



45th Annual Report of the

**PACIFIC STATES MARINE
FISHERIES COMMISSION**

FOR THE YEAR 1992

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

PSMFC COMMISSIONERS 1992
Gerald Felando, Chairman

ALASKA

RICHARD ELIASON
Alaska State Senate

CHUCK MEACHAM, JR
Alaska Dept. Fish & Game

PETE ISLEIB
Governor's Appointee

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California State Assembly

AL PETROVICH
California Dept. Fish & Game

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Governor's Appointee

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Oregon Dept. Fish & Wildlife

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Governor's Appointee

WASHINGTON

DEAN SUTHERLAND
Washington State Senate

ED MANARY
Washington Dept. Fisheries

CORREY SPOONER
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".

45th Annual Report
of the
**PACIFIC STATES MARINE
FISHERIES COMMISSION**
FOR THE YEAR 1992

To the Congress of the United States and the Governors and Legislatures of the Five Compacting States, Washington, Oregon, California, Idaho, and Alaska, by the Commissioners of the Pacific States Marine Fisheries Commission in Compliance with the State Enabling Acts Creating the Commission and Public Laws 232; 766; and 315 of the 80th; 87th; and 91st Congresses of the United States Assenting Thereto.

Respectfully submitted,
PACIFIC STATES MARINE FISHERIES COMMISSION

GUY THORNBURGH, Executive Director

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

Al J. Didier, Jr.
EDITOR

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45TH ANNUAL REPORT - 1992

ANNUAL MEETING EVENTS

SUMMARY

The 1992 PSMFC Annual Meeting was held October 4-6 in San Diego, California, chaired by Assemblyman Gerald Felando of the California Legislature. The agenda included in-state meetings for the five member states; a presentation on national marine sanctuaries by Rick Malsed of the Center for Marine Conservation; a presentation on the population status of California sea lions by Dr. Brent Stewart of Hubbs Seaworld Research Institute; a presentation by William Kier on federal water policies as they relate to the Central Valley Project; and two half-day panel discussions on seafood safety and the Wise Use movement. Out-going Alaska Commissioner Pete Isleib received a special award for personal contributions to study of the marine environment.

SPECIAL ISSUES

Seafood Safety

Rob Ross of the California Seafood Institute moderated a panel which considered the current safety of seafood products and proposed changes to the existing inspection system.

Dr. Spencer Garrett of the National Seafood Inspection Laboratory in Pascagoula, Mississippi, described the current debate on seafood safety as the start of a national reevaluation of all food safety standards in light of technological advances that allow detection of low-level contamination. He stated that product safety concerns with seafood are usually well defined and limited to just a few species of fish. The public health hazards can be environmentally induced (both natural and man-made), process induced, distribution induced, or consumer induced. For the future, the Department of Commerce will be offering a new seafood inspection system based upon the Hazard Analysis Critical Control Point (HACCP) concept. Dr. Garrett predicted more research into process-related control of microbiological contaminants, and a global approach to evaluating chemical contaminants using new risk assessment and risk management techniques.

Jodie Silverman of Public Voice for Food and Health Policy recounted reports of a variety of microbiological or chemical contaminations of seafoods, and described current FDA inspections as too infrequent.

Public Voice would like a Congressionally mandated comprehensive seafood safety program for both finfish and shellfish. The program would cover all phases of production, from environmental contamination and the condition of fishing vessels through processing and points of sale. Lower levels of contaminants would be tolerated in order to prevent both chronic and acute illness. State inspection programs would be required to meet federal standards, and there would be regular inspection and enforcement of standards on imports. Since Public Voice does not believe federal statistics on the prevalence of seafood poisonings, it has started a toll-free line to which victims can report such incidents. Ms. Silverman attributed Congress' inability to pass a seafood inspection bill in 1992 to opposition from the administration and the seafood industry, but hoped that such opposition could be overcome in 1993.

Donald Healton, regional director of the FDA Pacific Region, criticized the press for misusing and sensationalizing statistics on seafood contamination. Mr. Healton agreed with a National Academy of Sciences report that said seafood in this country was generally safe, and described a number of specific areas of FDA concern. These include chemical contaminants like domoic acid, ciguatera, scombroid poisoning, and paralytic shellfish poisoning; mercury contamination of some finfish; drug contamination of aquaculture products; microbial contamination by various *Vibrio* species; and economic violations like over-watering or over-breeding. He described current actions by the new FDA Office of Seafoods to determine appropriate standards for known contaminants, determine the nature of contaminants in cases of mysterious illness, prevent transfer of potential pathogens in bilgewater, and discourage "bootlegging" of shellfish from contaminated beaches.

Dick Gutting of the National Fisheries Institute reaffirmed the seafood industry's commitment to quality, and said that industry and Public Voice really want the same things in a seafood inspection program. Mr. Gutting believes that legislation to accomplish those ends has been delayed because issues other than seafood safety have been added. These include jurisdiction battles within state and federal bureaucracies; whistleblower protection, which the seafood industry believes should be addressed generically for all food industries; and disagreements over the need to incorporate elements of risk analysis into existing statutory definitions of what constitutes

safe food. Mr. Gutting urged the fishing industry to add its expertise to the public debate.

Wise Use

Dr. David Hanson of PSMFC moderated a panel that examined the principles of the "Wise Use" movement.

Ron Arnold of the Center for the Defense of Free Enterprise described the diverse collection of groups and individuals that comprise the Wise Use movement. The movement is a competing vision of how the environment should be properly used, and its banner is productive harmony between man and nature. Mr. Arnold views his job as the protection of private property from taking by the government, the prevention of needless intervention by environmentalists in private businesses, and the assertion of private property rights in public lands and waters. He cited as an example the American tuna fishing industry, whose decline he attributed to excessive regulation to protect dolphins. "Dolphin safe" fishing methods required by these regulations were said to be uneconomic and to increase bycatch. Mr. Arnold maintained that a management plan which does not allow even a sustainable level of incidental harvest is bad public policy, and encouraged tuna fishermen to request compensation for economic damage.

Andy Kerr of the Oregon Natural Resources Council characterized the Wise Use movement as a front funded by the extraction industries that receive subsidies for using public lands. These groups are unhappy with recent social change, and have adopted tactics of the environmental movement to combat it. Mr. Kerr urged the environmental movement and the government to focus on "givings" rather than "takings" by government. He maintained that suitable public policies could be achieved by eliminating subsidies that promote certain types of development, and by taxes to recover increased property values that result from government actions.

June Cristle described the Alliance for America as a grassroots organization of individuals who feel they are being forced from their chosen professions by environmental groups who are not returning any benefit to society. She believes that environmental groups use misleading or false information to create public issues that can then be used for fundraising. The Alliance attempts to bring diverse groups of producers together, educate them about each other's issues, and convince them that their interests are similar so they can present a unified lobbying front.

Joan Reiss of the Wilderness Society stressed the concept of stewardship; i.e., the need to pass on a heritage of public lands to future generations. She traced a brief history of public lands in the U.S. from Thomas Jefferson through the 1872 Mining Law and the 1897 Forest Organic Act. Ms. Reiss maintained that many of the tenets of the Wise Use movement are based on antiquated laws or misrepresentations of fact, and that extractive industries are enjoying huge subsidies for their use of public resources. She believes that these industries fund the Wise Use movement, and often take advantage of the communities whose economies they have damaged through their destructive extraction practices.

BUSINESS MEETING

During its annual business meeting the Commission :

- agreed to become involved in the upcoming reauthorizations of the Marine Mammal Protection Act, Endangered Species Act, and Magnuson Act. This involvement was to take the form of committees to develop industry consensus on the issues, if possible, and negotiations with the environmental community, particularly on the MMPA. The Commission endorsed the idea of an additional Commission meeting during the year specifically to address these reauthorizations;
- directed staff to send a letter to NMFS urging full funding of RecFIN and PacFIN programs important to member states; and
- directed staff to send a letter to the Corps of Engineers requesting improvements to the collection and transportation system for smolts in the Columbia River drainage as an interim measure to address the decline of Snake River salmon.

1993 ANNUAL MEETING

The 46th Annual Meeting of PSMFC will be hosted by the state of Idaho. The meeting was tentatively scheduled for October 8-10, at Templin's Resort in Post Falls, Idaho. Jerry Conley was elected chair for 1993.

ANNUAL PSMFC AWARD FOR CONTRIBUTION TO PACIFIC COAST FISHERIES

TOD GHIO

Each year, PSMFC honors special individuals with interests in fisheries who have made extremely significant contributions toward promoting fisheries in our member states. PSMFC is proud to acknowledge Mr. Tod Ghio as the recipient of this award for 1992.



Figure 1. Mr. Tod Ghio (left) accepts his award from PSMFC Chairman Gerald Felando at the 1992 PSMFC Annual Meeting in San Diego.

During over 50 years of involvement in the fishing industry, Mr. Ghio's contributions are numerous. He was a prime force in the creation of the California Seafood Institute, a trade organization representing the interests of the state's seafood harvesters, producers, and distributors. He served two terms as president of the Institute, and is still active in its affairs. Mr. Ghio has also served numerous terms on the Board of Governors for the National Fisheries Institute, the national trade organization representing fishing interests. In addition to his service with these two organizations, Mr. Ghio has devoted considerable time to the improvement of fisheries science. He has been the chairman of the industry advisory group for the California Sea Grant Program for over 20 years. He has worked with state and federal agencies on the Seafood Nomenclature Project to standardize fishery product names. He served on the PFMC Pelagic Species (Billfish) Advisory Panel during the 1970's, and on the Fish and Game Director's Industry Advisory Task Force for the improvement of fisheries in California. He has devoted countless hours to assist in microbial studies of seafood to improve consumer product quality. While much of Mr. Ghio's life has been devoted to the improvement of fisheries practices and science, he has also been a leading advocate for that vast majority of people who enjoy seafood but do not have the time, money, or desire to catch it themselves.

ADMINISTRATIVE REPORTS AND ACTIONS

EXECUTIVE DIRECTOR'S REPORT

1992 was another productive and progressive year for the Pacific States Marine Fisheries Commission. PSMFC, representing the agencies, recreational fishermen, and commercial fishermen of its five member states, made considerable progress working with Congress to maintain and enhance appropriations for the National Marine Fisheries Service; working with the agencies and fishermen on multistate fisheries planning; expanding its role as custodian and coordinator of coastwide fisheries computerized data bases; increasing contract services for the states and related agencies; and working hand-in-hand with fishermen on issues such as crab fishery management, marine debris, and habitat protection. The role of PSMFC is well defined to compliment (not compete with or duplicate) the functions and responsibilities of the states, Regional Councils, and International Commissions in the conservation of living marine resources, and in assisting

fishermen (commercial, recreational, subsistence, and tribal) to achieve rational use of these resources. The following are among the highlights of 1992:

- The **Recreational Fisheries Information Network (RecFIN)** received funding from NMFS in July 1992 under the first year of a three-year Memorandum of Agreement. This program is the successor to the Pacific coast segment of the Marine Recreational Fisheries Statistics Survey that was discontinued in 1990. Sampling begins coastwide in January 1993 to estimate catch and effort for all modes of marine recreational fishing.
- The **Pacific Fisheries Information Network (PacFIN)** began a major re-development in 1992 which will expand its scope beyond fishery catch and effort information for the California to Alaska groundfish fisheries. The "re-defined" PacFin database will consist of individual vessel landing records (pounds, value,

species composition, and distribution of catch to area) and summaries (both catch and vessel) for all commercial landings of all species of fish in Washington, Oregon, and California. When complete, records will be available from 1981 through the present. The completed confidential database will be made available to selected individuals for Fishery Management Plan development, fishery management, and conservation. During this development, the current 11-year old system continues to provide timely in-season summary data to PFMC groundfish fishery managers. Its summaries are also used by economists, biologists, managers, and industry for both PFMC and NPFMC fisheries.

- The **Regional Mark Processing Center** began an extensive development and data migration project to establish the Coded-Wire Tag data base on a new software platform. Administrators hope that the new system will prove easier to manage than the old, and will offer more powerful and flexible ways to specify and retrieve data subsets.

- The **Marine Mammal Observer Program** completed its second year of operation with coverage of the 1992 salmon gill net fisheries on the Columbia River (fall and winter), Grays Harbor (summer and fall), and Willapa Bay (summer). This program is a joint effort of the Commission, the Oregon Department of Fish and Wildlife, and the Washington Department of Wildlife. In its two years of operation, the program has demonstrated that marine mammals are taken only infrequently during the summer and fall fisheries. Some marine mammals are taken during winter fisheries on the Columbia River, but the expanded estimates were consistent with previous studies and with industry self-reporting.

- PSMFC began publishing the "**Habitat Hotline**" to act as an information source and bulletin board of marine, estuarine, and upstream land and water issues that affect the quality and quantity of fisheries habitat. These include estuarine development, upstream logging, mining, water diversions, point and non-point source pollution. PSMFC hopes that this information will help the multi-billion dollar west coast fishing industry participate effectively in state and federal legislatures, local and regional land use planning hearings, the media and schools -- wherever fishermen and their supporting industries can make a difference.

