



*40th Annual Report of the*

# **PACIFIC MARINE FISHERIES COMMISSION**

**FOR THE YEAR 1987**

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

## **IN MEMORIAM HENRY JOHN PAVELEK**

This year saw the passing of respected Pacific Marine Fisheries Commission Advisor Henry Pavelek. Henry served as an Advisor to the Commission from 1982 until the time of his death on July 27, 1987. He was a valued advisor because of his love of the outdoors and his life-long involvement as a conservationist. He was always respected for his views and the patient, persistent manner in which he presented them. His underlying goal was always to assure the well being of the fishery resources. Those who worked with Henry were always swayed by his gentle persistence and his genuine commitment, interest in the fishery resources and his willingness to help.

Henry was born in Cyclone, Texas and grew up in Woodburn, Oregon where he graduated from Woodburn High School. He graduated from Oregon State University with a degree in Agriculture in 1940. He received his Masters degree from the University of Michigan in 1965. After serving in World War II in the U.S. Army he took a job with the Soil Conservation Service in Tillamook County, Oregon as a soil conservationist. He became the area conservationist in 1951 in Albany, Oregon. He served as Assistant State Conservationist in South Dakota in 1961, became the Oregon State Deputy Conservationist in 1966 and retired to Corvallis, Oregon in 1973.

Henry is survived by his wife, three sons, two daughters and ten grandchildren. The Commission honored Henry at its Annual Meeting on October 27, 1987 in San Pedro, California. At that time a plaque was read in honor of Henry's work with the Commission. The plaque was delivered after the meeting to his wife along with a letter of sorrow from the Commission and the Oregon Department of Fish & Wildlife. We will miss Henry very much, but are grateful for his many contributions to the future of Pacific Coast fisheries.

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of the  
**PACIFIC MARINE  
FISHERIES COMMISSION**  
FOR THE YEAR 1987

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 Marine Fisheries Commission in Compliance with the State Enabling Acts Creating the Commission and Public Laws 232; 776; and 315 of the 80th; 87th; and 91 st Congresses of the United States Assenting Thereto.

Respectfully submitted,  
PACIFIC MARINE FISHERIES COMMISSION

OFFICERS OF THE COMMISSION

Chairman	1st Vice	Gerald Felando, California
Chairman	2nd Vice	Jerry Conley, Director, IDFG
Chairman	3rd Vice	Joe Blum, Director, WDF
Chairman	4th Vice	Don Collinsworth, Commissioner, ADFG
Chairman		Harry Wagner, Chief, Fish Division, ODFW

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Russell G. Porter  
EDITOR  
April, 1988

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# 40th

## 1947 Anniversary 1987

This year marks the fortieth year since the Commission was established in 1947. The authority for the establishment of the Pacific Marine Fisheries Commission was granted by the U.S. Congress by an Act approved July 24, 1947. It was for the purpose of an interstate compact relating to "the better utilization of the fisheries, marine, shell and anadromous, of the Pacific coast."

The compact was first approved by the legislature of the state of California and signed by then Governor Earl Warren on December 9, 1947. Second to approve the compact was the state of Washington when Governor Mon C. Wallgren signed the compact on December 15, 1947. Oregon approved the compact on January 26, 1948 and it was signed by Governor John H. Hall. These three states made up the Pacific Marine Fisheries Commission until 1966 when the state of Idaho joined the Commission by signature of its Governor Robert C. Smylie on April 29, 1966. The State of Alaska became a member on July 25, 1968 by signature of Governor Walter J. Hickel. This brought the Commission to its current membership of the five Pacific States concerned with marine and anadromous fishes.

The budget of the Commission its first year (1947-48) was \$15,000. Today it has grown to \$415,000 and the Commission administers an additional \$4.5 million in contract funds per year. In its early years the Commission coordinated research activities and made recommendations for management of the coastal fisheries to its member states. Today the Commission's primary functions are data base management, administration of contract funds for its member states, resolving coastwide sport and commercial industry issues, and lobbying efforts relating to funding and resource management.

Pictured below is the first annual meeting of the Commission held in San Francisco, California on April 5-6, 1948. We would like to make positive identification of the individuals pictured in the photograph. If you could help in this regard we would appreciate hearing from you. There are 21 people in the picture and the caption available lists only 19. The information we have for those in the picture is as follows: clockwise from the left—Bert Johnson, Harold Lokken, Fred Halberg, Don Fry, Howard McCully, Art Paquet, Harry Linse, Don Saxby, Bill Kay(?), Andrew Naterlin, Leonard Hall, Nick



Kuljis, Robert Jones, Earl Hill, Richard Croker, John Veatch, Eugene Bennett, Milo Moore, and Hazel Noone. We know those names at the beginning and at the end of the table are correct, but somewhere in the middle of the picture there is confusion as to who is who and what names are missing. Thanks for your help.

Finally we would like to pay tribute to the Executive Directors of the Commission since its founding in 1947. The list of those individuals who have served in this regard are as follows:

- Executive Officer — Arnie Suomela, 1947-1948
- Research Coordinator— John T. Gharrett, 1949-1955  
Milton C. James, 1955-1959
- Executive Director — Milton C. James, 1959  
Alphonse Kemmerich, 1960-1962  
Richard Croker, 1963  
Leon Verhoeven, 1963-1971 John  
P. Harville, 1971-1982 Lawrence  
D. Six, 1983-1987 Guy N.  
Thornburgh, 1987-date

Under their guidance the Commission has undergone many changes and a redefinition of its major activities while still maintaining the basic function for which it was established back in 1947. The financial health and future utility of the Commission is stronger than ever before as it moves toward half a century of service to its member states. This could never have been accomplished without the many years of service of all the fishing industry Advisors, Commissioners, and State agency Scientists and Managers who have supplied their service to the Commission over the years. The success of the Commission is directly related to their efforts for the benefit of the Pacific Coast fishery resources.

# CONTENTS

<b>ANNUAL MEETING EVENTS .....</b>	<b>1</b>
Summary.....	1
Executive Directors Report.....	1
1987 Issues .....	1
Marine Mammals.....	1
Marine Debris .....	2
Collisions at Sea .....	2
Fishery Economic Study .....	2
User Fees.....	2
Tributyltin.....	2
Annual PMFC Award.....	3
<b>ADMINISTRATIVE REPORTS AND ACTIONS .....</b>	<b>3</b>
Commission Actions.....	3
Treasurer's Report.....	4
Federal Appropriations.....	4
Fishery Data Projects and Contract Services .....	4
Regional PMFC Data Projects .....	4
Tag Coordination.....	4
Pacific Fishery Information Network .....	5
Contract Services for Federal Funds to the States .....	5
Contract Services for other Organizations .....	5
Columbia Basin Fish & Wildlife Authority.....	5
Fish Passage Center .....	5
Columbia River System & Subbasin Planning Contract .....	5
Age Determination of Groundfish Species .....	5
Logbooks .....	5
External Activities.....	6
Regional Councils.....	6
MAFAC.....	6
U.S.-Canada Groundfish .....	6
IAFWA .....	6
1987 Publications .....	6
1988 Annual Meeting.....	6
Personnel .....	6
Commissioners .....	6
Advisors .....	6
Coordinators .....	7
PMFC Staff .....	7
<b>APPENDIX I-FINANCIAL, AUDIT AND BUDGET REPORTS .....</b>	<b>7</b>
1987 Financial Statement .....	7
Audit Reports .....	8
1987 Budget Reports .....	10
<b>APPENDIX II-PACIFIC COAST FISHERY REVIEW REPORTS.....</b>	<b>11</b>
Albacore Fishery in 1987.....	11
Pacific Halibut Fishery in 1987 .....	12
Groundfish Fishery in 1987 .....	14
Dungeness Crab Fishery in 1987.....	20
Troll Salmon Fishery in 1987.....	21
Sport Salmon and Steelhead Fishery in 1987.....	23
Pacific Shrimp Fishery in 1987 .....	24
Foreign Fishing Activities off the Pacific Coast in 1987 .....	25

# 40TH ANNUAL REPORT-1987

## ANNUAL MEETING EVENTS

### SUMMARY

The Pacific Marine Fisheries Commission's 40th Annual Meeting was held on October 27-28, 1987 at San Pedro, California. It was presided over by Chairman Gerald Felando, California State Legislator and Commissioner from California. The Annual Meeting included a half-day panel presentation on Marine Mammals and a half-day panel on Marine Debris. In addition, there were discussions of the problem of collisions at sea and the economic value of the Pacific Coast commercial fisheries. The Commission held its annual business meeting and selected issue topics for 1988.

