Japan, Poland, Peoples Republic of China, Republic of Korea, and the Soviet Union were involved in joint venture flatfish and pollock fisheries in the Bering Sea during 1990. A total of 133,310 metric tons were taken, about half of the total quota (257,992 mt). There was no fishery in the Aleutian Islands area, and the total catch in the Bering Sea was about 74% less than in 1989.

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Table 3.		Domestic landings from trawls in metric tons for 1989 and 1990 by first port of landing and species.						
Species by group		Alaska	Washington	Oregon	California	Total U.S.	Canada (B.C.)	Total U.S. & Canada
Dover sole	1989	1,427	2,950	8,886	7,681	20,944	1,370	22,314
	1990	1,147	2,723	7,490	6,090	17,450	1,549	18,999
	% change	-20	-8	-16	-21	-17	13	-15
English sole	1989	7	977	692	955	2,631	1,034	3,665
	1990	10	686	509	770	1,975	1,252	3,227
	% change	43	-30	-26	-19	-25	21	-12
Petrale sole	1989	0	492	862	111	2,131	893	3,024
	1990	116	523	743	600	1,982	888	2,870
	% change	NA	6	-14	-23	-7	-1	-5
Rock sole	1989	948	117	3	9	1,077	1,994	3,071
	1990	3,565	122	2	4	3,693	2,166	5,859
	% change	276	4	-33	-56	243	9	91
P. ocean perch	1989	310	1,557	947	10	2,824	4,810	7,634
	1990	5,102	1,644	576	6	7,328	4,221	11,549
	% change	1,546	6	-39	-40	159	-12	51
Other rockfish	1989	344	10,870	16,402	12,481	40,097	13,136	53,233
	1990	775	11,360	15,359	13,075	40,569	14,707	55,276
	% change	125	5	-6	5	1	12	4
Lingcod	1989	TR	1,182	996	564	2,742	2,787	5,529
	1990	TR	1,234	722	517	2,473	3,611	6,084
	% change	0	-4	-28	-8	-10	30	10
Pacific cod	1989	64,028	1,896	775	TR	66,699	8,910	75,609
	1990	88,765	1,115	231	TR	90,111	6,285	96,396
	% change	39	-41	-70	0	35	-29	27
Pacific whiting	1989	0	8,127	89	6,746	14,962	391	15,353
	1990	0	1,578	2,294	5,273	9,145	763	9,908
	% change	NA	-81	2,478	-22	-39	95	-35
Sablefish	1989	677	580	2,605	2,581	6,443	532	6,975
	1990	390	438	2,519	2,171	5,518	372	5,890
	% change	-42	-24	-3	-16	-14	-30	-16
Walleye pollock	1989	247,906	170	TR	0	248,076	209	248,285
	1990	317,345	56	TR	0	317,401	566	317,967
	% change	28	-67	0	NA	28	171	28
Total above Species	1989	315,647	28,918	32,257	31,804	408,626	36,066	444,692
	1990	417,215	21,479	30,445	28,506	497,645	36,380	534,025
Total all Species	1989	319,329	33,476	34,225	34,400	421,430	37,638	459,068
	1990	428,714	27,806	33,095	29,767	519,382	39,967	559,349
% change 1989-90		34	-17	-3	-13	23	6	22

Table 4. Domestic landings from longlines in metric tons for 1989 and 1990 by major species and first port of landing.

Port	Sablefish		Lingcod		Rockfish		Pacific Cod		Other		Total	
	1989	1990	1989	1990	1989	1990	1989	1990	1989	1990	1989	1990
Alaska	21,694	20,029	266	355	1,245	1,292	1,548	4,468	140	456	24,893	26,600
Washington	1,927	1,477	154	164	403	318	29	11	1,686	1,464	4,199	3,434
Oregon	424	424	116	123	379	501	TR	TR	10	7	929	1,055
California	368	505	360	273	2,359	2,731	TR	0	146	92	3,233	3,601
Total U.S.	24,413	22,435	896	915	4,386	4,842	1,577	4,479	1,982	2,019	33,254	34,690
Canada (B.C.)	929	862	523	176	1,083	430	9	2	1,765	1,122	4,309	2,592
Total U.S.-Canada	25,342	23,297	1,419	1,091	5,469	5,272	1,586	4,481	3,747	3,141	37,563	37,282

Table 5. Domestic landings from pots in metric tons for 1989 and 1990 by major species and first port of landing.

Port	Sablefish		Lingcod		Rockfish		Other		Total	
	1989	1990	1989	1990	1989	1990	1989	1990	1989	1990
Alaska	5	TR	TR	1	0	TR	411	6,947	416	6,948
Washington	163	102	TR	TR	TR	TR	9	15	172	117
Oregon	896	782	TR	TR	1	1	TR	1	898	784
California	865	588	4	2	52	31	21	5	942	626
Total U.S.	1,929	1,472	4	3	53	32	441	6,968	2,428	8,475
Canada (B.C.)	3,759	3,202	0	0	0	3	0	*161	3,759	3,366
Total U.S.-Canada	5,688	4,674	4	3	53	35	441	7,129	6,187	11,841

* catch is all hagfish, caught in small Korean-type traps.

Table 6. Domestic landings from miscellaneous gears in metric tons for 1989 and 1990 by major species and first port of landing.

Port	Sablefish		Lingcod		Rockfish		Pacific Cod		Other		Total	
	1989	1990	1989	1990	1989	1990	1989	1990	1989	1990	1989	1990
Alaska	0	4	0	TR	TR	6	1	338	TR	300	1	648
Washington	6	10	141	95	569	405	4	4	2,839	2,487	3,559	3,001
Oregon	23	9	63	29	672	542	6	1	43	32	807	613
California	139	384	337	273	3,322	3,472	TR	TR	941	1,026	4,739	5,155
Total U.S.	168	407	541	397	4,563	4,425	11	343	3,823	3,845	9,106	9,417
Canada (B.C.)	TR	0	400	2	596	1	2	0	20	1	1,018	4
Total U.S.-Canada	168	407	941	399	5,159	4,426	13	343	3,843	3,846	10,124	9,421

Table 7. Landings by domestic at-sea processors in metric tons for 1989 and 1990 by area, gear, and species.

		Alaska				Washington, Oregon California Trawl	Total Domestic At-Sea Processing
		Trawl	Longline	Pot	Total		
Rock sole	1989	23,630	42	1	23,673	0	23,673
	1990	13,233	6	TR	13,239	0	13,239
Yellowfin sole	1989	1,601	0	0	1,601	0	1,601
	1990	10,425	0	TR	10,425	0	10,425
Other flatfish	1989	11,264	892	0	12,156	0	12,156
	1990	19,758	730	1	20,488	2	20,490
P.ocean perch group	1989	7,106	112	0	7,218	0	7,218
	1990	20,188	33	14	20,235	20	20,255
Other rockfish	1989	21,024	559	0	21,583	0	21,583
	1990	18,404	433	TR	18,837	TR	18,837

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