- The **Gill Net Recycling** program made its first shipment of 47,000 pounds of old gill net web in January 1992. The nets were cut up, melted down, and extruded into bicycle seats by a factory in Taiwan. The program was organized by PSMFC with the help of west coast port communities, the fishing industry, and Skagit River Steel and Recycling. Although this sale barely covered costs, separation of nets by nylon type is now possible and should lead to greater recycler interest and higher future prices. The program continued its 1992 collection efforts in Puget Sound ports and in Cordova, Alaska, while expanding collection sites in Alaska to include Dillingham, Haines, and Petersburg.

- 1992 was the second year of BPA's **Squawfish Sport Reward Program**, and PSMFC's participation expanded to include initial voucher review and data entry, in addition to voucher payment and accounting. The goal of this program is to reduce Northern Squawfish populations in the mainstem Columbia River by 10 to 20 percent. Managers believe that this will reduce predation by squawfish on salmonids passing down the Columbia River to the sea, and could reduce

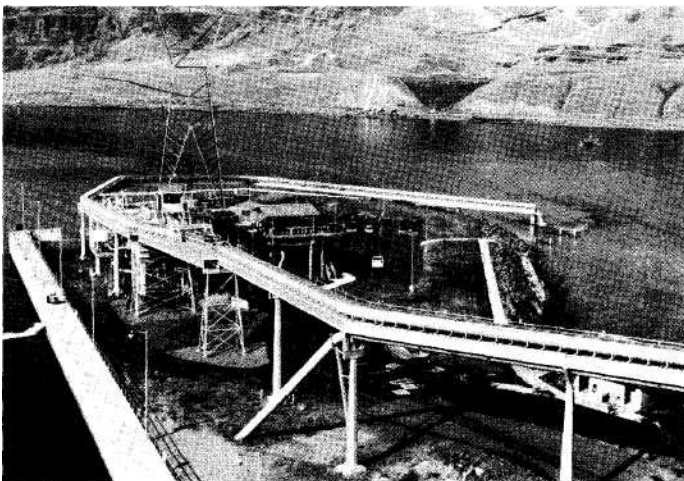


Figure 2. PIT tag detection arrays are installed in salmonid handling facilities at several Columbia River dams. PSMFC maintained six juvenile and one adult detection sites in 1992.

PSMFC PITagis

ONE FISH HISTORY

Tag Id: 7F7E697269 Tag File: EMB89129.SNK Migr Yr: 89
 Species: 3 Tag Site: SNKTRP Org: IDFG
 Run: 2 Tag Date: 08-nay-1989 Hatchery: UNKN
 Rear Type: H Coord Id: EMB Raceway:
 Seq No: 32 Capt Meth: SNKTRP Assoc Mark:
 Length: 209 Tag Meth: HAND Flags:
 Weight: Brd Yr: Tag Temp: 13.0 Stock: UNKN
 Tag Rev: Water Temp: Mort Flag:

Session: PIT TAGGING AT THE SNAKE RIVER TRAP
 Rel File: Rel Date: 08-nay-1989 Transp Type:
 Rel Site: SNKTRP Rel Temp: 13.0 Transp Dur:
 River Km: 522.225 Riv Reach: 17060103

| Site | Obs Date | First Obs | Contr | Coil1 | Coil2 | Coil3 | Coil4 |
|------|----------------------|-----------|-------|-------|-------|-------|-------|
| GRJ | 10-nay-1989 21:02:40 | T | 13 | 2A | | | |
| GOJ | 13-nay-1989 20:30:45 | | 20 | 5B | | | |
| MCJ | 20-nay-1989 07:16:41 | | 60 | 60 | 52 | | |
| GRA | 21-oct-1991 23:20:53 | | 01 | 0C | 0E | | |

NextMaster(F2) Query(KP2) Help(F1) Quit(F3)

Figure 3. PSMFC's PIT Tag Information System (PTAGIS) provides a detailed record of fish passage through the Columbia River drainage.



Figure 4. PSMFC's Net recycling project expanded to Dillingham, Haines, and Petersburg in 1992.

juvenile salmonid mortality by up to 50 percent. In 1992, PSMFC paid \$556,392 for 185,464 squawfish documented in 16,631 vouchers.

- Publication of the **White Sturgeon Management Plan** in 1992 culminated a two-year planning effort coordinated by PSMFC. Participants included representatives from the state agencies of Washington, Oregon, California, and Idaho; NMFS and USFWS; the Columbia River Inter-Tribal Fish Commission; and the Yakima Indian Nation.
- The **Tri-State Dungeness Crab Committee** reached agreement on a plan to manage the Dungeness crab fishery off Washington, Oregon, and California during years when the December 1 opening date must be delayed due to the prevalence of soft-shell crab in northern waters. The agreement specifies a protocol for testing shell condition and meat recovery rate, and divides the coast into separate management zones during those years. The Committee, an assembly of crab fishermen and processors, is sponsored by PSMFC in an attempt to develop industry-generated solutions to fishery management problems. The Committees also spent considerable time investigating options for a limited entry program in the crab fishery. PSMFC conducted two opinion surveys for the Committee to evaluate support for limited entry among fishery participants, and to determine how participants would like to see any future program structured.
- The value of external contracts administered by PSMFC increased by 4%, from \$7,174,638 in the 1991 fiscal year to \$7,484,477 in 1992.
- During December 1992, PSMFC acquired an office building located along the Clackamas River just south of Portland. The new location will allow us to

more efficiently organize our computer and administrative staff, while providing a more enjoyable work environment. After remodeling, PSMFC expects to occupy its new offices early in 1993.

Looking forward to 1993, the Marine Mammal Protection Act (MMPA), the Magnuson Act (MFCMA), and the Endangered Species Act (ESA) are all scheduled for reauthorization. Of these, the MMPA reauthorization is the most pressing, since the interim agreement allowing incidental takes of marine mammals in commercial fisheries expires in October 1993. PSMFC was instrumental in negotiating that five-year exemption from the Act's general take prohibition in 1988. In light of the November 1992 NMFS proposal to govern marine mammal/fisheries interactions, which proposes a quota-based system of marine mammal takes in fisheries, additional PSMFC involvement will be needed to focus NMFS research and management attention on those mammal stocks that truly need attention. In this and other forums, PSMFC will continue to emphasize the health of our marine environment, while continuing the consumptive uses which benefit so many people in the Nation.

IN MEMORIA

As this annual report goes to press late in 1993, the Pacific States Marine Fisheries Commission sadly remembers that the entire West Coast fishing community lost a long-time friend and supporter with the tragic death of Pete Isleib in Bristol Bay during June 1993. Pete was a very good fisherman, and outspoken in his views on fisheries management. Most of you knew him first as a PSMFC advisor from Alaska (1981-1985) and later as a commissioner (1985-1992). He was also a former member of the Alaska Board of Fisheries, and a member of the Steller Sea Lion Recovery Team.

But Pete Isleib was more than just a friend of the fishing industry, he was a friend of the marine environment. His interest in the birds, mammals, plants, and fish of the sea began more than thirty years ago. At the 1992 PSMFC Annual Meeting, we recognized Pete not for the fact that he was a good fisherman, or for his extensive participation in boards and commissions, but for his interest in conservation of the marine environment and the years of personal time and money he spent documenting that environment. Pete was a nationally recognized ornithologist, the author or co-author of numerous articles, monographs, and guides and a contributor to many more. He typically volunteered several weeks each year to document bird migrations, and was a major contributor to the scientific collections of the University of Alaska. His experience, insight, and wit will be sorely missed.

1992 PUBLICATIONS

Habitat Hotline (published periodically) is a bulletin board of current events dealing with water quality, wetlands development, logging, and other habitat issues that affect fisheries.

Summary Report on the 1991 Summer Dip-In Salmon Gillnet Fishery in Willapa Bay and Grays Harbor (January 1992) presents a summary of marine mammal mortality and fishery interaction data collected by observers during the summer gillnet fisheries in Willapa Bay and Grays Harbor during 1991.

PIT Tag Information System (PTAGIS2) User Manual, Version 1.0 (April 1992) is a user's guide to operation of the PSMFC Computer Services Center Passive Integrated Transponder (PIT) Tag Information System.

43rd Annual Report of the Pacific States Marine Fisheries Commission for the Year 1990 (May 1992) contains a summary of PSMFC activities, funding, and expenditures, and reviews of selected Pacific Coast fisheries statistics for 1990.

Summary Report on the 1992 Winter Columbia River Salmon Gillnet Fishery (June 1992) presents a summary of marine mammal mortality and fishery interaction data collected by observers during the winter 1992 Columbia River gillnet fishery.

The Status of Steller Sea Lion Populations and the Development of Fisheries in the Gulf of Alaska and Aleutian Islands - by Andrew W. Trites and Peter A. Larkin was published in July 1992. It assessed the status of Steller sea lions in Alaska, reviewed their population biology, and developed a simulation model to explore the role that harvesting and incidental kills by fisheries may have played in recent sea lion declines.

White Sturgeon Management Framework Plan (August 1992) reviews the biology of white sturgeon; their distribution, abundance, and value; current harvest, management regulations, and enhancement/aquaculture efforts; and ongoing and needed research.

Pacific Salmonid Coded Wire Tag Releases, 1985-1991 (October 1992) documents coded wire tag (CWT) releases of Pacific coast salmon and steelhead during 1985 through 1991. Releases for years before 1985 are available in the 1990 Release Report, which was the last comprehensive report for all CWT releases.

A Summary of Federal and State Laws Designed to Protect Riparian and Coastal Fish Habitat on the West Coast (October 1992) presents an overview of the state (AK, WA, ID, OR, CA) and federal regulations that relate to protecting wetlands, stream-side vegetation, and water quality and quantity.

Mass Marking Anadromous Salmonids: Techniques, Options, and Compatibility with the Coded Wire Tag System (December 1992) is a report from the PSMFC Subcommittee on Mass Marking. It reviews potential mass marking techniques, the compatibility of mass marks with the current coded wire tag system, how mass marks could be used in selective harvest fisheries, efforts to evaluate potential mass marks, and committee recommendations.

Summary Report on the 1992 Summer Dip-In Salmon Gillnet Fishery in Willapa Bay and Grays Harbor (December 1992) presents a summary of marine mammal mortality and fishery interaction data collected by observers during the summer gillnet fisheries in Willapa Bay and Grays Harbor during 1992.

FINANCIAL, AUDIT, AND BUDGET REPORTS

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

1992 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, 1992, 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 on 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.

In our opinion, the general purpose financial statements referred to in the first paragraph present fairly, in all material respects, the financial position of Pacific States Marine Fisheries Commission, as of June 30, 1992, 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 supplementary information 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.
Portland, Oregon
November 25, 1992

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

Totals

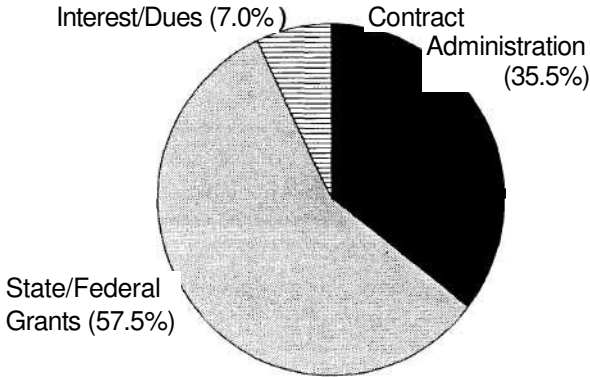
COMBINED BALANCE SHEET - JUNE 30, 1992

| | | General Fixed Assets |
|--|------------------|----------------------------|
| ASSETS | | |
| Cash | 347,429 | 347,429 |
| Receivables: | | |
| Grants and Contracts | 1,403,633 | 1,403,633 |
| Other | 20,762 | 20,762 |
| Fixed Assets | 1,620,053 | 1,620,053 |
| Total Assets | 1,771,824 | 1,620,053 3,391,877 |
| Fund Equity Investment | | |
| LIABILITIES AND FUND BALANCE | | |
| Liabilities | | |
| Accounts Payable | 1,304,258 | 1,304,258 |
| Withholding Taxes | 96 | 96 |
| Capital Lease Obligations | 214,661 | 214,661 |
| Deferred Revenue | 237,446 | 237,446 |
| Other Liabilities | 13,063 | 13,063 |
| Total Liabilities | 1,769,524 | 1,769,524 |
| in General Fixed Assets Fund Balance | | |
| Total Fund Equity | | 1,620,053 1,620,053 |
| Total Liabilities and Fund Equity | 2,300 | 2,300 |
| | 2,300 | 1,620,053 1,622,353 |
| | 1,771,824 | 1,620,053 3,391,877 |

1992 PSMFC OPERATING BUDGET

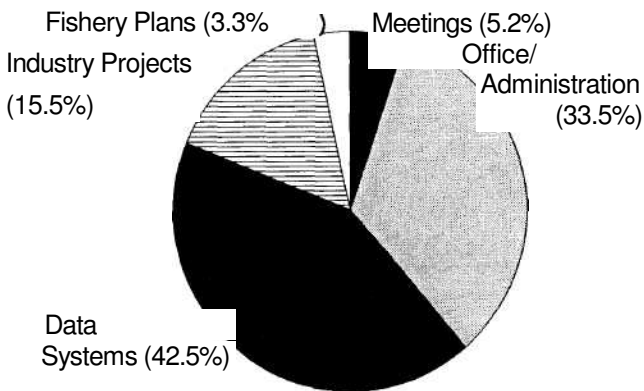
REVENUES

(\$1,734,748)