### EXECUTIVE DIRECTORS REPORT<sup>1\*</sup>

The Pacific Marine Fisheries Commission celebrated its fortieth anniversary in 1987—marking four decades of "promoting marine fisheries" (both commercial and recreational) for Alaska, California, Idaho, Oregon and Washington.

There have been many changes in west coast fisheries since 1947. Technologically we have seen the development of the microwire tag, computers, sophisticated navigational equipment and more powerful fishing gear. Congress has created statutes such as the Submerged Lands Act, Coastal Zone Management Act, Marine Mammal Protection Act and of course the Magnuson Fisheries Conservation and Management Act. Concerns have arisen for fisheries habitat, overcapitalization of fisheries, increasing insurance costs, decreasing state and federal budgets, and recreational versus commercial access to fisheries.

Expectantly, the Marine Commission has changed its operations as well. PMFC has found it essential to lobby congress for industry and agency needs; to coordinate the marking and recovery of fish tags along the entire coast; to centralize coastwide landing data for everyone's use; to challenge federal statutes; to compliment, and not duplicate, the roles of the Regional Fishery Management Councils; to assist the states with administering contractual funds; to sponsor workshops on industry issues; and to adjust the make-up of its Commissioners and Advisors. Several substantive changes have occurred within PMFC in 1987. For the first time, each of the five member states has appointed a person from that state's legislative body as one of the state's three commissioners to PMFC. Along with the five state fishery directors and a member from each state's general public, the fifteen commissioners are well prepared to address a wide array of issues.

In addition, the Commission modified its meeting practices to intensify the in-state caucuses (two per year now) and conserve travel expenses by eliminating the spring Commissioners meeting and reducing attendance at the annual meeting. The annual meeting will now be attended by the Commissioners and the chairpersons of the state Advisory Committees. This approach not only saves money, but it also provides greater opportunity for each state delegation to meet and address fishery issues of interest to that state and the coast.

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1) Lawrence Six, PMFC's Executive Director since 1985, resigned from PMFC in the spring of 1987 to become the Executive Director of the Pacific Fishery Management Council (after the retirement of Joseph Greenley). Guy Thornburgh, who had worked with the Alaska Department of Fish and Game since 1976, became the Commission's Executive Director in April, 1987.

Finally, in 1987 the Commission made a major commitment to actively pursue changing a federal environmental law. Since 1973 PMFC has passed a total of eight resolutions to amend the Marine Mammal Protection Act. In 1987, however, the Commission took the initiative to document the problem, develop a solution, and present its recommendations to the sport and commercial fisheries industry across the nation, to the environmental community and to congress.

### 1987 ISSUES

**Marine Mammals.** At the 1986 Annual Meeting in Newport, Oregon, the Commission identified marine mammals and their interaction with fisheries and other living marine resources as an issue of concern. The Commission has had numerous resolutions addressing needed changes to the Marine Mammal Protection Act since it was passed in 1972. With the Act up for reauthorization in 1988, this issue was adopted for major study and consideration by the Commission in 1987 and 1988.

The Commission established a technical committee of marine mammal scientists from its member states' fishery agencies and with technical representatives from the National Marine Fisheries Service and the United States Fish and Wildlife Service. The Commission asked the Committee to identify and document modifications to the Marine Mammal Protection Act that, if developed as successful amendments, would result in a more integrated approach to the management and conservation of marine mammals, fisheries, and fishery resources. The Committee met on 18-19 February and 8-9 June in Portland to discuss various aspects of the report which all members worked on during the year. The Committee's report was first published on September 1, 1987 and is entitled, "Report on Proposed Amendments to the Marine Mammal Protection Act."

The report was presented to the Commission at its 1987 Annual Meeting in San Pedro, California. It was also reviewed and discussed in a public panel on Marine Mammals on October 27, 1987 as a part of the Annual Meeting. The Commission unanimously adopted the report of the Marine Mammal Committee and its four proposed amendments on October 28, 1987. These four proposed amendments will be carried to congress in 1988 in an attempt to have them incorporated into the Marine Mammal Protection Act when it comes up for reauthorization in the fall. The four proposed amendments are as follows:

1) **Amend the MMPA to provide appropriate government entities with the authority to lethally remove nuisance marine mammals in limited situations where the conservation and protection of other significant resources are at risk.** The Commission feels that in certain situations the lethal removal of known destructive individual animals is the option that can best benefit the mammal population as well as other marine resources.

2) **Amend the MMPA to provide marine mammals with the same system of protection as provided other wild life populations.** The take of animals from threatened and depleted populations (except for most marine mammals be cause of the MMPA) occurs as part of comprehensive management and monitoring programs. These takes are allowed as long as they do not jeopardize the continued existence of those populations. Such an amendment to the MMPA would allow conservation and management programs to be devel-

oped for any marine mammal population and would benefit all living marine resources of concern.

3) **Amend the MMPA to provide the option for the development of cooperative marine mammal management programs by state and federal resource agencies.** The federal agencies with jurisdiction for marine mammals have not developed management programs for many populations of particular concern to the coastal states. Transfer of management authority to the state agencies, as currently provided in the MMPA, has proven difficult to accomplish. The Commission feels that the combined and directed efforts of the appropriate federal and state authorities may be required to successfully develop management programs for many marine mammal populations.

4) **Amend the MMPA to provide funding for state agencies to participate in cooperative state/federal programs to monitor marine mammal populations and to manage their interactions with other marine resources and human activities.** The Commission recognizes that the fiscal resources of the federal agencies with jurisdiction for marine mammals are not being sufficiently directed toward issues of concern to the coastal states, and that the current marine mammal program budgets of those agencies are inadequate to deal with all marine mammal issues. Given the lack of authority for marine mammal management, the state agencies have not been able to secure their own funds at levels required to carry out needed research and develop management programs. As a result, the goals and objectives of the MMPA are not being met in many cases.

Subsequent to the Annual Meeting the Commission staff prepared a news release on the proposed amendments. The staff provided information for numerous newspaper editorials and articles on the amendments and the marine mammal/fishery interaction problem. Television appearances by PMFC staff also provided additional information on the proposed amendments. As a result of the panel discussion at the annual meeting on the Commission's proposed amendments, some editorial changes were made in the Commission's Technical Committee report. The report was reprinted in final form on December 1, 1987. Copies of the report may be obtained from the PMFC headquarters office in Portland.

**Marine Debris.** At the 1986 Annual Meeting, the Commission emphasized the need to help educate the various ocean user groups about marine debris, particularly plastics and webbing. As a result the Commission held a half-day panel discussion at the 1987 Annual Meeting in San Pedro, California on the issue of Marine Debris. This panel described marine debris programs across the nation and provided a review of the issue and how others are addressing it. Discussion and questions from the public were also included as part of the panel. This information has been published by the Commission under the title, "Proceedings of the Marine Debris Workshop, 1987." Copies of these proceedings are available from the Commission headquarters office in Portland, Oregon.

The Commission went on record in favor of House Bill 940 which would provide for the regulation of the disposal of plastic materials and other garbage at sea. It also provides for negotiation, regulation and research regarding fishing with plastic driftnets. In addition, the Commission established a Marine Debris Committee for 1988 which will finalize a code of ethics on disposal of plastics. This code of ethics would be based on that put forward at the, "North Pacific Rim Fishermen's Conference on Marine Debris" held in Hawaii and attended by representatives from many countries. The code of ethics would be distributed to marinas and docks as well as provided for posting in the wheel house of vessels. The Committee was also asked to investigate a) ways of informing port facilities of the need to accommodate plas-

tic refuse returned to port by fishing vessels and b) alternatives to plastic packaging.

**Collisions at Sea.** The Commission established a collisions at sea committee after the 1986 Annual Meeting. The Committee met in San Francisco, California with representatives of the Marine Safety Office of the U.S. Coast Guard. The Coast Guard gave a presentation on the Offshore Vessel Movement Reporting System (OVMRS). The OVMRS set up traffic lanes and reporting procedures for approaching or departing the San Francisco Bay entrance.

The Committee recommended and the Commission approved the following actions to undertake during 1988:

1. Explore expanding the vessel traffic system to other port areas along the coast. Investigate the equipment in place and/or needed to establish such systems in San Diego, Los Angeles/San Pedro, Santa Barbara Channel, Columbia River, Point Blanco and Seattle/Strait of Juan de Fuca.

2. Provide information on taking the lead in generating IMO (International Maritime Organization) approved traffic lanes along the Coast. The IMO must approve traffic lanes established outside of 3-miles. This requires consideration of port-access/route studies and user input of desired routes. The process can take up to 8 years to complete.

3. The Committee felt the following additional items would assist with the collision problem:

- Safety/navigation seminars for fishermen
- Publicizing the availability of traffic control information
- Explore the operation and capabilities of the vessel control data generated and transmitted by the Texaco Oil Platform at the southern end of the Santa Barbara channel
- Investigate exact procedure, requirements and the time frame to get IMO approved traffic lanes in place.

**Fishery Economic Study.** The Commission contracted with Drs. Hans Radtke and William Jensen to employ their computer model to generate a review of the contribution of the west coast fishing industry to the economy. Their report was published by the Commission and is entitled, "The West Coast Seafood Industry: Its Importance to the West Coast Economy in 1986." The report uses the 4.6 billion pounds of fish harvested by the West coast domestic fishing fleet (Alaska, Washington, Oregon and California) in 1986 to analyze the contribution from these landings to the West coast economy. The total personal income resulting from the West coast fishing industry is estimated by the report to be \$3.5 billion. The income represents about 177,000 full-time equivalent jobs in a variety of businesses and industries-jobs that are being supported by harvesting and processing of fish. For the West coast as a whole 31% of the income created goes to the general consumer sector and the other 17% goes to workers and proprietors supporting the fishing industry by selling them repair work, fuel, etc. The report also includes an appendix that enumerates the contributions of the industry to the region by type of business. Copies of the report are available from the Commission.

**User Fees.** Congressman Young of Alaska introduced HR 3341, the "Fisheries Research Funding Act of 1987," in September, 1987. This bill places user fees on harvesting and processing fish in the Exclusive Economic Zone (3-200 mile limit) and requires licensing of recreational fishermen in this EEZ. The Commission voted unanimously at its annual meeting to oppose any federal initiative for user fees, including HR3341.

**Tributyltin.** The Commission supported the efforts of the Pacific Coast Legislative Task Force to restrict the sale and use of anti-foulant marine paints containing organotin such as tributyltin. The Commission also supported similar legislation at the national level.



# ANNUAL PMFC AWARD FOR CONTRIBUTION TO PACIFIC COAST FISHERIES

## ABEL C. GALLETTI

There are certain special individuals in the fishing industry who have made extremely significant contributions toward promoting marine fisheries in our respective states. The Commission believes that these people, who are seldom recognized for their valuable efforts, deserve a formal expression of gratitude for the many hours of time and energy which they have devoted to the industry.

As a result, the Commission this year established an award to be presented to one of these individuals. The award will be presented each year at the annual meeting. Henceforth, the host state for the annual meeting each year will select one individual for special recognition by the Commission. As host state this year for the Commission's fortieth annual meeting, California was privileged to name the very first recipient of the PMFC Annual Award. The following is the introduction by the Commission Chairman, Gerald Felando of California of the 1987 recipient of this award:

"California has many outstanding leaders in the fishing community. There is one man, however, who stands especially tall. He is a man who has made an outstanding contribution to the support and promotion of the conservation, development and management of Pacific marine fisheries. Born in Sicily and the son of a commercial fisherman, Abel C. Galletti is the owner of Galletti Brothers Foods, a highly successful seafood importing, wholesaling and distributing business here in southern California. In January, 1988, he will have completed two six-year terms on the California Fish and Game Commission. In addition to his tenure on the Commission, he has served on the Pacific Fishery Management Council and the California Wildlife Conservation Board.

He is a man devoted to his family, church and the community he loves —San Pedro, California. He is a man who has done so much for fisheries, who understands and respects the views of California's fishing industry. He has unselfishly given many, many years to ensure the survival of this proud and determined industry. As Chairman of the Pacific Marine Fisheries Commission, I am proud to present our first annual award to a man of distinction and a foremost leader of California's fishing industry—**Abel C. Galletti.**"



Commission Chairman Gerald Felando (left) presents the PMFC Annual Award for outstanding contribution to Pacific coast fisheries at the Commission's Fortieth Annual Meeting in San Pedro, California. The first of this annual award, which will be given by the Commission each year at its Annual Meeting, was presented to Abel C. Galletti. Representing Mr. Galletti at the award banquet was his son and daughter-in-law, Mr. & Mrs. Sam Galletti. Accepting the award (right) is Mr. Sam Galletti who holds the PMFC plaque presented by the Commission. Chairman Felando is also presenting a resolution honoring Mr. Abel Galletti from the California State Legislature.

## ADMINISTRATIVE REPORTS AND ACTIONS

### COMMISSION ACTIONS

*Spring Commissioners Meeting—February 20, 1987*

The Commissioners met in Portland, Oregon on February 20, 1987 and took the following actions:

1. Selected five candidates for Executive Director to be interviewed on February 27, 1987.
2. Adopted a new annual meeting process as follows:
  - All Commissioners are encouraged to attend the annual and in-State meetings and any special interim meetings necessary to provide guidance to the Executive Director. The latter meetings may be held via teleconference to save money.
  - At least one Advisor and one State staff person are authorized to attend the meeting at PMFC expense. Additional Advisors and/or State staff members may be authorized to attend at PMFC expense if the agenda warrants.
  - For each of the five member States, two in-State meetings of Commissioners, Advisors and State staff should be held each year at PMFC expense.
3. Adopted a new travel expense policy which is based on Federal hotel and meal limits established for high cost cities.
4. Voted to take a position in favor of prohibiting Tributyltin-based paints and directed that this issue be placed on the agenda of each in-State meeting.