EXPENDITURES

(\$1,734,748)



**External Contracts for the Period
July 1, 1991 - June 30, 1992**

| Contract | Amount |
|--|------------------|
| Administrative Support of SFFMP | \$ 18,000 |
| Albacore Logbook & Port Sampling | 50,000 |
| Interjurisdictional Fisheries Program | 110,000 |
| PIT Tag Data Base | 256,489 |
| Regional Mark Processing Center | 173,250 |
| Pacific Fisheries Information Network (PacFIN) | 1,600,050 |
| SK Marine Mammal | 22,800 |
| SK Net Recycling | 4,674 |
| EPA Net Collection and Recycling | 23,730 |
| Coastal Education Challenge Grant | 54,323 |
| USFWS Cooperative Interstate Fishery Management | 73,329 |
| USFWS Stream Improvement | 23,911 |
| USFWS Subyearling Chinook Study | 12,432 |
| AK High Seas Drift Net | 45,000 |
| AK Marine Mammal Fishery Interaction | 16,000 |
| CA Northern Sportfish | 30,500 |
| CA Ocean Salmon Stock Analysis | 25,000 |
| CA Sea Urchin Fishery | 75,418 |
| CA Sportfish Sampling Studies | 210,228 |
| CA Non-Market Valuation Guide | 100,000 |
| CA Salmon Protection & Enhancement | 11,967 |
| BPA Implementation of Planning Process | 225,267 |
| BPA Columbia River Coded Wire Tag | 887,452 |
| BPA Coordinated Information System | 612,000 |
| BPA Scientific Review Group Support | 262,200 |
| BPA Smolt Coordination (FPC) | 1,218,253 |
| Columbia Basin Fish & Wildlife Authority | 279,980 |
| Council Support | 25,300 |
| Fish Marking Coordinator Support | 23,597 |
| Columbia River Gill-Net Fisheries Observer Program | 681,702 |
| Squawfish Sport Reward Program | 331,625 |
| Total Contracts | 7,484,477 |

Submitted by Pam Kahut, Fiscal Manager/Treasurer

PACIFIC COAST FISHERY REVIEW REPORTS

DUNGENESS CRAB FISHERY IN 1991-92

Alaska

Total landings were 6.2 million pounds, about 2.9 million pounds less than in 1991. In addition, there were 30,926 pounds of deadloss statewide. The largest area of production was Southeast (4.5 million pounds), followed by Kodiak (1.7 million pounds). Approximately 88,000 pounds was taken in Prince William Sound, Cook Inlet, Alaska Peninsula, and Dutch Harbor, combined. Landings in Kodiak increased over 1991; most of the decline in statewide harvests was due to reduced Southeast area landings.

Washington

Total Dungeness crab landings were 9.2 million pounds. The coastal fishery (December 1, 1991 -September 15, 1992) produced 7.5 million pounds. The Puget Sound fishery produced 1.7 million pounds. The Tribal and non-Tribal fishing season in all Puget Sound catch areas runs 1 October 1990 -15 April 1991; the Tribal fishery on reservation is year-round. The coastal commercial season opened December 1 but was closed December 6 due to high concentrations of a neurotoxin known as domoic acid in the crab viscera. Domoic acid is produced by a marine phytoplankton. The season reopened December 26 after gut concentrations of domoic acid dropped to safe levels. The opening ex vessel price for the coastal fishery was \$1.20 per pound. Two hundred thirty-one vessels made 6,245 landings in the coastal fishery. The 1992 Washington state legislature passed a coastal Dungeness crab management study bill, with the results and WDF recommendations due back during the 1994 legislative session.

Oregon

Oregon ocean landings were 7.6 million pounds, down from 8.2 million pounds last year. Fishing was initially delayed by price disputes, followed by an emergency closure due to concern over domoic acid in crab viscera. Significant landings did not begin until December 22, shifting the peak month of harvest to January. The opening ex vessel prices were \$1.15 to \$1.25. The average for the year was \$1.25. Three hundred seventy-two (372) boats made 8,084 landings in the ocean fishery. An additional 97,480 pounds were landed in the fall bay fishery.

California

California Dungeness crab landings were 9.8 million pounds, an 18% decrease from the previous season. Landings for the northern California ports of Crescent City, Trinidad, Eureka, and Fort Bragg were 4.7, 0.9, 2.9, and 0.14 million pounds, respectively. The ex vessel price opened at \$1.20 per pound and there were 377 vessels in the fleet. Central California landings totaled 1.14 million pounds, down 0.3 million pounds from the 1990-91 season. The ex vessel price opened at \$1.85 per pound.

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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 | 9,429 | 12,717 | 44,375 |
| 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 | 4,747 | 8,597 | 31,083 |
| 1987-88 | 10,571 | 3,324 | 17,858 | 8,685 | 8,754 | 49,192 |
| 1988-89 | 7,667 | 3,348 | 23,896 | 11,154 | 9,552 | 55,617 |
| 1989-90 | 8,145 | 4,648 | 8,629 | 9,236 | 4,548 | 35,206 |
| 1990-91 | 9,062 | 4,160 | 8,883 | 8,248 | 11,956 | 42,309 |
| 10-year Mean | 10,091 | 2,951 | 8,910 | 7,164 | 7,670 | 36,786 |

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 1992

The 1992 Pacific Coast Pandalid shrimp landings in the United States and Canada totaled 89.5 million pounds (Table 2), a 63 percent increase over 1991 landings.

Alaska

Commercial landings of shrimp totaled 3.1 million pounds in 1992, a decrease of about 19% from the 1991 season. Landings of trawl-caught shrimp totaled 2.6 million pounds, and 0.5 million pounds of shrimp were caught by pot.

Southeastern Alaska shrimp landings accounted for 88% of the Alaska total, with 2.2 million pounds of trawl-caught and 478,612 pounds of pot-caught shrimp. Prince William Sound accounted for 8% of the Alaska total with 246,243 pounds of trawl-caught shrimp. The remaining Alaska landings were scattered between Cook Inlet and the Bering Sea.

British Columbia

Total shrimp landings for west coast of Canada trap and trawl fisheries were 7,894,700 pounds.

The trawl fishery consists of offshore otter trawl and inshore beam trawl operations. Offshore smooth pink shrimp, *Pandalus jordani*, landings totaled 4.5 million pounds from the Tofino and Nootka grounds (Vancouver area), a decrease of 17% from 1991. Inside beam trawl landings of *P. borealis*, *P. jordani*, *P. platyceros*, and *Pandalopsis dispar* totaled 809,700 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 2.5 million pounds, an increase of 19% over 1991.

Washington

Coastal pink shrimp landings in 1992 totaled 12,011,892 pounds, an increase of two million pounds over 1991 landings, and about one half million pounds over the average for the previous ten years. Of this total 9,052,313 pounds (75.4%) were caught off the Washington coast. This compares to percentages for 1988 through 1991 that ranged from 82% to 94%. Effort measured in number of landings into Washington (632 landings in 1992) decreased 25.5% from 1991 levels (848 landings) and 39% from 1990 levels (1,035 landings). Eighty-one vessels (61 double-rigged, 19 single-rigged, and one unknown) landed pink shrimp with 35 (29 double and 6 single) landing five or more times. Eighty-eight percent of the 1992 landings were by double-rigged vessels, representing 94.3% of the pounds landed. The decrease in effort from 1991 resulted from a shift in effort southward. A strong one-year-old class grew quickly in southern Oregon and northern California, providing an unusually large volume of good quality shrimp. Shrimp off Washington grow slower, so the high volume of one-year-olds were not large enough to enable harvesting of legal size shrimp.

Catch per hour of towing for all Washington landings combined rose to 606 pounds, the highest level since 1978 (658 pounds), and double the overall 1991 CPUE (302 pounds). Fishing improved through the season as the one-year-olds grew and fishermen were able to retain tows that earlier they would have dumped or graded.

The season opened with ex vessel prices for shrimp at \$0.53 per pound, only a penny below the opening price for 1991. A large volume of shrimp harvested in April, however, soon drove the prices down. Little shrimping activity occurred during most of May, but resumed the latter half of June. The price settled at an average of about \$0.25 until a modest climb to \$0.30 in October. The mean price paid for shrimp over the entire season was \$0.32, down \$0.22 from 1991 and \$0.18 from 1990. Consequently, the ex vessel value of the season catch dropped to \$3.9 million, the first dip below \$5 million since 1984.

The one-year-old year class of 1991 dominated the catches following the usual pattern. Two-year-old shrimp made a strong showing early, but were largely replaced in June by the numerous one-year-olds. The volume of the 1991 year class proved so large that fishermen had difficulty at times meeting the legal mean count per pound requirement of 160 or fewer whole shrimp to the pound. One-year-olds from area 72 grew somewhat more slowly than in 1991, which contributed to the problem. Three citations were issued for delivery of small shrimp, which appeared to slow the harvest of this age group until late summer and fall when size was less of a problem.

The large numbers of small shrimp provided incentive for some fishermen to employ mechanical roller graders on their vessels to separate out a portion of one-year-olds from their catch. In this way they improved the overall grade of their shrimp to the point where it would meet the legal threshold of 160 shrimp to the pound, or a cannery's requirement of 140 or

Table 2. Annual Pacific Coast pandalid shrimp landings (in 1000's of pounds) by state and province.

| 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 | 2,773 | 5,600 | 18,300 | 41,484 | 11,100 | 79,257 |
| 1989 | 2,000 | 6,300 | 15,870 | 49,083 | 13,314 | 86,567 |
| 1990 | 3,197 | 5,845 | 13,504 | 31,883 | 8,684 | 63,113 |
| 1991 | 3,794 | 9,244 | 9,949 | 21,720 | 10,358 | 55,065 |
| 10-yr | 5,647 | 4,147 | 11,412 | 26,747 | 6,852 | 54,805 |
| Mean | | | | | | |
| 1992 | 3,073 | 7,895 | 12,012 | 48,033 | 18,516 | 89,529 |

Table 3. Oregon landings (pounds) of pink shrimp and effort (hours) during 1991 and 1992 by PSMFC area of harvest.

| PSMFC | 1992 | | 1991 | |
|-------------------|-------------------|---------------|-------------------|---------------|
| | Pounds | Hours | Pounds | Hours |
| 72 | 1,058,929 | 1,221 | 2,182,819 | 6,197 |
| 74 | 3,051,023 | 5,049 | 2,533,790 | 7,574 |
| 75 | 32,535 | 59 | 148,463 | 611 |
| 82 | 3,028,304 | 4,939 | 2,629,854 | 9,445 |
| 84 | 4,994,644 | 8,951 | 2,930,908 | 12,893 |
| 86 | 24,323,999 | 29,185 | 5,172,638 | 17,564 |
| 88 | 9,247,427 | 9,356 | 4,769,334 | 11,285 |
| 92 | 2,296,379 | 2,487 | 1,351,853 | 2,575 |
| Total Area | 48,033,240 | 61,248 | 21,719,659 | 68,143 |

Cape Flattery to Cape Elizabeth Cape
 Elizabeth to Willapa Bay Willapa Bay to
 Columbia River Columbia River to Cape
 Falcon Cape Falcon to Cape Perpetua
 Cape Perpetua to Cape Blanco Cape
 Blanco to California border California
 border to Cape Mendocino

fewer to the pound. Unfortunately, the one-year-olds so removed from the catch were wasted. By weight this wastage was undoubtedly small, but in numbers of shrimp it could prove significant if the use of these graders spreads. The graders currently used are somewhat inefficient and apparently slow down the deck work considerably. They appear to be limited in their ability to grade large volumes. Graders are presently used only by those vessels fishing the northern areas off Washington. Shrimp off Oregon and California grow faster, so the incentive to grade lessens as vessels move south. The machines are small and easily mounted or removed with just a few bolts. The present version may be used legitimately, but if a larger and/or more efficient grader is developed it could pose a danger to the resource.

We collected five samples of shrimp from each of two areas (72 & 74) between April 6 and April 13. We did not observe any ovigerous (egg bearing or gravid) females among the 433 females included in these samples, indicating that egg release was complete prior to the opening of the season.

We collected five samples between October 1 and 14 from areas 72 and 74 combined, and five between October 27 and 29. Of 290 females in the earlier samples, only two were gravid. Of the later samples, however, 22 of 76 females from area 72 (29%) and 32 of 137 females from area 74 (23%) were gravid. The results fit the historical pattern: i.e., gravid females are encountered in the catch primarily after the latter half of October.

The presence of an unusually large year class of one-year-olds again led to relatively large numbers of primary females in the fall of 1992. The precise mechanism controlling the proportion of a year class which transitions to females in any year is unknown, but appears to be tied to the relative numbers of males and females present in the population. The 1990 year class of two-year-olds was relatively strong, but apparently not able to supply enough females. Three- and four-year-olds were scarce, largely due to the weak year class of 1989. Fourteen percent of the one-year-olds sampled in October from area 72 were females, and another 20% per transitional, giving an estimated 34% for primary transitioning. Area 74 produced

14.5% female one-year-olds and 14.5% in transition, generating an estimate of 29% primary females.