5. The following issues for 1987 were discussed:

- The Commission was briefed on the status of the Marine Mammal issue. A technical committee has been formed and met for the first time on February 18-19. An issue paper with specific recommendations for changes to the Marine Mammal Protection Act will be ready by summer, 1987 for distribution to the PMFC family and the public. The Commission will address their final position on this issue at the 1987 Annual meeting.
- A coastwide proposal for data collection and management planning for the thresher shark fishery has been submitted to NMFS. A response from NMFS is pending. The Executive Director was asked to approach Congress if necessary to obtain funding.
- The Commissioners asked that each state make appointments to the Marine Debris committee now that the new Advisors have been appointed for 1987-88. Each State delegation should consider appointing a representative on these two committees at the in-State meeting.
- The Commission asked the Executive Director to continue to lobby for adequate funding to the Saltonstall-Kennedy grant program to aid industry efforts to increase consumption of domestic seafood products.
- The Commission requested the PMFC Insurance committee to explore insurance pools and other means of ad-

addressing the insurance problem aside from Federal legislation to limit liability. The Committee should report to the Commission as soon as possible on its findings.

*February 27, 1987 Meeting* The Commissioners met on February 27, 1987 and interviewed the five finalists for the Executive Director position. Mr. Guy Thornburgh of Alaska Department of Fish and Game was selected as the new director. He will report to duties at the Commission on or about April 1, 1987.

*1987 Annual Meeting, October 27-28, 1987* The Commission took the following actions at the Annual Meeting in San Pedro, California:

1. Adopted the proposed four amendments to the Marine Mammal Protection Act as presented by the Marine Mammal Technical Committee in their report. The Commission will lobby for these amendments during the reauthorization process for the Act in 1988.
2. Approved submitting proposals to develop a Thresher Shark Management Plan and a Southeast Alaska Rockfish Management Plan with the Commission's Interjurisdictional Fisheries Act funds in 1988-89.
3. Reaffirmed its opposition to a federal marine fishing license.
4. Directed the Marine Debris and Marine Mammal Committees to continue their work into 1988.

## TREASURER'S REPORT

The Treasurer, Gerald L. Fisher, presented the Report of Receipts and Disbursements for the period September 1, 1986 to September 1, 1987 at the annual meeting in San Pedro, California. The complete report can be found in Appendix I (Financial, Audit, and Budget Reports). Receipts were: 1) Member states' contributions of \$117,200; 2) External contract payments of \$2,433,898; and 3) Interest income and refunds of \$10,987. Disbursements were: 1) PMFC direct of \$52,604; 2) PMFC indirect of \$232,467; and 3) External contracts' direct of \$2,998,144. The FY87-88 Budget shows Commission expenditures of \$414,426 with an additional \$200,000 going into a new revolving fund. A total of \$18,865 will be carried forward to balance the FY88-89 budget. The audit report for the fiscal year ending June 30, 1987 found the financial records of the Commission to be in satisfactory condition.

## FEDERAL APPROPRIATIONS

The Executive Director, along with his colleagues from the Gulf and Atlantic Commissions, lobbies for maintenance of Federal funding for fishery programs of importance to the states and the commercial and recreational fishing industries. Each year in this Administration the President's budget has recommended deep cuts (40% for FY89) in the National Marine Fisheries Service (NMFS) budget. Fortunately, the Congress again restored most of these cuts for FY88. This includes such programs as the Anadromous Fish Grants, Interjurisdictional Fisheries Grants, Pacific Salmon Treaty, Regional Fisheries Management Councils, Columbia River Hatcheries, Habitat Conservation and S-K Grants.

Tied to the Interjurisdictional Fisheries Act for FY88 was \$350,000 to split equally between the three Interstate Marine Fisheries Commissions to develop plans for interstate fisheries. PMFC will spend its share to prepare a fishery management plan for thresher shark off California, Oregon and Washington and another for southeast Alaska rockfish. This grant will likely be renewed for FY89 for a similar amount.

PMFC sponsored a FY88 NMFS budget initiative entitled "PacFIN" for \$3.0 million. This project was intended to restore and enhance monies for basic fisheries data collection required for effective implementation of management plans developed by the Pacific, North Pacific and Western

Pacific Fishery Management Councils. This proposal was included in the President's FY88 budget submission to Congress but was unfortunately tied to the Administration's proposed user fee. Congress did not act on user fee legislation in FY88 and PacFIN was not funded. A similar initiative will be pursued in FY89.

## FISHERY DATA PROJECTS AND CONTRACT SERVICES

The major activity of the Commission in recent years in terms of dollars and Staff time expended has been coordination of regional fishery data projects and provision of contract services for Federal funds to the States. The Commission also provides contract services for other organizations. Contract services include preparing proposals and reports, providing fiscal control and accountability, and hiring of project personnel. In the case of certain regional data programs, PMFC actively participates in the supervision and implementation of the project. These regional PMFC projects and contract services are:

### 1. Regional PMFC Data Projects

PMFC has been a logical and convenient organization to coordinate and supervise certain regional or coastwide data collection, analysis and reporting projects. PMFC does this not only as a service to its member States, but also to Indian tribes, Federal agencies and Canada. PMFC has primary responsibility for two major data efforts:

- Salmon and Steelhead Tag Coordination, and
- Pacific Fishery Information Network (PacFIN)

*Tag Coordination.* Millions of coded-wire tags (CWT) are inserted in juvenile salmon and steelhead each year along the entire Pacific Coast of North America in order to provide estimates of contribution, migration and other data critically needed in the management process. Significant effort by the States is required to recover and process the approximately 250,000 tags retrieved from the harvest and escapement. Since 1977, PMFC has managed the Regional Mark Processing Center, which maintains a computerized data base of all tags released and recovered by all public, private and tribal entities from Alaska, British Columbia, Washington, Oregon, Idaho and California. These data are made available to fishery managers and researchers throughout the area.

The U.S.-Canada Data Sharing Committee of the Pacific Salmon Commission established an ad hoc Working Group on Mark Recovery Databases in 1986. The Regional Mark Processing Center Data Manager was a member of the working group. The charge of the Working Group was to develop recommendations for a common Coded-Wire Tag database that is on-line, readily accessible and will meet the informational needs of the Pacific Salmon Commission. The Working Group met several times during 1987 to develop the framework for a new Coded-Wire Tag database that could meet the needs of the Pacific Salmon Commission. The PMFC Regional Mark Processing Center's database was used as a starting point for the Working Group's discussions. In November, the U.S. Commissioners of the Pacific Salmon Commission selected the Pacific Marine Fisheries Commission's Mark Processing Center as the single United States site for exchange of U.S. tag data with that of Canada.

The PMFC Mark Committee also convened in September, 1987 and directed PMFC to enhance the operations of the Mark Center in order to improve accessibility and timeliness of regional CWT data. The approved enhancements included the addition of a new staff programmer, the purchase of a MicroVAX mini-computer, a micro-computer (PC), and several high-speed modems (9,600-10,200 baud rate), plus the development of menu driven software that would allow end users the flexibility of specifying the type of CWT data desired.

Financial assistance was sought for this effort from Alaska and California Departments of Fish and Game, Washington Department of Fisheries, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Columbia River Intertribal Fish Commission, Northwest Indian Fisheries Commission, Bonneville Power Administration and the U.S. Army Corps of Engineers. A total of \$189,000 was committed for the upgrades which commenced in early 1988.

Given the financial support, PMFC hired James R. Longwill on a full-time basis in January, 1988 as a computer specialist. Jim's work will be primarily in the area of data management and programming new applications. Priority in this regard will be given to Pacific Salmon Commission informational needs. Jim recently graduated with high marks from the University of Washington where he specialized in mathematics and computer sciences.

Bonneville Power Administration's funding support provided for the purchase of a MicroVAX II (DEC) system which will run both VMS and PICK operating systems. The new system is many times more powerful than PMFC's present outgrown ADDS minicomputer and will have 16 Mb RAM, one gigabyte of disk memory, 12 ports, two tape drives (1600 and 6400 bpi density), and a 2.3 gigabyte 8mm tape backup drive. Delivery of all components was completed in mid April, 1988.

In addition, the Mark Center has installed a Printonik printer (600 lpm), a Compaq 386 micro-computer, and several 19,200 baud high-speed modems made by Telebit (TrailBlazer Plus model). The Compaq PC will be used to support data exchange on floppy disks (1.2 Mb and 360K) and in MS-DOS format.

Lastly, the growth of the Mark Center's operations necessitated a move to new quarters across the street from the PMFC headquarters office. The new address is 2075 S.W. First Avenue, Suite 1-C. Mail, however, should continue to be addressed to the headquarters office at 2000 S.W. First Avenue, Suite 170, Portland, Oregon 97201-5346. The new telephone number for the Regional Mark Processing Center is (503) 294-7474.

**Pacific Fishery Information Network (PacFIN):** The Pacific Fishery Information Network is a coastwide data system which provides timely marine fish landings data to State, Council, and Federal fishery managers and the fishing industry. The National Marine Fisheries Service (NMFS) provides funds to PMFC, and in turn PMFC funds and coordinates the operations of the Pacific Coast Fisheries Data Committee, employs the PacFIN Data Manager and provides contracts to the States to improve the timeliness and quality of fishery data.

Although funding in 1987 was significantly reduced, this regionally fishery data improvement program continued to provide monthly Groundfish catch statistics and reports for use by the Pacific and North Pacific Councils in monitoring and managing the fisheries. The PacFIN operation also:

- completed the historical salmon database for Oregon and Washington from 1981-1987. Oregon and Washington are providing regular monthly updates to this database;
- enhanced the Quota Species Monitoring database which produces the Pacific Council's best estimate report for groundfish;
- continued work on the merger of the PMFC Groundfish Data Series into the PacFIN system; and
- filled requests for many special reports from the fishing industry and the fishery agencies.

## 2. Contract Services for Federal Funds to the States

The Commission provides contract services for numerous State fishery data projects which are funded by the Federal Government. The National Marine Fisheries Service (NMFS) is the principal Federal agency involved, and NMFS

uses PMFC as the primary contractor because of the Commission's proven fiscal ability and low overhead rate (14%). PMFC is able to hire technical personnel to work alongside existing State employees and thereby enhance the State data programs as necessary to support regional fishery management. The low PMFC overhead rate allows the money to go further toward the purpose for which it is intended. These are primary advantages of PMFC.

## 3. Contract Services for Other Organizations

In addition to the above, PMFC provides contract services for certain non-State and non-Federal entities. In a sense, the Commission serves as a "parent" organization for these entities, which do not have the necessary fiscal expertise and staff to handle payroll, procurement, accounting, travel expense and related functions. PMFC retains no programmatic or policy control over the project; it provides administrative support only. The entities involved in 1987 were:

- **Columbia Basin Fish and Wildlife Authority** The Authority was created to coordinate the activities of the member agencies in the Columbia River area. State, Federal and Tribal member agencies contribute funds along with the Northwest Power Planning Council to PMFC for employment of an Executive Secretary and for operations. PMFC provides contract services to the authority.
- **Fish Passage Center** With funds from Bonneville Power Administration, PMFC hires most of the staff of the Fish Passage Center, which is charged with monitoring and enhancing anadromous fish passage in the Columbia River system.

### *Columbia River System and Subbasin Planning Contract*

These funds come through the Columbia Basin Fish and Wildlife Authority, which represents fish and wildlife agencies from four northwest states, two federal fish and wildlife agencies and eleven Indian tribes. These agencies and tribes have been given responsibility for carrying out the system planning effort, which will determine the potential of 31 individual watersheds to contribute to the Northwest Power Planning Council's goal of doubling salmon and steelhead runs in the Columbia River Basin. PMFC is providing the contract management and coordination of this program.

## 4. Age Determination of Groundfish Species

Assessment of groundfish populations requires estimation of the age composition of the population, and this is normally accomplished by enumerating growth rings on a sample of ear structures called otoliths. Each year the Commission provides partial support for two groundfish age readers in the State of Washington who assist the other Pacific States by reading otoliths from those States on request. About \$13,000 was provided to the Washington Department of Fisheries in 1987 for this program.

## 5. Logbooks

PMFC has actively contributed to the development of standard, coastwide formats for logbooks used by vessel captains in the domestic and joint venture trawl fisheries. Trawlers landing shoreside are required by State law in Washington, Oregon and California to fill out logbooks. Until recently the States had three different formats. The single format facilitates the collection of standard data from each State and minimized the impact on highly mobile trawlers landing in more than one State. PMFC printed and distributed these logbooks to initiate the program, and now the States have taken over this responsibility.

The logbook program for joint venture trawlers fishing off Alaska and off Washington, Oregon and California is a voluntary program. PMFC prints and distributes the logbooks

to the fleet with funds supplied by NMFS and the North Pacific Fishery Management Council.

## 6. External Activities

The Executive Director participates in various external activities throughout the year. These include membership on various Councils and Committees as described below.

### Regional Councils

The Magnuson Act stipulates that the Executive Director of PMFC shall serve as a non-voting member of the Pacific and North Pacific Fishery Management Councils. The Commission receives \$15,000 a year from each Council to support participation on these forums. During 1987, the Director served as Chairman of the Pacific Council's Legislative Committee, Chairman of the Groundfish Select Group and member of the Budget Committee. The PMFC representatives are very active in Council affairs and devote substantial time to this important process.

### MAFAC

The Executive Directors of the Pacific, Atlantic and Gulf Commissions are consultants to the Marine Fisheries Advisory Committee (MAFAC). MAFAC meets 3-4 times per year to provide advice to the Secretary of Commerce and the NOAA Administrator on all major fishery policy issues in the nation. PMFC's participation is especially important since there are no representatives from the Pacific States Agencies on this Committee.

### U.S.-Canada Groundfish

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

### IAFWA

The Executive Director represents the Commission on several committees of the International Association of Fish and Wildlife Agencies. PMFC has been active in this Association, and the Association has relied on the three Commissions for input on marine fishery issues and for preparing testimony on marine fishery budget matters.

## 1987 PUBLICATIONS

The Commission published 5 papers during 1987. Copies may be obtained by writing the Commission headquarters in Portland at 2000 S.W. First Ave., Suite 170, Portland, Oregon 97201. The five publications were as follows:

1. *"Report on Proposed Amendments to the Marine Mammal Protection Act"* was printed in final form on December 1, 1987. It was prepared by the Commission's Ad Hoc Technical Committee on Marine Mammals.
2. *"The West Coast Seafood Industry: Its Importance to the West Coast Economy in 1986"* was prepared for the Commission by Drs. Hans Radtke and William Jensen. This report reviews the West Coast commercial fishery landings in 1986 and the revenues derived from these landings. The total personal income resulting from the West Coast fishing industry is estimated at \$3.5 billion. The report tabulates the contribution of this income to the various segments of the economy.
3. *"The 1987 Mark List"* contains a record of all groups of salmonids that had been fin-marked prior to their release.