Due to budget shortfalls at both the state and Federal levels, the Washington Department of Fisheries will drop its Ocean Pink Shrimp project shortly after the end of the current state biennium (July 1, 1993).

Oregon

The total 1992 pink shrimp (*Pandalus Jordanii*) harvest in Oregon was approximately 48.0 million pounds (Table 2), more than double the 1991 landed catch and well above the fifteen year average of 30.5 million pounds. A total of 182 vessels made 2,310 deliveries of pink shrimp into Oregon ports during 1992 compared with 157 vessels and 1,990 deliveries during 1991. CPUE increased to its highest level since 1978.

The total effort (hours) expended to harvest the landed catch was 61,248 h, a decrease of 6,895 h over 1991 (Table 3). Total CPUE was 784 lb/h in 1992, considerably more than the 319 lb/h seen in 1991. As in 1991, PMFC area 86 had the most pounds harvested and the most effort expended.

The 1992 season began quickly with no price related delays. The average ex-vessel price for shrimp varied widely during the 1992 season, probably in response to the unexpectedly large volume of shrimp early in the season and to market conditions. The price started out at about \$0.53/lb and remained steady through April. A sharp price decline occurred early in May and the average price had declined to about \$0.25/lb by mid June. The average price increased gradually to about \$0.40/lb at the end of the season.

Monthly landings were well above average except during

May and October. April landings were unusually large, the largest since 1978 when about 10.3 million pounds crossed the docks. The sharp decline in landings seen in May resulted from price disputes. October landings were dampened by poor weather.

The average count-per-pound of shrimp samples taken from waters off Oregon and California was low during October. Counts increased sharply in samples taken north of the Columbia River. Age-1 shrimp dominated the catch from all areas, consistent with the recent dependence of the fishery on the incoming year-class. Shrimp grew much more rapidly toward the south this year (especially age-1), contributing to the relatively low counts off southern Oregon and California. The apparent slower growth of shrimp taken off Washington may have been due to high shrimp densities.

Zero-age shrimp were reportedly observed by fishermen in many areas during October, especially in southern areas. However, their percentage in market samples was only 1 % or less, and they were noted in only southern areas. The highest percentage of zero-age shrimp during October 1991 was about 24%, taken near Cape Blanco. Zeroes in 1992 samples were about the same size as in 1991, but appeared in samples later

in the season. Clearly, we'd like to have seen a better showing of zeroes in the 1992 market samples.

California

Pacific ocean shrimp landings for the 1992 season totaled 18.5 million pounds statewide, an increase of 78 percent over the 10.4 million pounds landed in 1991, and the highest landings on record. The only area of production in California was in area 92 (Oregon border to False Cape).

The season opened on April 1 with a price settlement of \$0.53 per pound. Most dealers quit buying shrimp in May because of small shrimp size. On June 15, the price dropped to \$0.25 per pound and remained there for the rest of the season.

A total of 81 vessels, 58 single-rigged and 23 double-rigged, made 1,301 deliveries at the ports of Crescent City and Eureka. Shrimp landings were made up of 4.5 million pounds caught off southern Oregon and 14.0 million pounds off California. Single-rigged vessels averaged 686 lbs/hour for the season, an increase of 345 lbs/hour from 1991, and double-rigged vessels averaged 1,218 lbs/hour, an increase of 662 lbs/hour from 1991.

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SEA URCHIN FISHERY IN 1992

Alaska

The Alaska sea urchin fishery landings totaled 454,100 pounds, live weight, in 1992. That total includes approximately 428,000 pounds from Sitka Sound in Southeast Alaska and 26,000 pounds from the remainder of the state, principally Kodiak and Cook Inlet. The Sitka Sound catch comprised over 90% of the statewide harvest and was composed of red urchins taken during the April through October season. Green urchins, taken during the regular November through January season comprised the remainder of the catch. The Sitka Sound fishery is a component of an Alaska Department of Fish and Game research project funded in part by PSMFC.

British Columbia

Preliminary 1992 landings of sea urchins in British Columbia were 28.7 million pounds, and most of these were red sea urchins (26.5 million pounds). Nearly 90% of 1992 red urchin landings were from North Coast management areas. Green sea urchin landings were 2.2 million pounds in 1992, and most of these were from South Coast management areas. The continued increases in annual landings of red sea urchins (with a catch of over 20 million pounds in 1992) prompted DFO to reduce harvest of this species by instituting a quota on the North Coast of 12 million pounds for 1993.

Washington

Total red urchin landings were 2.52 million pounds, with an average ex vessel price of \$1.00 per pound and a landed value of \$2.52 million. Seventy-four boats made landings, although a mid-season Washington State Supreme Court decision upholding the state's limited entry law reduced the number of participants to 63 by the end of the season.

The season opened November 30, 1992 and closed February 10, 1993. Fishing was allowed three days per week in District 3 (Port Angeles) in accordance with the normal three-year rotation scheme. This schedule was set to achieve a total quota of 2.5 million pounds, down 50% from the previous catch level in District 3 in 1989. The 50% reduction in quota was a result of pre-season dive surveys, which

indicated that urchin stocks in District 3 had declined 27% following the previous fishery there.

Mean catch-per-diver-hour was 500 pounds, down from the 567 pounds in 1989 but up from 499 pounds in 1986. Mean harvest depth was three feet deeper this season than in 1989, but divers tended to fish in the same areas as in previous years.

Table 4. Annual landings of sea urchins by state, province, and entire Pacific coast (in 1000's of pounds).

| Year | Alaska | British Columbia | Washington | Oregon | California | Total |
|--------|--------|------------------|------------|---------|------------|----------|
| 1971 | | t | 1.8 | | 0.2 | 2.0 |
| 1972 | | t | 2.5 | | 76.5 | 79.0 |
| 1973 | | 802.5 | 14.7 | | 3,594.7 | 4,411.9 |
| 1974 | | t | 57.4 | | 7,107.8 | 7,165.2 |
| 1975 | | t | 31.0 | | 7,567.2 | 7,598.2 |
| 1976 | | t | 1,544.4 | | 11,106.4 | 12,650.8 |
| 1977 | | 154.5 | 1,045.6 | | 16,536.3 | 17,736.4 |
| 1978 | | 165.3 | 471.4 | | 14,424.3 | 15,061.0 |
| 1979 | | 701.5 | 697.0 | | 20,544.2 | 21,942.7 |
| 1980 | * | 733.7 | 132.9 | | 22,167.1 | 23,033.7 |
| 1981 | • | 254.2 | 304.2 | | 26,333.7 | 26,892.1 |
| 1982 | • | 351.2 | 40.6 | | 18,403.9 | 18,795.7 |
| 1983 | | 2,173.3 | 497.2 | | 15,809.4 | 18,479.9 |
| 1984 | 107.4 | 3,890.1 | 604.5 | | 14,746.5 | 19,348.5 |
| 1985 | 126.0 | 4,001.2 | 878.8 | | 19,994.9 | 25,000.9 |
| 1986 | 282.4 | 4,556.7 | 3,436.1 | 55.8 | 34,130.7 | 42,461.7 |
| 1987 | 757.1 | 4,935.0 | 4,475.0 | 202.8 | 45,636.8 | 56,006.7 |
| 1988 | 244.9 | 5,644.5 | 8,092.4 | 1,947.3 | 51,988.0 | 67,917.1 |
| 1989 | 187.0 | 7,201.2 | 5,242.4 | 7,842.6 | 51,187.3 | 71,660.5 |
| 1990 | 100.3 | 8,008.5 | 6,612.8 | 9,317.2 | 45,269.7 | 69,308.5 |
| 1991 | 225.1 | 16,721.7 | 5,419.2 | 4,722.5 | 41,926.7 | 69,015.2 |
| 1992** | 454.1 | 28,717.1 | 2,526.4 | 2,855.8 | 32,572.2 | 67,125.6 |
| 5-year | 242.3 | 13,258.6 | 5,578.6 | 5,337.1 | 44,588.8 | 69,005.4 |
| Avg. | | | | | | |

* Confidential information: fewer than four fishermen with landings.

** All 1992 data are preliminary.

t Data from 1971-73 combined.

t Data from 1974-77 combined.

Oregon

Red sea urchin landings in Oregon declined for the second year in a row since the peak harvest in 1990. Total landings in 1992 were just over 2.8 million pounds landed by 45 harvesters, with an average ex vessel price of \$0.77 per pound. Port Orford continued to be the major port of landing, even with a voluntary industry closure of Orford Reef from May through September to protect Steller sea lion pupping rocks and reserve Orford Reef for the winter fishery. Average size and catch-per-unit-of-effort continued to decrease indicating the effects of several years of intense fishing on the resource.

Purple sea urchins were harvested for the first time in 1992. Specific areas were opened for the harvest of purple urchins only after surveys of size and densities were conducted. A total harvest of 98,521 pounds, with an average price of \$0.68 per pound, was taken from five separate areas. Over 80% of the harvest was landed into Depoe Bay on the central coast.

California

Preliminary estimates of 1992 sea urchin landings in California totaled 32,257,289 pounds of red urchins and 314,877 pounds of purple urchins. Landings continued to decline in the California fishery as an increased minimum size limit (from 3 to 3V4 inches) in southern California (south of the Monterey-San Luis Obispo county line) became effective in mid-year. Also, the number of fishing days available in October was reduced from 7 to 4 days per week (Monday through Thursday). Northern California sea urchin stocks appear to be fully exploited at this time, with no major unharvested areas left to develop.

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ALBACORE FISHERY IN 1992

Commercial albacore landings increased in 1992 with total landings of approximately 10.8 million pounds in California, Oregon and Washington. This represents a 194% increase from the record low of 1991, but is still only 36% of the 25-year average for this fishery.

California

Although the 1992 commercial landings of albacore in California increased 86% over the 1991 total, the 2.772 million pounds landed was only 20% of the 25-year long term average. The number of boats participating in the fishery increased 32% to 175, 85 of which landed over one ton.

The Western Fishboat Owner's Association and the canneries settled on a price of \$1,950 per ton for albacore over 9 pounds. The August price for albacore rose to \$2,100 per ton for loads of fish averaging over 9 pounds, but prices returned to \$ 1,950 per ton by the end of the season. Albacore under 9 pounds brought about \$740 per ton.

From mid-April to mid-May, 782,000 pounds of albacore were landed by boats returning from the South Pacific. The season in the North Pacific began during July. Albacore were first located 600 miles west of Eureka, completely bypassing southern California, and were subsequently caught over a broad area 75 to 400 miles west of Cape Mendocino. During July, 38,000 pounds of albacore were landed statewide, with the majority in Eureka.

During most of August, effort was concentrated 200 to 400 miles west of Fort Bragg. Two hundred and seven thousand (207,000) pounds of albacore were landed during the month, and Eureka again received most of the landings.

In late August and September, fishing effort was concentrated 100 to 550 miles west of Cape Mendocino and off Oregon and Washington. In September, 1.3 million pounds of albacore were landed, over half of the season total. About two-thirds of the landings were made in San Pedro and in the

San Francisco Bay area, with the remainder spread among other ports.

In October, fishing was concentrated 100 to 200 miles west of Fort Bragg and off Oregon. About half of the landings were made to San Pedro or Terminal Island. Although effort extended into November, weather conditions hampered fishing after late October, and only sporadic catches were made thereafter. Ninety thousand (90,000) pounds of albacore were landed in November, with about 40% of the landings at Bodega Bay.

During the 1992 season, vessels averaged about 91 fish per day, compared to 100 fish per day in 1991. Catch rates were highest in August (150 fish per day). Albacore landed in 1992 averaged 12 pounds, slightly smaller than the 1991 average of 12.5 pounds.

Oregon

There was little activity off Oregon in July. Only a few fish were caught off central Oregon, resulting in four deliveries totalling 25,328 pounds for the month.

Fishing started quickly in August off southern and central Oregon, 80 to 200 miles offshore. The center of fishing activity settled off central Oregon and remained there most of the season. Catches were good in other areas along the Oregon coast as the season progressed (average 50 to 200 fish per day) but the central coast area was consistently productive. Good catches within 50 miles of shore allowed many small boats to participate in the fishery. The fish averaged from 10 to 12 pounds each. August landings totalled 1,953,953 pounds.

The fishery in September continued much as it had in August. The nearshore fishery remained good through about mid-month and then declined. Many of the larger boats fished off Washington and British Columbia as the season progressed. Landings in Oregon during the month were 1,389,097 pounds.

Table 5. 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 | 1,819 | 1,050 | 1,882 | 4,751 |
| 1990 | 1,942 | 2,079 | 2,542 | 6,563 |
| 91 | 1,494 | 1,226 | 943 | 3,663 |
| 25-year Mean | 14,478 | 10,653 | 4,649 | 29,780 |
| 1992* | 2,772 | 3,887 | 4,095 | 10,754 |

*Preliminary

The fishery dropped off steadily in October as the weather deteriorated and the fish moved offshore. Scratch fishing continued intermittently 70 to 200 miles off the coast as weather permitted. There were 478,288 pounds of albacore landed in Oregon during October.