4. *"Releases of Coded-Wire Tagged Salmon and Steelhead from Pacific Coast Streams Through 1986"* was published in March, 1987. It is the fourteenth in a series of reports tabulating all the various codes used by federal, state, Indian and private agencies for salmonid coded-wire tags in the Pacific Coast States. The report enumerates all previously used codes, necessary corrections and all the new codes used in 1986. A report enumerating the codes released through 1987 will be published about May 1988.

5. *"The 39th Annual Report of the Pacific Marine Fisheries Commission"* for the year 1986 was published in April, 1987.

## 1988 ANNUAL MEETING

The 1988 Annual Meeting of the Commission will be held in Coeur d'Alene, Idaho on October 25-26, 1988 at the Coeur d'Alene Resort on the lake.

The Commission elected Mr. Jerry Conley, Director, Idaho Department of Fish and Game as its 1988 Chairman. Mr. Conley will serve as chairman for 1988 and preside over the annual meeting in Coeur d'Alene in October.

## PERSONNEL

### COMMISSIONERS

The following were Commissioners during all or part of 1987: **Alaska**

Don Collinsworth, Juneau  
Honorable Richard Eliason, Sitka  
Pete Isleib, Juneau

### California

Honorable Gerald Felando, Sacramento —Chairman  
Bob Fletcher, Sacramento  
Donald Hansen, Dana Point

### Idaho

Jerry Conley, Boise  
Honorable Ron Beitelspacher, Grangeville  
Fred Christensen, Nampa

### Oregon

Harry Wagner, Portland  
Honorable Paul Hanneman, Cloverdale  
Vacant

### Washington

Joseph Blum, Olympia  
Honorable Brad Owen, Shelton  
Robert Alverson, Seattle

### 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 1987: **Alaska**

Bob Blake, Cordova  
John Burns, Fairbanks  
John Garner, Juneau  
Paul Gronholdt, Sand Point  
Jack Lechner, Kodiak  
John Sund, Juneau  
Bruce Wallace, Ketchikan, State Chairman

### California

James Bunn, San Pedro  
William Nott, Long Beach  
Harold Olsen, Torrance  
Charles Platt, Fort Bragg  
Robert Ross, Sacramento  
Roger Thomas, Sausalito  
Tony West, San Pedro, State Chairman

**Idaho**

Vacant  
 Vacant  
 Vacant

**Oregon**

Joe Easley, Astoria  
 Allan Fleming, Garbaldi  
 Herb Goblirsch, Newport  
 John Marincovich, Astoria  
 Don Christenson, Newport  
 Jay Rasmussen, Newport  
 Frank Warrens, Portland, State Chairman

**Washington**

Steve Watrus, Vancouver  
 Donald Bevan, Seattle  
 Rudy Petersen, Seattle  
 Richard Powell, Longview  
 Art Statt, Seattle  
 Terry Wright, Olympia, State Chairman  
 Rob Zuanich, Seattle

**COORDINATORS**

PMFC Coordinators facilitate all aspects of PMFC programs within their State. The following were PMFC Coordinators in each State in 1986: **Alaska**

Fred, Gaffney, Alaska Department of Fish and Game

**California**

Melvyn Odemar, California Department of Fish and Game

**Idaho**

Dave Hanson, Idaho Department of Fish and Game

**Oregon**

Kirk Beiningen, Oregon Department of Fish and Wildlife

**Washington**

Robert Turner, Washington Department of Fisheries

**PMFC STAFF**

The headquarters staff was composed of the following personnel during 1987:

Guy N. Thornburgh—Executive Director (Effective 4/2/87)  
 Lawrence D. Six—Executive Director (Resigned 4/1/87)

Russell G. Porter—Assistant to Executive Director

Kenneth Johnson—Manager, Regional Mark

Processing Center Will Daspit—Data

Manager, Pacific Fisheries

Information Network (PacFIN) —Seattle Pam

Kahut—Fiscal/Contract Specialist Mary Washkoske

— Fiscal/Administrative Assistant Gloria Smith —

System Planning Contract Specialist Erica Jensen — Secretary

**Part-time Staff:**

Jerry Fisher—Treasurer

John P. Harville —External Affairs Consultant

Leon A. Verhoeven —Consultant

Debbie Geiger—PACFIN Computer Aide

## APPENDIX I-FINANCIAL, AUDIT AND BUDGET REPORTS

### 1987 Financial Statement

The Commission receives its financial support from contributions from its member states 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. The ability to continue level funding for state contributions is a result of increasing external contracts, indirect cost charges and lower than anticipated annual expenditures. The external contracts are not discretionary funds but are allocated for a specific purpose. The annual state contributions are computed by estimating total operating expenses for the Commission less the anticipated revenues from indirect cost charges and interest income on temporarily inactive Commission funds.

#### TREASURER'S REPORT OF RECEIPTS AND EXPENDITURES

September 1, 1986 to September 1, 1987

CASH BALANCE September 1, 1986                      \$ 220,398

**RECEIPTS**

Contributions by Member States:

FY1987: Oregon	\$ 22,100
California	25,300
Alaska	20,000
FY1988: Idaho	5,300
Oregon	22,000
Washington	<u>22,500</u> 117,200

**External Contracts:**

National Marine Fisheries Service	934,331	
Bonneville Power Administration	791,510	
Washington Department of Fisheries	459,303	
Oregon Department of Fish & Wildlife	67,146	
U.S. Fish & Wildlife Service	4,020	
Southern California Edison	22,561	
North Pacific Fishery Management Council	38,014	
Pacific Fishery Management Council	31,364	
Columbia Basin Fish & Wildlife Authority	68,609	
Idaho Dept. of Fish & Game	4,020	
California Dept. of Fish & Game	13,020	<u>2,433,898</u>
Other:		
Interest	\$ 9,591	
Refunds	1,396	10,987
<b>Total Receipts</b>		<u>\$2,562,085</u>

**EXPENDITURES:**

PMFC Direct Expenses	\$ 52,604	
PMFC Indirect Expenses	232,467	<u>285,071</u>

External Contracts		
Direct Costs:		
National Marine Fisheries Service—		
Admin. Support of State-Federal Programs	\$ 11,515	
WC Fishery Data Collection & Analysis	490,444	
SSCEA Enhancement Coordination	25,338	
Regional Mark Processing Center	75,476	
Albacore Logbook & Port Sampling	41,840	
Marine Recreational Fisheries Survey	251,256	
Col. R. Fish Marking for Smolt Monitoring	29,592	925,461
Washington Dept. of Fisheries:		
Freshwater Trapping & Data Summarization	\$ 92,346	
Coastal Stock Assessment	51,849	
Coho Tagging & Trapping	95,797	
Ocean Salmon Sampling & Data Summarization	104,531	
Processing Salmon Electrophoretic Sampling	63,168	407,691
Bonneville Power Administration (BPA):		
Water Budget Center	\$493,710	
Coded-Wire Tag Recovery	508,363	1,002,073
California Dept. Fish & Game Recreational Habitat Studies		49,986
Oregon Dept. of Fish & Wildlife:		
Council Liaison Travel, Acquisition of Computer Equipment for Pac. Salmon Treaty Implementation and Marine Resources Programs		82,248
Pacific & North Pacific Councils Support for PMFC's Participation		36,219
Southern California Edison Co. Pendleton Artificial Reef Project		17,448
U.S. Fish & Wildlife Service—Marine Sport-fisheries Information		47,371
Pacific Northwest Power Planning Council—Col. R. System & Subbasin Planning		54,717
NMFS, USFWS, 5 State Fisheries Agencies & 13 Indian Tribes: Col. Basin Fish & Wildlife Authority Support		17,448
		<u>89,859</u>
Total Expenditures		<u>3,015,592</u>

Cash Balance	
September 1, 1987	\$ (233,109)*
Add: Receivables from External Contracts	\$ 600,954
Add: FY88 Contributions from Alaska & Calif.	\$ <u>56,200</u>
PMFC's Current Assets @ September 1, 1987	\$ <u>424,045</u>

\*PMFC checks written to contractors in anticipation of receiving checks from BPA for \$282,000 which was lost in the mail in August with replacement check issued in early September.