The total albacore landings in Oregon in 1992 were 3,886,958 pounds.

Washington

Washington albacore landings began with a 19 metric ton landing from the area approximately 40° N 137° W on August 5. Most fishing effort was centered 40 to 180 miles off the Washington and Oregon coast between Grays Harbor and Tillamook Head. Albacore caught in this area reportedly ranged from 10 to 12 pounds. During August, 154 vessels landed a total of 1,892,758 pounds.

By the middle of September, the fishing fleet moved further south and effort was centered 60 to 120 miles off central Oregon. The average weight of the fish remained at 10 to 12 pounds. During September, 146 landings totaled 1,456,369 pounds.

Good weather prevailed through mid-October and most of the fishing effort remained off central Oregon. By October's end there were 71 landings totaling 719,701 pounds. There were only 9 landings totaling 25,902 pounds during November and a single landing of 22 pounds was reported during December.

The most productive fishing for the fleet (200 to 400 fish per boat per day) in 1992 was reported during mid-August 120 miles off the Washington coast. Catch rates remained level (50 to 150 fish per day) until bad weather curtailed fishing late October. During 1988 through 1991, a third to half of Washington's albacore was caught off Vancouver Island, Canada; during 1992, only 2% (80,000 pounds) of albacore landed in Washington was caught off Canada. Albacore landings in 1992 (4,094,752 pounds) were 4 times greater than in 1991 (943,241 pounds). This is only the second time in the last 14 years (the other being 1988) in which Washington's albacore landings have totaled more than 4 million pounds. However, 1991 landings are only 88% of Washington's 25-year average of 4,649,000 pounds.

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TROLL SALMON FISHERY IN 1992

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 harvest 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 (target is 61 percent) of the coho salmon taken in Southeast Alaska commercial fisheries.

Commercial trolling for chinook salmon occurs in two seasons; winter (October 11 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.

The harvest of chinook salmon in the winter troll fishery totaled 71,718 fish. The June Experimental, Hatchery Access, and terminal troll fisheries harvested 39,265 chinook salmon and the summer troll fishery on 1-4 July and 23 August harvested 72,543 chinook salmon. The 4.5 day summer troll season for chinook was the shortest ever; a consequence of a restrictive harvest ceiling and high chinook abundances. The total troll chinook harvest for the 1992 accounting year is currently estimated to be 183,526 fish (2.83 million pounds dressed weight or 3.21 million pounds round weight).

Catch statistics for coho salmon totalled 1.93 million fish (13.1 million pounds dressed weight or 14.23 million pounds round weight), making it the second highest troll harvest of coho salmon since statehood.

The estimated ex vessel value for the chinook troll fishery for 1992 was approximately \$7.5 million (\$2.65 per pound), with coho valued at about \$14.8 million (\$1.22 per pound). Because numbers of troll caught chinook decreased from the previous year, the value of that harvest also decreased, despite about 24 percent higher prices paid per pound. Coho value increased with increased catch and prices that jumped nearly 26 percent.

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 15. There were no evaluation closures during this fishery.

One all-species non-treaty troll fishery occurred in 1991 in the area from Cape Falcon, Oregon, north to the U.S.-Canada border. The fishery was open for a total of 17 days on July 20-21, July 25-27, July 31 -August 2, August 6-8, August 12-14, and August 20-22.

Landings from these fisheries, combined with those from the treaty Indian commercial troll fishery, totaled 1.0 million pounds round of chinook and 1.0 million pounds round of coho. The 1992 chinook landings were 25% above the 1991 landings of 0.8 million pounds round and were 11 % above the 10-year mean of 0.9 million pounds round. The 1992 coho landings were 9% below the 1991 landings of 1.1 million pounds round, and 25% above the 10-year average of 0.8 million pounds round.

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

| 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 |
| 1990 | 5.6 | 9.2 | 0.6 | 2.5 | 4.7 | 22.6 |
| 1991 | 5.2 | 8.3 | 0.8 | 0.8 | 3.7 | 18.8 |
| 10-yr Mean | 4.8 | 9.6 | 0.9 | 2.9 | 6.7 | 24.8 |
| 1992† | 3.2 | 10.0 | 1.0 | 1.2 | 1.8 | 17.2 |

* Troll-caught salmon are landed dressed. Round weights are projected. † All 1992 data are preliminary.

| Year | * Alaska | British Columbia | Wash- ington | 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 |
| 1990 | 13.2 | 19.5 | 1.0 | 0.7 | 0.4 | 34.8 |
| 1991 | 11.9 | 19.0 | 1.1 | 1.6 | 0.5 | 34.1 |
| 10-yr | 10.6 | 17.2 | 0.8 | 1.8 | 0.4 | 30.8 |
| Mean | | | | | | |
| 1992t | 14.2 | 13.7 | 1.0 | 0.2 | 0.01 | 29.1 |

* Troll-caught salmon are landed dressed. Round weights are projected. t All 1992 data are preliminary.

Oregon

The area from Cape Falcon north to the Canadian border opened for all species except coho on May 1 and stayed open through its scheduled closing date of June 15. The all-species fishery on the north coast of Oregon was open for 2-day fishing periods, starting July 20 and ending August 22 (17 fishing days). The open periods were separated by 3-day closures. Boats were limited to 30 coho per open period until July 25 when the limit increased to 44 coho. Gear restrictions consisted of not more than four spreads per wire and six inch or larger plugs.

Cape Falcon to Cascade Head had an open all-species-except-coho season from May 1 through May 31

and September 1 through October 31. During May a four spread per wire gear restriction was in place to reduce coho mortality. The all-species fishery in this area was open from July 22 through August 21 with a ratio restriction of not more than two coho for each chinook. August 22 through August 31 the daily landing limit was increased to 25 coho plus the original ratio restriction.

The area from Cascade Head to the South Jetty at Florence had an all species except coho fishery from May 1 through June 23, July 12 through 23 and August 1 through October 31 (148 fishing days). The four spreads per wire gear restriction applied. The all species fishery was open from July 22 through August 7 with a ratio regulation of not more than two coho for each chinook landed.

The areas south of Florence were closed to commercial salmon fishing except for a late season, all salmon except coho fishery that was adopted in state waters from Cape Blanco to Humbug Mountain from October 24 through October 26.

Troll chinook salmon landings reversed a recent downward trend. The 1.2 million pounds (round weight) landed in 1992 was 50% above 1991 landings, but still 59% below the 1982-91 ten year mean of 2.9 million pounds.

The 1992 coho salmon harvest of 0.2 million pounds was 87% below the 1991 level and 89% below the 1982-91 mean of 1.8 million pounds.

California

In 1992, the troll season north of Point Arena was closed the entire season. South of Point Arena, there was a chinook-only fishery under a 10,000 fish quota between Point Reyes and Point San Pedro (approximately 15 miles south of the Golden Gate) from May 1 through May 10. The area between Point Arena and Point San Pedro opened to all-salmon fishing from August 1 through August 31 under a 21,500 chinook quota (which included a carryover from the uncaught quota of the May 1 - 10 fishery). South of Point San Pedro, the troll season was open from May 1 through September 30 with no catch restrictions except on coho. On June 1 Coho fishing opened south of Point Arena, but closed on August 7 when the subarea impact ceiling of 40,000 was reached south of Cascade Head. Statewide, the minimum size limits for chinook and coho were 26 and 22 inches total length, respectively, and barbless hooks were required.

California's preliminary troll chinook landings were 1.8 million pounds round weight, approximately 27% of the previous 10-year average of 6.7 million pounds. Preliminary landings of coho salmon were slightly over 10 thousand pounds round, 3% of the previous 10-year average of 0.4 million pounds.

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SALMON AND STEELHEAD SPORT HARVESTS IN 1991

Alaska

Anglers harvested an estimated 1,036,561 salmon and 5,109 steelhead in Alaska in 1991. The salmon harvest was the second highest on record, exceeded only by the 1989 harvest. It was up 14% from 1990 and was 41 % above the 1981-1990 mean. The Chinook salmon harvest was a record high, up 21 % from 1990 and 51 % above the previous ten-year mean. The coho salmon harvest was also the largest on record, up 20% from 1990 and 66% above the previous ten-year mean. The steelhead harvest was down 9% from 1990 and was 5% below the previous 10-year mean.

Washington

Marine recreational anglers caught a total of 103,618 chinook salmon, 455,173 coho salmon, 45,148 pink salmon, and 4,684 chum, sockeye, and jack salmon. The total of 608,623 salmon harvested in 1991 was 17% below the ten-year mean.

The 1991 Washington sport catch of steelhead was 102,998 fish. This catch was approximately the same as in 1990, and 27% below the ten-year mean.

Oregon

Ocean salmon angler effort was down 23% in 1991 compared to 1990; 190,100 angler trips versus 246,600 in 1990. This partly reflected the early season closure on July 28 south of Cape Falcon. The ocean recreational harvest of 273,815 salmon was up 17% from 1990 levels, reflecting the high catch rates in the brief season.

Chinook salmon harvests continued a downward trend with 14,400 fish landed in 1991 compared to 26,500 in 1990 and the 1981-90 average of 34,357 chinook.

Coho salmon harvests increased in 1991; 259,100 fish compared to 200,300 in 1990 and the 1981-90 average of 191,600 coho.

The steelhead harvest of 95,000 fish in 1991 was 33% below the 1990 harvest of 142,300 fish and well below the 1981-90 average of 150,100 fish. Only a fraction of this harvest is made in the ocean.

Idaho

Poor adult salmon returns continued to impact sport fishing opportunity in 1991. No chinook salmon sport season was opened this year. Limited chinook salmon sport harvest seasons have occurred in only five years since 1978.

Steelhead anglers harvested 26,448 fish in 1991; 8,695 from the 1990-91 run (spring season) and 17,753 from the 1991-92 run (fall season). The 1991 harvest was 13.5% less than the 1990 harvest and 7.5% less than the ten-year average.

California

The 1991 ocean sport salmon catch, estimated at 150,100 fish, was down 22% from the 1990 harvest of 191,400 fish. Coho salmon made up 46% of the total ocean sport salmon catch in 1991. Steelhead catches are not estimated in California and no catch data are available.

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Table 8. Salmon and steelhead sport harvest, 1991.

| State/Province | Chinook | Coho | Pink | Other * Salmon | Steelhead | Total |
|------------------|----------------|------------------|----------------|-------------------|----------------|------------------|
| Alaska | 150,420 | 389,569 | 151,316 | 345,256 | 5,109 | 1,041,670 |
| British Columbia | 260,000 | 250,000 | 312,000 | 111,000 | 10,121 | 943,121 |
| Washington | 103,618 | 455,173 | 45,148 | 4,684 | 102,998 | 711,621 |
| Oregon | 14,400 | 259,100 | - | - | 95,000 | 368,500 |
| Idaho | - | - | - | - | 26,448 | 26,448 |
| California | 80,800 | 69,300 | - | - | ** | 150,100 |
| Total | 609,238 | 1,423,142 | 508,464 | 460,940 | 239,676 | 3,241,460 |

* Sockeye and chum salmon

** Unavailable

Table 9. Salmon and steelhead sport catches (1000's of fish) for the Pacific Coast States, 1975 to 1991 and 10-year (1981-1990) averages.

| Year | Alaska | | Washington | | Oregon | | Idaho | | California | | Total | |
|---------|---------|-----------|------------|-----------|----------|-----------|--------|-----------|-------------|------------|------------|-------|
| | Salmon | Steelhead | * "Salmon | Steelhead | **Salmon | Steelhead | Salmon | Steelhead | * Steelhead | Salmon | •Steelhead | |
| 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 | California | 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 |
| 1989 | 1,097.2 | 6.4 | 645.9 | 236.2 | 305.6 | 112.8 | closed | 38.6 | 237.0 | | 2,285.7 | 394.0 |
| 1990 | 909.1 | 5.6 | 699.4 | 103.0 | 226.8 | 142.3 | 0.9 | 30.6 | 191.4 | | 2,027.6 | 281.5 |
| 10-year | 735.9 | 5.4 | 731.1 | 140.3 | 227.0 | 150.1 | 0.9 | 28.6 | 167.9 | | 1,862.8 | 324.4 |
| Mean | | | | | | | | | | | | |
| 1991 | 1,036.6 | 5.1 | 608.6 | 103.0 | 273.8 | 95.0 | closed | 26.4 | 150.1 | | 2,069.1 | 229.5 |

* Excluding California

** Marine fishery data only

PACIFIC HALIBUT FISHERY IN 1992

The 1992 commercial catch of 59.9 million pounds (Table 10) fell just short of the 60.1 million pound catch limit for the first time since 1978. Landings and number of fishing days are presented by management area in Table 11. Largest abundance and the majority of the catch occurred in the Gulf of Alaska (Alaska Peninsula through Southeast Alaska).

The Canadian Individual Quota Fishery continued in 1992, commencing on March 8 and ending on October 31. This fishing season was approximately one month longer than in 1991 and opened two month earlier. Under the IVQ system, 434 vessels were allowed to catch a predetermined poundage as calculated by the Canadian Department of Fisheries and Oceans (DFO), based on the 8.0 million pound catch limit approved by the IPHC. This is one vessel less than in 1991 as the Minister of Fisheries suspended a halibut license for the 1992 season. The total catch for Area 2B was 7.6 million pounds, 0.4 million pounds under the catch limit with 431 vessels landing halibut.