## 1987 AUDIT REPORT

CAHALL, NOLAN & CO. Certified Public Accountants 10700 SWBeaverton Hwy., Suite 500 Beaverton, Oregon 97005

To Board of Commissioners  
Pacific Marine Fisheries Commission  
Portland, Oregon

We have examined the statement of assets and liabilities arising from cash transactions of Pacific Marine Fisheries Commission as of June 30, 1987, and the related statements of revenues collected and expenditures, changes in cash position and changes in fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards and the standards for financial and compliance audits contained in the Standards for Audit of Governmental Organizations, Programs, Activities, and Functions issued by the U.S. General Accounting Office, and accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in Note 5, the Commission's policy is to prepare its financial statements on the basis of cash receipts and disbursements, with the exception of the accrual of expenses in the General Fund. Consequently, certain revenues and related assets are recognized when received rather than when earned in all funds, and certain expenses are recognized when paid rather than when the obligation is incurred in the Special Projects Funds. Accordingly, the accompanying financial statements are not intended to present financial position and results of operations in conformity with generally accepted accounting principles.

In our opinion, the financial statements referred to above present fairly the assets and liabilities arising from the cash transactions of the Pacific Marine Fisheries Commission as of June 30, 1987, and the revenues collected and expenditures during the year then ended on the basis of accounting described in Note 5, which basis has been applied in a manner consistent with that of the preceding year.

Cahall, Nolan & Co.  
October 30, 1987  
Beaverton, Oregon

**BALANCE SHEET JUNE 30,1987**

	General Fund	Property Fund	Unemploy- ment Fund		General Fund	Property Fund	Unemploy- ment Fund
<b>CURRENT ASSETS</b>				<b>LIABILITIES</b>			
Cash on hand and in banks	\$ 33,662		\$11,472	Accrued liabilities	\$ 16,502		\$ 373
Receivables:				Reserve for accrued leave	5,651		
Due from Washington Department of				Unexpended grant funds:			
Fisheries—Coho Trapping	673			National Oceanic and			
–Freshwater Trapping	6,774			Atmospheric Administration			
–Coho Trapping and Tagging	18,845			–Contract #86-ABH-00004	221		
–Electrophoretic Sampling	7,252			–Contract #84-ABC-00211	121		
–Coastal Stock Assessment	23,589			–Contract #86-ABD-00105	817		
–Ocean Salmon Sampling	22,205			–Contract #86-ABH-00023	10,963		
–Electrophoretic Sampling	118			Washington Department			
–Genetic Stock Identification	11,544			of Fisheries			
Due from National Oceanic and				–Bogachiel River Fry Study	11		
Atmospheric Administration				Bonneville Power			
–Contract #87-ABH-00010	945			Administration			
–Contract #86-ABH-00015	342			–Coded Wire Tag	2,951		
–Contract #85-ABC-00115	20,721			North Pacific Fishery			
–Contract #85-ABH-00042	1,796			Management Council			
–Contract #87-ABH-00002	21,410			–Support of PacFIN	19,751		
–Contract #83-ABD-00017	141			Total liabilities	56,988		
–Contract #84-ABH-00034	20						
–Contract #85-ABH-00008	565			<b>FUND BALANCES</b>	281,423	435,197	11,099
Due from Oregon Department				Total liabilities and			
of Fish and Wildlife				fund balances	<u>\$338,411</u>	<u>\$435,197</u>	<u>\$11,472</u>
–Council Support	1,470						
–Pacific Salmon Treaty	9,794						
–Marine Recreational Survey	11,657						
Due from Bonneville Power							
Administration							
–Smolt Monitoring	624						
–Water Budget Manager	56,980						
Due from Pacific Fishery							
Management Council/North							
Pacific Fishery Management							
Council							
–Regional Council							
Support	6,546						
Due from U.S. Fish and Wildlife							
Service							
–Interstate Fishery							
Management	36,887						
Due from National Oceanic and							
Atmospheric Administration/ Pacific Marine Fisheries							
Commission							
–Fish Passage Center	4,424						
Due from North Pacific Fishery							
Management Council							
–Data Coordination	112						
Due from California Depart- ment of Fish and Game							
–Fish Habitat Studies	34,088						
Due from Southern California							
Edison	5,127						
Prepaid expenses	100						
<b>FIXED ASSETS</b>							
Investment in furniture and equipment		\$435,197					
Total assets	<u>\$338,411</u>	<u>\$435,197</u>	<u>\$11,472</u>				

## 1987 BUDGET REPORTS

EXPENDITURES	Total Actual Expenditures for Fiscal Year Ending 6/30/87	Approved Budget for 1987-88 Fiscal Year	Proposed Budget for 1988-89 Fiscal Year	Estimated External Contract Expenditures For The Period July 1, 1987 - June 30, 1988			
				Expenditures (Direct Costs)	Indirect Cost Chgs	Total	
Salaries & Wages	\$113,155	\$121,044	\$131,019	Admin. Support of SFFMP	\$ 16,000	\$ 2,000	\$ 18,000
Fringe Benefits	27,827	33,057	35,557	Albacore Logbook & Port Sampling	43,566	5,445	49,011
General Operation & Maintenance	94,235	93,700	98,700	Council Support	26,300	3,285	29,585
Annual Meeting	18,412	28,775	21,011	ODFW Council Support	12,000	1,500	13,500
Pre-Mtg In-State	2,706	12,250	12,250	Washington Salmon Sampling	106,895	13,361	120,256
Issue Committee Meetings	3,097	7,500	7,500	Regional Mark Processing Center	90,225	9,841	100,066
Publications	4,185	5,300	4,200	W/C Data Collection & Analysis	332,100	10,888	342,988
Cooperative Research				Columbia Basin Fish & Wildlife	96,726	12,090	108,816
Otolith Reader-25% Match	12,635	14,500	14,500	BPA-Smolt Coordination (FPC)	401,397	43,100	444,497
Mark Center-33% Match	28,817	30,300	33,400	Fish Marking Coordinator	18,126	2,266	20,392
Marine Mammal	0	6,000	0	BPA-Columbia River Coded Wire Tag	581,446	16,566	598,012
RMPC Enhancement	0	60,000	0	BPA-Technical Work Group Coord.	144,783	8,486	153,269
Miscellaneous	0	0	5,000	NWPPC-Columbia Basin System	1,573,178	12,417	1,585,595
Capital Outlay	10,077	2,000	2,000	Freshwater Trapping & Data Summ.	109,032	13,329	122,361
TOTAL	\$315,146	\$414,426	\$365,137	Coastal Freshwater Stock Assmt.	35,263	4,408	39,671
				ODFW-Pacific Salmon Treaty	74,034	9,255	83,289
				Electrophoretic Sampling	60,932	7,617	68,549
				Coho Trapping & Tagging	83,590	10,449	94,039
				CA-Recreational Habitat Study	133,162	16,645	149,807
				CA-Sportfish Sampling Studies	241,688	27,211	268,899
				ODFW Fisheries Research & Data Coll.	37,738	2,912	40,650
				Cooperative Interstate Fishery Mgmt.	54,080	6,760	60,840
				TOTAL	\$4,272,261	\$239,831	\$4,512,092
REVENUE							
Interest Income	\$ 10,022	\$ 5,000	\$ 5,000				
Ext. Contracts- Indirect Costs	219,139	239,831	235,274				
State Contributions							
Alaska	20,000	31,000	31,000				
California	25,300	25,200	25,200				
Idaho	5,300	5,300	5,300				
Oregon	22,100	22,000	22,000				
State Contribution Subtotal	\$ 95,400	\$106,000	\$106,000				
Total Revenue	\$324,561	\$350,831	\$346,274				
Balance Avail./Previous Year	273,043	282,458	18,863				
Total Available	\$597,604	\$633,289	\$365,137				
Less Expenditures	315,146	414,426	365,137				
Revolving Fund Set Aside	\$ 0	\$200,000	\$ 0				
Balance-Carried Forward to Next Year	\$282,458	\$ 18,863	\$ 0				