In the United States, the Pacific halibut fishery is an open access fishery with no limited entry. In 1992, the IPHC processed 6,273 commercial license applications, representing a seven percent decrease from the number issued in 1991. This is the only decrease in licenses issued since 1987 with the exception of 1989 when vessels worked on the Exxon Valdez oil spill clean-up in Prince William Sound. Although this does not reflect the number of vessels which actually fished (some licenses are not fished) there probably were fewer vessels reporting halibut landings in 1992 because of lower prices. Also, whether a vessel or operator fished in 1992 has no effect on the operator's future in the limited entry fishery proposed by the North Pacific Fishery Management Council; therefore, this may have had an effect on lowering the number of vessels fishing for halibut.

In 1992, a U.S./Russia joint fishery took place in the western Bering Sea with removals of halibut estimated at 1.3 million pounds. U.S. longline and trawl vessels caught halibut in Russian waters and landed it in U.S. ports. A regulation was passed in September that mandated the accurate accounting of removals in this fishery. The 1992 estimated removals account for the initial removals reported on a voluntary basis up to September, and the accurate numbers from September to December.

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

Table 10. Pacific Coast halibut landings of the United States and Canada (millions of pounds).

| Year | Canadian | 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 | 8.6 | 53.0 | 61.6 |
| 91 | 7.2 | 49.8 | 57.0 |
| 92 | 7.6 | 52.3 | 59.9 |

Table 11. Preliminary catch summary of the 1992 Pacific halibut fishery.

| Regulatory Area | Catch Limit (millions lbs.) | Fishing Days | Catch (millions lbs.) |
|-----------------|-----------------------------|--------------|-----------------------|
| 2A | 0.24375 | 0.8 | 0.282 |
| 2A* | 0.1525 | 91 | 0.155 |
| 2B | 8.0 | 237 | 7.626 |
| 2C | 10.0 | 5 | 9.819 |
| 3A | 26.6 | 4 | 26.782 |
| 3B | 8.8 | 4 | 8.620 |
| 4A | 2.3 | 3 | 2.699 |
| 4B | 2.3 | 16.5 | 2.317 |
| 4C | 0.8 | 17 | 0.793 |
| 4D | 0.8 | 2 | 0.727 |
| 4E NW | 0.091 | 116 | 0.057 |
| 4E SE | 0.039 | 116 | 0.015 |
| Total | 60.12625 | | 59.892 |

* The United States Government allocated a portion of the Area 2A catch limit to twelve Northwest Indian treaty tribes (152,500 pounds to commercial and 10,000 pounds to subsistence) .

GROUND FISH FISHERY IN 1992

The estimated 1992 groundfish landings by North American fishermen fishing in the North Pacific Ocean is 2,477,158 metric tons (mt), a 16% increase from 1991 (Table 12). The Canadian Joint Venture Fishery decreased 6%. Landings by at-sea processors off Alaska increased 16% and Washington-Oregon-California at-sea processing decreased 24% to 143,074 mt. (Table 1 2). Trawl fisheries accounted for 92% (2,204,121 mt) of the aggregate domestic catch, followed by longline with 7% (161,790 mt), pot with 1% (30,536 mt) and other gear with 0.4% (8,446 mt) (Table 13).

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

Alaska

The 1992 total Alaska groundfish harvest from at-sea processors and Alaskan ports combined was up 20% from 1991 levels. Of the 2,036,967 mt catch, 30% was landed at Alaskan ports. The remaining 70% was delivered to at-sea processors. This is the same distribution as in 1991.

Landings to Alaskan ports increased by 32% from 1991 levels. This increase was due to a 36% increase in trawl landings, a 19% increase in pot landings, and a 4,043% increase in net landings. These more than compensated for the 32% decrease in other gear landings and the 15% decrease in hook and line landings.

The trawl increase was mainly due to increases in landings of walleye pollock. The decrease in hook and line catch was mainly due to decreases in sablefish landings. The 19% increase in pot landings was mainly due to an increase in Pacific cod landings.

Landings to at-sea processors increased by 16% from the 1991 levels. A 77% increase in hook and line catch was

mainly due to increases in sablefish and Arrowtooth flounder catches. The 202% increase in pot catch was mainly due to an increase in Pacific cod catch.

Inshore/offshore allocation of pollock affected the distribution of shore-based and at-sea catches in both the Gulf of Alaska and the Bering Sea/Aleutian Islands. Prohibited species catch caps affected many groundfish fisheries. Marine mammals and concerns about overfishing some groundfish stocks also impacted fisheries in 1992.

British Columbia

Landings of groundfish (excluding halibut) to Canadian ports were 65,977 mt in 1992, an increase of 18% from 1991 levels. Trawlers landed 56,392 mt, (85% of the total catch and 25% above 1991 levels. Major species in the trawl landings were Pacific whiting (37%) and Pacific cod (16%). The large increase in Pacific whiting landings was due to an expansion of shore-based processing capabilities and an allocation to the shore based fishery.

Canadian landings of groundfish caught by gear other than trawl totalled 9,585 mt. Sablefish traps accounted for 3,988 mt (99.9% sablefish) and smaller Korean-type traps accounted for 52 mt (100% hagfish). Longline and handline accounted for 5,342 mt (34% dogfish, 31% rockfish, 17% lingcod and 16% sablefish). Miscellaneous gear, including troll gear and shrimp trawls accounted for 193 mt (82% lingcod).

Each year, Fisheries Branch (DFO) conducts creel surveys of the recreational angling fishery in the Strait of Georgia (Area 4B). Principal target species are Chinook and coho salmon. Provisional estimates of 1992 catches were 5,968 fish for lingcod, 135,763 fish for all rockfish species, and 1,802 fish for dogfish. There was also an estimate of 32,146 fish for other fin fish which includes greenlings and sculpins, as well as other species such as herring.

In 1992, three foreign nations, Poland, China, and Japan, were involved in joint venture fisheries for Pacific whiting of the southwest coast of Vancouver Island (Area 3C). Sixty-five Canadian catcher vessels delivered Pacific whiting and incidental species to ten processing vessels. A total of 69,657 mt of Pacific whiting was processed by 7 Polish vessels, 2 Chinese vessels, and one Japanese vessel.

There were no national or supplemental fisheries for Pacific whiting off southwest Vancouver Island (Area 3C) in 1992.

Washington

Total groundfish landings in Washington increased by 9% from 37,424 mt in 1991 to 40,694 mt in 1992. Trawl landings made up 81% of the total, and increased from 28,911 mt in 1991 to 32,853 mt in 1992. Landings of unspecified rockfish increased 63% and accounted for most of the increase in 1992 total landings, while Pacific whiting and walleye pollock trawl landings were up 41% and 91%, respectively. There was a 15% decrease in longline landings, primarily due to decreases in longline landings of sablefish and spiny dogfish.

Table 12. Total commercial groundfish landings in metric tons (mt) for 1991 and 1992 by port of landing with percent change.

| Region | Percent Change | 1991 | 1992 | |
|--------------------------|----------------|------------------|------------------|-----------|
| | (mt) | (mt) | (mt) | |
| Alaska | | 458,532 | 603,991 | 3 |
| Alaska At-Sea | | 1,232,587 | 1,432,976 | 1 |
| Washington | | 37,424 | 40,694 | 6 |
| Oregon | | 49,905 | 83,394 | - |
| California | | 35,806 | 34,783 | -2 |
| WOC At-Sea | | 188,553 | 143,074 | 1 |
| Total U.S. | | 2,002,807 | 2,338,912 | |
| Canada (B.C.) | | 55,759 | 65,977 | 1 |
| Canada Joint Venture | | 77,118 | 72,269 | 1 |
| Total Canada | | 132,877 | 138,246 | 4 |
| Total U.S.-Canada | | 2,135,684 | 2,477,158 | 16 |

Table 13. Domestic groundfish landings in metric tons for 1991 and 1992 by gear and first port of landing.

| | Trawl | | Longline | | Pots | | Other Gear* | | Total | |
|-------------------------------|------------------|------------------|----------------|----------------|---------------|---------------|--------------|--------------|------------------|------------------|
| | 1991 | 1992 | 1991 | 1992 | 1991 | 1992 | 1991 | 1992 | 1991 | 1992 |
| Alaska | 412,565 | 560,293 | 32,483 | 27,525 | 13,249 | 15,724 | 235 | 449 | 458,532 | 603,991 |
| Alaska At-Sea | 1,162,447 | 1,304,895 | 66,824 | 118,082 | 3,315 | 9,999 | 0 | 0 | 1,232,587 | 1,432,976 |
| Washington | 28,911 | 32,853 | 4,454 | 3,794 | 5 | 15 | 4,055 | 4,033 | 37,424 | 40,694 |
| Oregon | 47,229 | 80,518 | 1,485 | 1,892 | 716 | 410 | 475 | 575 | 49,905 | 83,394 |
| California | 28,202 | 26,096 | 4,215 | 5,155 | 366 | 346 | 3,023 | 3,188 | 35,806 | 34,784 |
| WOC At-Sea | 188,553 | 143,074 | 0 | 0 | 0 | 0 | 0 | 0 | 188,553 | 143,074 |
| Total U.S. | 1,867,907 | 2,147,729 | 109,461 | 156,448 | 17,651 | 26,494 | 7,788 | 8,245 | 2,002,807 | 2,338,913 |
| Canada (B.C.) | 45,066 | 56,392 | 6,520 | 5,342 | 3,948 | 4,042 | 224 | 201 | 55,758 | 65,977 |
| Total U.S.- Canada | 1,912,973 | 2,204,121 | 115,981 | 161,790 | 21,599 | 30,536 | 8,012 | 8,446 | 2,058,565 | 2,404,893 |

* Other Gear includes the following PSMFC Gear groupings: Nets, Trolls, Shrimp Trawls, and Other.

WOC At-Sea

The 1992 Washington-Oregon-California at-sea landings consisted almost entirely of Pacific whiting, and as in 1991 all fishing and processing was done with United States capacity. Total landings decreased 24% from 188,553 mt in 1991 to 143,074 in 1992. The off-shore fishery opened April 15 with 21 processor vessels participating, then closed May 5 when the initial Pacific whiting allocation was reached. Additional releases of Pacific whiting of 30,000 mt in September and 25,000 mt in October involved 10 to 15 vessels. Each additional opening lasted less than two weeks.

Oregon

Total commercial groundfish landings in 1992 were 83,394 mt., a 67% increase over 1991. Trawl landings were 97% of the total and were 70% greater than in 1991. Most of this increase was due to a 271% increase in landings of Pacific whiting. The continued expansion of shore-based processing capabilities and dedicated shore-based allocation were responsible for this increase. Pacific whiting made up 59% of the total groundfish catch. Oregon also saw a 13% increase in widow rockfish landings, due primarily to the development of a fishery outside the 200-mile Exclusive Economic Zone. Flatfish landings were down 26% while overall rockfish landings increased by 11%. Pot landings were down 43%, while hook-and-line gears showed a 27% increase over 1991.

California

California's 1992 commercial groundfish harvest was 34,783 mt, with an ex vessel value of approximately \$28,534,000. All-species 1992 landings decreased approximately 3% or 1,023 mt from the 1991 level. Rockfish, Dover sole, Pacific whiting, thomyheads, and sablefish continue to be the principal species harvested. Increases in harvest were noted for Dover sole, sablefish, and thomyheads, while most other categories declined.

The general distribution of 1992 landings by gear again show a shift in landings from trawl to line. Bottom and midwater trawl landings continue to dominate total landings; however, that gear's proportion of total landings declined to 75% in 1992, down 4% from 1991. The line proportion of the catch continued an increasing trend; from 7% in 1989, to 12% in 1990, to 14% in 1991, and to 15% in 1992. The trap and setnet components remained unchanged from 1991 at 1% and 5%, respectively.

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Table 14. Landings (metric tons) into Alaska during 1992 by gear and by species.

| SPECIES | LONGUNE | OTHER | NETS | POTS | TRAWLS | TOTAL |
|-------------------------------------|---------|-------|------|--------|---------|---------|
| ARROWTOOTH FLOUNDER | 96 | | 3 | 3 | 2,329 | 2,430 |
| ALASKA PLAICE | TR | | | | 3 | 3 |
| DOVER SOLE | TR | | | | 2,222 | 2,222 |
| ENGLISH SOLE | | | | | 2 | 2 |
| FLATHEAD SOLE | 0 | | TR | TR | 1,668 | 1,668 |
| GREENLAND TURBOT | 122 | | | 5 | 57 | 183 |
| REX SOLE | | | | | 1,459 | 1,459 |
| ROCK SOLE | 8 | 4 | 0 | 0 | 4,336 | 4,348 |
| STARRY FLOUNDER | 0 | 1 | | | 33 | 34 |
| YELLOWFIN SOLE | 0 | | | 0 | 3,036 | 3,037 |
| OTHER FLATFISH | | 1 | | | 104 | 105 |
| UNSPECIFIED DEEP-91 FLOUNDER | 1 | | | 0 | 119 | 121 |
| UNSP. SHALLOW-91 FLOUNDER | 1 | | | 0 | 236 | 237 |
| UNSPECIFIED FLATFISH | 7 | | 0 | 1 | 616 | 624 |
| BLACK ROCKFISH | 326 | TR | 0 | TR | 2 | 328 |
| BOCACCIO | 1 | | | | | 1 |
| CANARY ROCKFISH | 4 | | | | | 4 |
| CHINA ROCKFISH | 1 | | | | | 1 |
| COPPER ROCKFISH | 1 | | | | | 1 |
| DUSKY ROCKFISH | 32 | | | TR | 12 | 44 |
| NORTHERN ROCKFISH | 3 | | | | 4 | 7 |
| QUILLBACK ROCKFISH | 100 | TR | | 0 | | 100 |
| REDBANDED ROCKFISH | 20 | | | | TR | 20 |
| REDSTRIPE ROCKFISH | 1 | TR | | | | 1 |
| ROSETHORN ROCKFISH | 2 | | | | TR | 2 |
| ROUGHEYE ROCKFISH | 137 | | | TR | 58 | 196 |
| SHORTRAKER ROCKFISH | 25 | | | TR | 38 | 64 |
| SILVERGREY ROCKFISH | 23 | | | TR | | 23 |
| TIGER ROCKFISH | 3 | | | TR | | 3 |
| YELLOWEYE ROCKFISH | 613 | 0 | | 0 | 5 | 618 |
| YELLOWTAIL ROCKFISH | 2 | | | | | 2 |
| PACIFIC OCEAN PERCH | 7 | | | | 34 | 41 |
| THORNYHEADS | 431 | 0 | | TR | 234 | 665 |
| SHORTRAKER + ROUGHEYE | | | | | 1 | 1 |
| UNSPECIFIED DEMERSAL-91 | 115 | | | TR | 1 | 116 |
| UNSPECIFIED PELAGIC ROCKFISH | 122 | | 0 | TR | 110 | 231 |
| UNSPECIFIED SLOPE-91 | 134 | | TR | TR | 28 | 162 |
| UNSPECIFIED ROCKFISH | 5 | | | TR | 38 | 43 |
| ATKA MACKEREL | TR | | 9 | 1 | 87 | 97 |
| EULACHON | | | | | 131 | 131 |
| LINGCOD | 466 | TR | 0 | 2 | 2 | 471 |
| PACIFIC COD | 7,807 | 2 | 221 | 15,488 | 53,175 | 76,692 |
| SABLEFISH | 16,698 | 2 | | 12 | 502 | 17,214 |
| WALLEYE POLLOCK | 38 | 149 | 57 | 14 | 488,924 | 489,181 |
| OTHER ROUND FISH | | | | | 4 | 4 |
| UNSPECIFIED SMELT | | | | | 90 | 90 |
| SPINY DOGFISH | 4 | | | | 0 | 5 |
| UNSPECIFIED OCTOPUS | 2 | | 0 | 113 | 5 | 120 |
| UNSPECIFIED SCULPIN | 17 | | 0 | 82 | 243 | 342 |
| UNSPECIFIED SHARK | 29 | | | | 31 | 60 |
| UNSPECIFIED SKATE | 113 | | 0 | | 103 | 216 |
| UNSPECIFIED SQUID | TR | | | | 152 | 153 |
| UNSPECIFIED GROUND FISH | 7 | | | 4 | 60 | 71 |
| ALLGROUND FISH | 27,525 | 159 | 290 | 15,724 | 560,293 | 603,991 |

Table 15. Landings (metric tons) to domestic at-sea processors during 1992 by area, gear, and species.

| SPECIES | ALASKA | | | | WASHINGTON OREGON CALIFORNIA AT-SEA | TOTAL DOMESTIC AT-SEA PROCESSING |
|---------------------------------|----------------|--------------|------------------|------------------|--|---|
| | LONGLINE | POTS | TRAWLS | TOTAL | | |
| ARROWTOOTH FLOUNDER | 1,599 | 1 | 19,539 | 21,139 | - | 21,139 |
| UNSPECIFIED TURBOTS | 867 | 0 | 493 | 1,360 | - | 1,360 |
| FLATHEAD SOLE | 2 | - | 799 | 801 | - | 801 |
| ROCK SOLE | 40 | 2 | 39,951 | 39,994 | - | 39,994 |
| YELLOWFIN SOLE | 67 | 6 | 121,091 | 121,164 | - | 121,164 |
| UNSPECIFIED DEEP-91 FLOUNDER | 18 | - | 3,877 | 3,895 | - | 3,895 |
| UNSPECIFIED SHALLOW-91 FLOUNDER | 8 | 0 | 1,943 | 1,952 | - | 1,952 |
| UNSPECIFIED FLATFISH | 247 | 0 | 28,207 | 28,454 | - | 28,454 |
| CANARY ROCKFISH | - | - | - | - | TR | 0 |
| CHILIPEPPER | - | - | - | - | TR | 0 |
| YELLOWTAIL ROCKFISH | - | - | - | - | 27 | 27 |
| OTHER ROCKFISH | - | - | - | - | 1 | 1 |
| PACIFIC OCEAN PERCH | - | - | - | - | 34 | 34 |
| SHORTBELLY ROCKFISH | - | - | - | - | 50 | 50 |
| PACIFIC OCEAN PERCH | 86 | TR | 18,673 | 18,759 | - | 18,759 |
| THORNYHEADS | 183 | - | 857 | 1,040 | TR | 1,040 |
| WIDOW ROCKFISH | - | - | - | - | 5 | 5 |
| SHORTRAKER + ROUGHEYE | 517 | 0 | 2,570 | 3,087 | - | 3,087 |
| SRKR + REYE + NRCK + SHRP | 91 | 0 | 1,299 | 1,390 | - | 1,390 |
| UNSPECIFIED DEMERSAL-91 | 31 | - | 93 | 124 | - | 124 |
| UNSPECIFIED PELAGIC ROCKFISH | 7 | - | 2,764 | 2,771 | - | 2,771 |
| UNSPECIFIED SLOPE-91 | 34 | - | 8,662 | 8,696 | - | 8,696 |
| UNSPECIFIED ROCKFISH | 289 | 2 | 615 | 906 | - | 906 |
| ATKA MACKEREL | 42 | 6 | 59,569 | 59,617 | - | 59,617 |
| JACK MACKEREL | - | - | - | - | 208 | 208 |
| CAPELIN | - | - | 18 | 18 | - | 18 |
| EULACHON | - | - | 14 | 14 | - | 14 |
| LINGCOD | - | - | - | - | TR | 0 |
| PACIFIC COD | 98,132 | 9,539 | 66,290 | 173,961 | - | 173,961 |
| SABLEFISH | 4,219 | 1 | 1,934 | 6,153 | 4 | 6,157 |
| WALLEYE POLLOCK | 2,650 | 96 | 910,367 | 913,112 | - | 913,112 |
| PACIFIC WHITING | - | - | - | - | 142,729 | 142,729 |
| OTHER GROUND FISH | - | - | - | - | 14 | 14 |
| UNSPECIFIED SMELT | - | - | 51 | 51 | - | 51 |
| UNSPECIFIED OCTOPUS | 79 | 101 | 45 | 225 | - | 225 |
| UNSPECIFIED SCULPIN | 956 | 226 | 7,792 | 8,975 | - | 8,975 |
| UNSPECIFIED SHARK | 128 | - | 582 | 710 | - | 710 |
| UNSPECIFIED SKATE | 7,789 | 18 | 6,561 | 14,368 | - | 14,368 |
| UNSPECIFIED SQUID | 0 | 0 | 239 | 240 | - | 240 |
| ALL GROUND FISH | 118,082 | 9,999 | 1,304,895 | 1,432,976 | 143,074 | 1,576,050 |

NOTE: 0 = landed catch less than 0.5 metric tons; TR = landed catch less than 0.05 metric tons

Table 16. Landings (metric tons) into British Columbia ports during 1992 by gear and by species.

| SPECIES | LONGLINE | NETS | POTS | TROLLS | TRAWLS | SHRIMP TRAWLS | TOTAL |
|-------------------------|--------------|----------|--------------|------------|---------------|------------------|---------------|
| ARROWTOOTH FLOUNDER | TR | - | - | - | 1,674 | - | 1,674 |
| DOVER SOLE | - | - | - | - | 1,449 | - | 1,449 |
| ENGLISH SOLE | 3 | - | - | - | 1,207 | - | 1,210 |
| PETRALE SOLE | - | - | - | - | 370 | - | 370 |
| REX SOLE | - | - | - | - | 73 | - | 73 |
| ROCK SOLE | 17 | - | - | - | 2,656 | - | 2,673 |
| STARRY FLOUNDER | TR | - | - | - | 120 | - | 120 |
| OTHER FLATFISH | - | - | - | - | 196 | - | 196 |
| UNSPECIFIED FLATFISH | 2 | - | - | - | - | TR | 2 |
| BLACK ROCKFISH | - | - | - | - | 36 | - | 36 |
| BOCACCIO | - | - | - | - | 0 | - | 0 |
| CANARY ROCKFISH | - | - | - | - | 624 | - | 624 |
| DARKBLOTCHED ROCKFISH | - | - | - | - | 30 | - | 30 |
| REDBANDED ROCKFISH | - | - | - | - | 573 | - | 573 |
| REDSTRIPE ROCKFISH | - | - | - | - | 866 | - | 866 |
| ROUGHEYE ROCKFISH | - | - | 2 | - | 841 | - | 843 |
| SHORTRAKER ROCKFISH | - | - | - | - | 167 | - | 167 |
| SILVERGREY ROCKFISH | - | - | - | - | 1,082 | - | 1,082 |
| SPLITNOSE ROCKFISH | - | - | - | - | 37 | - | 37 |
| VERMILION ROCKFISH | - | - | - | - | 21 | - | 21 |
| YELLOWEYE ROCKFISH | - | - | - | - | 774 | - | 774 |
| YELLOWMOUTH ROCKFISH | 0 | - | - | - | 1,430 | - | 1,430 |
| YELLOWTAIL ROCKFISH | 12 | - | - | TR | 2,533 | - | 2,545 |
| OTHER ROCKFISH | 1,648 | 0 | - | 17 | 85 | 0 | 1,750 |
| PACIFIC OCEAN PERCH | 3 | - | 1 | TR | 2,308 | - | 2,311 |
| THORNYHEADS | 8 | - | - | - | 135 | - | 143 |
| WIDOW ROCKFISH | - | - | - | - | 1,375 | - | 1,375 |
| JACK MACKEREL | - | - | - | - | 4 | - | 4 |
| LINGCOD | 932 | 0 | - | 154 | 2,454 | 4 | 3,544 |
| PACIFIC COD | 45 | - | - | TR | 8,887 | - | 8,932 |
| PACIFIC WHITING | - | - | - | - | 21,060 | - | 21,060 |
| SABLEFISH | 832 | - | 3,988 | - | 258 | - | 5,079 |
| WALLEYE POLLOCK | TR | - | - | - | 2,392 | - | 2,392 |
| SPINY DOGFISH | 1,817 | 3 | - | 18 | 423 | - | 2,261 |
| UNSPECIFIED OCTOPUS | - | - | - | - | 12 | - | 12 |
| UNSPECIFIED SCULPIN | - | - | - | - | 0 | - | 0 |
| UNSPECIFIED SHARK | 0 | - | - | TR | - | - | 0 |
| UNSPECIFIED SKATE | 20 | - | - | - | 104 | - | 124 |
| UNSPECIFIED SQUID | - | - | - | - | TR | - | TR |
| OTHER GROUND FISH | - | - | - | - | 137 | - | 137 |
| UNSPECIFIED GROUND FISH | 3 | 5 | 52 | - | - | - | 60 |
| ALL GROUND FISH | 5,342 | 8 | 4,042 | 189 | 56,392 | 4 | 65,977 |

Table 17. Landings (metric tons) by British Columbia joint-venture directed fisheries during 1992.

| SPECIES | LANDINGS |
|-----------------|---------------|
| PACIFIC WHITING | 69,657 |
| WALLEYE POLLOCK | 1,503 |
| ROCKFISH OTHER | 1,108 |
| FISH TOTAL | 1 |
| | 72,269 |

Table 18. Landings (metric tons) into Washington ports during 1992 by gear and by species.

| SPECIES | LONGLINE | NETS | POTS | TROLLS | TRAWLS | SHRIMP TRAWLS | TOTAL |
|-------------------------|--------------|--------------|-----------|------------|---------------|---------------|---------------|
| ARROWTOOTH FLOUNDER | 1 | - | - | TR | 3,292 | 0 | 3,294 |
| DOVER SOLE | 1 | - | - | - | 2,605 | 8 | 2,614 |
| ENGLISH SOLE | TR | TR | - | - | 765 | TR | 765 |
| PETRALE SOLE | 0 | - | - | - | 476 | 0 | 476 |
| REX SOLE | TR | - | - | - | 105 | 0 | 106 |
| ROCK SOLE | TR | TR | - | TR | 327 | TR | 327 |
| STARRY FLOUNDER | TR | 0 | - | TR | 253 | - | 253 |
| OTHER FLATFISH | TR | TR | - | - | 131 | TR | 131 |
| BOCACCIO | - | - | - | - | 116 | - | 116 |
| CANARY ROCKFISH | - | - | - | - | 641 | - | 641 |
| YELLOWTAIL ROCKFISH | - | - | - | - | 1,330 | - | 1,330 |
| OTHER ROCKFISH | - | - | - | - | 733 | - | 733 |
| PACIFIC OCEAN PERCH | 0 | - | - | - | 1,809 | - | 1,809 |
| WIDOW ROCKFISH | - | - | - | - | 1,038 | - | 1,038 |
| UNSPECIFIED ROCKFISH | 415 | 0 | 0 | 61 | 8,395 | 332 | 9,203 |
| LINGCOD | 76 | TR | - | 40 | 1,128 | 3 | 1,247 |
| PACIFIC COD | 10 | TR | - | 0 | 2,719 | 2 | 2,731 |
| PACIFIC WHITING | - | - | - | - | 4,156 | - | 4,156 |
| SABLEFISH | 1,681 | - | 7 | 1 | 492 | 33 | 2,214 |
| WALLEYE POLLOCK | - | - | - | - | 881 | - | 881 |
| OTHER ROUND FISH | - | 1,701 | - | - | - | TR | 1,701 |
| SPINY DOGFISH | 1,593 | 128 | - | 0 | 1,215 | - | 2,936 |
| UNSPECIFIED SQUID | - | 1 | - | - | TR | 0 | 1 |
| OTHER GROUND FISH | 18 | 1,671 | 7 | TR | 245 | 49 | 1,991 |
| UNSPECIFIED GROUND FISH | - | - | - | - | 0 | TR | 0 |
| ALL GROUND FISH | 3,794 | 3,501 | 15 | 102 | 32,853 | 430 | 40,694 |

NOTE: 0 = landed catch less than 0.5 metric tons; TR = landed catch less than 0.05 metric tons

Table 19. Landings (metric tons) into Oregon ports during 1992 by gear and by species.

| SPECIES | LOGLINE | NETS | POTS | TROLLS | TRAWLS | SHRIMP TRAWLS | TOTAL |
|-------------------------|--------------|----------|------------|-----------|---------------|------------------|---------------|
| ARROWTOOTH FLOUNDER | 0 | - | TR | - | 2,057 | 3 | 2,061 |
| DOVER SOLE | 0 | - | 0 | - | 6,057 | 20 | 6,078 |
| ENGLISH SOLE | - | - | - | - | 626 | 2 | 628 |
| PETRALE SOLE | 1 | - | - | TR | 769 | 2 | 771 |
| REX SOLE | - | - | - | - | 331 | 0 | 332 |
| ROCK SOLE | TR | - | - | - | 0 | - | 0 |
| STARRY FLOUNDER | TR | 0 | TR | - | 71 | 0 | 71 |
| OTHER FLATFISH | TR | - | TR | TR | 478 | 1 | 479 |
| BLACK ROCKFISH | 291 | - | - | - | 35 | - | 326 |
| BOCACCI | TR | - | - | - | 203 | 3 | 206 |
| CANARY ROCKFISH | 161 | - | - | - | 1,654 | 24 | 1,840 |
| CHILIPEPPER | - | - | - | - | 17 | - | 17 |
| DARKBLOTCHED ROCKFISH | - | - | - | - | 469 | 2 | 471 |
| REDSTRIPE ROCKFISH | 0 | - | - | - | 192 | - | 192 |
| SHARPCHIN ROCKFISH | - | - | - | - | 139 | - | 139 |
| SILVERGREY ROCKFISH | 0 | - | - | - | 139 | - | 139 |
| SPLITNOSE ROCKFISH | - | - | - | - | 53 | - | 53 |
| YELLOWEYE ROCKFISH | 65 | - | - | - | 119 | 0 | 184 |
| YELLOWMOUTH ROCKFISH | - | - | - | - | 254 | 1 | 254 |
| YELLOWTAIL ROCKFISH | 117 | - | - | 1 | 3,588 | 276 | 3,981 |
| OTHER ROCKFISH | 76 | - | - | - | 366 | 3 | 445 |
| PACIFIC OCEAN PERCH | TR | - | - | - | 615 | 0 | 615 |
| SHORTBELLY ROCKFISH | - | - | - | - | 3 | - | 3 |
| THORNYHEADS | 6 | - | 0 | - | 4,272 | 0 | 4,278 |
| WIDOW ROCKFISH | 8 | - | - | 0 | 4,944 | 7 | 4,959 |
| UNSPECIFIED ROCKFISH | 86 | - | 1 | 37 | 71 | 78 | 273 |
| JACK MACKEREL | TR | - | - | TR | 317 | - | 317 |
| LINGCOD | 79 | - | 0 | 6 | 643 | 14 | 743 |
| PACIFIC COD | 0 | - | - | TR | 414 | 2 | 416 |
| PACIFIC WHITING | - | - | - | - | 48,959 | 2 | 48,961 |
| SABLEFISH | 992 | - | 407 | 1 | 2,464 | 89 | 3,953 |
| WALLEYE POLLOCK | - | - | - | - | 0 | - | 0 |
| OTHER ROUND FISH | TR | 0 | - | - | - | - | 0 |
| UNSPECIFIED ROUND FISH | TR | - | - | - | TR | - | TR |
| SPINY DOGFISH | TR | - | - | - | 55 | TR | 55 |
| OTHER GROUND FISH | 7 | - | 0 | 0 | 144 | 0 | 152 |
| UNSPECIFIED GROUND FISH | 2 | - | - | - | 2 | - | 3 |
| ALL GROUND FISH | 1,892 | 1 | 410 | 45 | 80,518 | 529 | 83,394 |

NOTE: 0 = landed catch less than 0.5 metric tons; TR = landed catch less than 0.05 metric tons

| SPECIES | Landings (metric tons) into California ports during 1992 by gear and | | | | | | by species. | |
|--------------------------------|--|--------------|--------------|------------|-----------|---------------|---------------|---------------|
| | LONGLINE | OTHER GEARS | NETS | POTS | TROLLS | TRAWLS | SHRIMP TRAWLS | TOTAL |
| ARROWTOOTH FLOUNDER | TR | 2 | | | | 97 | TR | 99 |
| DOVER SOLE | 4 | 434 | 10 | 2 | TR | 8,192 | 0 | 8,643 |
| ENGLISH SOLE | 2 | 34 | 10 | 0 | 0 | 528 | TR | 575 |
| PETRALE SOLE | 2 | 27 | 6 | TR | TR | 497 | TR | 532 |
| REX SOLE | 2 | 26 | 0 | TR | | 413 | TR | 440 |
| ROCK SOLE | 1 | TR | TR | | | 4 | | 4 |
| STARRY FLOUNDER | 2 | 0 | TR | TR | TR | 33 | | 36 |
| OTHER FLATFISH | 16 | 12 | 22 | 0 | 0 | 298 | 0 | 348 |
| UNSPECIFIED FLATFISH | 3 | 2 | 3 | 0 | 0 | 34 | | 42 |
| BLACK ROCKFISH | 139 | | | | | 48 | 0 | 187 |
| BOCACCIO | 426 | 68 | 576 | 2 | 0 | 444 | | 1,516 |
| CANARY ROCKFISH | 86 | | 1 | | | 218 | 4 | 309 |
| CHILIPEPPER | 614 | | 182 | | 0 | 904 | 0 | 1,699 |
| DARKBLOTCHED ROCKFISH | 4 | | 1 | | | 177 | 1 | 182 |
| REDSTRIPE ROCKFISH | | | | | | 1 | | 1 |
| SHARPCHIN ROCKFISH | 4 | | 1 | | | 17 | TR | 22 |
| SILVERGREY ROCKFISH | 0 | | | | | 0 | | 1 |
| SPUTNOSE ROCKFISH | 1 | | 15 | | | 186 | 0 | 201 |
| YELLOWEYE ROCKFISH | 50 | | | | | 11 | TR | 61 |
| YELLOWMOUTH ROCKFISH | 2 | | | | | 1 | | 3 |
| YELLOWTAIL ROCKFISH | 435 | | 3 | | | 196 | 1 | 635 |
| OTHER ROCKFISH | 582 | 6 | 146 | 2 | TR | 437 | 1 | 1,173 |
| PACIFIC OCEAN PERCH | 0 | | 0 | 0 | | 12 | 0 | 13 |
| SHORTBELLY ROCKFISH | TR | | | | | 0 | TR | 0 |
| THORNYHEADS | 18 | 178 | 21 | 4 | 1 | 4,156 | TR | 4,377 |
| WIDOW ROCKFISH | 144 | 48 | 51 | - | TR | 874 | 2 | 1,120 |
| UNSPECIFIED ROCKFISH | 1,652 | 383 | 490 | 14 | 8 | 537 | 2 | 3,084 |
| LINGCOD | 184 | 40 | 111 | 1 | 1 | 275 | 2 | 613 |
| PACIFIC COD | 0 | | | | 0 | 0 | | 1 |
| PACIFIC WHITING | 1 | TR | 0 | | | 4,929 | | 4,930 |
| SABLEFISH | 762 | 154 | 24 | 321 | 17 | 2,387 | 1 | 3,664 |
| OTHER ROUND FISH | TR | | | | | | | TR |
| OTHER GROUND FISH | 20 | 5 | 44 | 1 | TR | 14 | 0 | 83 |
| UNSPECIFIED GROUND FISH | 1 | 4 | 6 | TR | TR | 178 | - | 189 |
| ALL GROUND FISH | 5,155 | 1,423 | 1,723 | 346 | 27 | 26,096 | 15 | 34,783 |

NOTE: 0 = landed catch less than 0.5 metric tons; TR = landed catch less than 0.05 metric tons

PERSONNEL

COMMISSIONERS

The following were commissioners during all or part of 1992:

Alaska

Richard Eliason, Sitka
Pete Isleib, Juneau
Chuck Meacham, Jr., Juneau

California

Gerald Felando, Sacramento
Al Petrovich, Sacramento

Idaho

Ron Beitelspacher, Grangeville
Jerry Conley, Boise
Norman Guth, Salmon

Oregon

Bill Bradbury, Bandon
Paul Heikkila, Coquille
Jim Martin, Portland

Washington

Ed Manary, Olympia
Correy Spooner, Westport
Dean Sutherland, Vancouver

ADVISORS

The Advisory Committee is composed of representatives of the major user groups in each State. The following were Advisory Committee members during all or part of 1992: Alaska

Chris Blackburn, Kodiak
Loren Croxton, Petersburg
Paul Gronholdt, Sand Point
Henry Mitchell, Anchorage
Doug Ogden, Anchorage
Harold Thompson, Sitka
Bruce Wallace, Ketchikan

California

Robert Fletcher, San Diego
Zeke Grader, Sausalito
Harold Olsen, Torrance
Charles Platt, Fort Bragg
Robert Ross, Sacramento
Roger Thomas, Sausalito
Tony West, San Pedro

Idaho

Keith Carlson, Lewiston
Richard Meiers, Eagle
Louis Racine, Pocatello

Oregon

Don Christenson, Newport
Joe Easley, Astoria
Harriet Engblom, Astoria
Herb Goblirsch, Otter Rock
John Marincovich, Astoria
Ron Sparks, Monmouth
Frank Warrens, Portland

Washington

Donald Bevan, Seattle
Ben Deeble, Seattle Steve
Hughes, Seattle "Buzz"
Johnson, Olympia Rudy
Peterson, Seattle Terry
Wright, Olympia Robert
Zuanich, Seattle

COORDINATORS

PSMFC Coordinators facilitate all aspects of PSMFC programs within their State. The following were PSMFC Coordinators in 1992: Alaska

Fred Gaffney, Alaska Dept. Fish & Game

California

Susan Wright, Assemblyman Felando's Staff

Idaho

Steve Huffacker, Idaho Dept. Fish & Game

Oregon

Carolyn Porter, Oregon Dept. Fish & Wildlife

Washington

Judy Bandock, Washington Dept. of Fisheries

PSMFC EXECUTIVE STAFF

Guy Thornburgh, Executive Director
Russell Porter, Assistant Director
David Hanson, Fisheries Coordinator
Al Didier, Program Manager
Pam Kahut, Fiscal Manager/Treasurer
Lori Johnson, Fiscal Assistant
Mary Washkoske, Personnel
Matt Robertson, Payroll
Rick Masters, Accounting Supervisor
Renee Barrett, Account Payable
Carolee Ingram, Executive Secretary
Theresa Fogg, Clerical Specialist
Diana Schar, Receptionist
J. Kenneth Johnson, RMPC Manager
James Longwill, RMPC Computer Specialist
Will Daspit, PacFIN Data Manager
Ed Kiel, PacFIN Computer Programmer
Brad Stenberg, PacFIN Computer Aide
Carter Stein, PIT Tag Database Manager
Robert Buchanan, PIT Tag Systems Engineer
Terry Shane, Computer Services Center Manager
Fran Recht, Habitat/Debris Coordinator
Stephen Phillips, Habitat Specialist
Liza Bauman, Squawfish Program Coordinator