# APPENDIX II-PACIFIC COAST FISHERY REVIEW REPORTS

## ALBACORE FISHERY IN 1987

Commercial albacore landings were very low in 1987, totaling only 6,524,398 pounds, 17% of the 25-year average. Most of this can be attributed to general lack of effort. Salmon fishing proved to be very lucrative in 1987, and many fishermen did not switch gear to fish albacore. A commercial fishery never developed in southern California waters. Instead, the bulk of the fish were caught off of the Pacific Northwest, with Oregon and Washington representing 35% and 18% of the year's total, respectively.

Price agreements between the Western Fishboat Owners Association and Pan Pacific began at \$1400 per ton for fish over nine pounds and \$950 for those nine pounds and under, but increased to \$1450 and \$975 by the end of September. No trucking fee was charged for boats unloading in northern ports, but in late September the cannery began offering \$1500 per ton for quality fish delivered to Terminal Island.

### California

The California albacore season began slowly in July with several landings from the Midway Islands and small, occasional catches 80 to 250 miles off central California. In late July offshore vessels worked 1700 miles off northern California, catching up to 400 fish per day. July landings totaled 34,935 pounds.

During August, offshore vessels worked shoreward from 1600 to 900 miles off northern California, with scores generally between 10 and 200 fish per day, averaging 12 to 18 pounds. Most of these vessels moved to Oregon waters towards the end of the month. Catches off central California improved during the month, and ranged from 10 to 100 fish per day at the Guide and Pioneer seamounts with a few reports as high as 300; fish weighed primarily between 15 and 30 pounds. Long range sport boats had good success for most of the month outside the San Juan seamount and 1908 spot, catching as many as 500 25-pound fish per boat. Few commercial boats worked the area, most fishing from central California north. Landings for the month are estimated at 632,983 pounds.

In early September, slow to moderate activity occurred from Morro Bay to San Francisco, especially at Guide and Pioneer seamounts. Twelve to 35-pound fish were landed from 20 to 100 miles offshore. Moderate activity also occurred 50 to 150 miles off northern California early in the month with catches of 10 to 200 fish per day. Very poor weather and lack of availability slowed fishing considerably towards the end of the month. Sport fishermen brought in very large albacore from south of San Diego (25 to 60 pounds), but very little commercial effort occurred in southern California this year. Landings for September are estimated at 1,784,970 pounds.

In October, drift gill net vessels landed up to a ton per trip of very large albacore from off Morro Bay, but very few jig or bait boats remained in the area. Other landings were primarily from vessels coming south from Oregon waters, unloading at home ports or at the Terminal Island cannery. October landings totalled 566,715 pounds.

California landings totalled 3,089,698 pounds, only 15% of the previous 25-year average. Reduced effort can be attributed to poor fish availability, an excellent salmon season, and high prices at buying stations in Oregon and Washington.

### Oregon

The 1987 Oregon fishery started during the last few days of July when catches up to 200 fish per day were reported near the Jackson seamount off southern Oregon. Only 8,967 pounds were landed in July.

Fishing in August was good to excellent, with major fishing areas developing off Newport and the Columbia River, from 40 to 200 miles offshore. Catches ranged from less than 40 to over 400 fish per day. Landings totalled 684,305 pounds in August.

September fishing was good to excellent for most of the month but became spotty as the month ended. Catches ranged up to 700 fish per day for several days. Success off the Columbia River declined as the month progressed and better fishing off the Haceta Bank-Newport area drew most boats south. Catches off Newport remained very good all month and ranged from 100 to 700 fish per day. Landings were 1,382,795 pounds in September.

October saw many very small fish which caused most boats to quit or go south to California. Fishing off Oregon had ceased by mid-month. October landings were 201,262 pounds.

There was one landing in November of 1,471 pounds. The total Oregon landings for 1987 were 2,278,800 pounds.

### Washington

Landings of albacore in Washington's ports began in early August. Fishing occurred mainly in the waters off Oregon and north to the Columbia River. Later in the season, albacore moved into nearshore waters and north towards Willapa Bay and Grays Harbor. Fish were landed as near as 30 miles from shore. This resulted in an increase in the number of vessel trips made, up 41% from last year. Total landings for the year yielded 1,155,900 pounds, 34% below last year's total.

Total August landings were 414,000 pounds. Landings were low during the first week, steadily increasing after that. Albacore were caught primarily from an area 80 to 150 miles off the Oregon coast. By late August and early September, effort had shifted to the Columbia River and northward. A few landings were documented as far north as 47 N Latitude. Several swordfish were also caught in these northern areas. September landings totalled 675,236 pounds. By the end of September the average tuna weight had dropped from about 15 pounds to 11-12 pounds. This was partly the result of many tuna (8 to 10 pounds) moving into the fishing grounds. Many vessels were no longer fishing by this time. October landings dropped to 66,664 pounds.

The abundance of albacore off of Washington's coast and a good market price contributed to the increased effort this year. Many of the skippers who traditionally sold their catches from the vessel opted to either sell a portion or all of their landings to processing companies. This allowed them to make more frequent trips.

The presence of albacore in nearshore waters generated increased effort in Washington's recreational albacore charter boat fishery. During the last several years this fishery has been at low or non-existent levels. More than 30 sport and charter boats from the ports of Ilwaco and Westport made regular and successful excursions for albacore during the months of August and September. Preliminary catch estimate is 3,742 albacore.

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### Other Contributors

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

Year	California	Oregon	Washington	Total
1960	35,113	4,563	526	40,202
61	29,123	3,250	456	32,829
62	36,622	8,949	365	45,936
63	48,860	11,400	527	60,787
64	42,551	4,452	1,055	48,058
65	23,218	12,122	2,048	37,388
66	18,189	18,041	1,101	37,331
67	17,858	29,243	1,240	48,341
68	15,077	37,752	3,050	55,879
69	14,722	29,828	1,240	45,790
1970	29,932	21,782	4,390	56,104
71	36,117	8,420	5,250	49,787
72	21,001	23,056	16,238	60,295
73	8,641	16,350	14,446	39,437
74	11,806	25,225	17,983	55,014
75	15,413	17,166	16,297	48,876
76	27,754	5,934	7,202	40,890
77	15,905	4,420	4,948	25,273
78	21,549	11,285	5,008	37,842
79	8,508	3,107	830	12,445
1980	11,958	3,505	1,299	16,762
81	20,584	7,727	1,928	30,239
82	9,439	1,913	572	11,924
83	16,732	3,410	1,168	21,310
84	26,520	1,631	142	28,293
85	14,410	1,525	377	16,312
86	7,018	2,461	1,862	11,341
25-year average	20,215	12,428	4,422	37,666
1987*	3,090	2,279	1,156	6,524

\*Preliminary

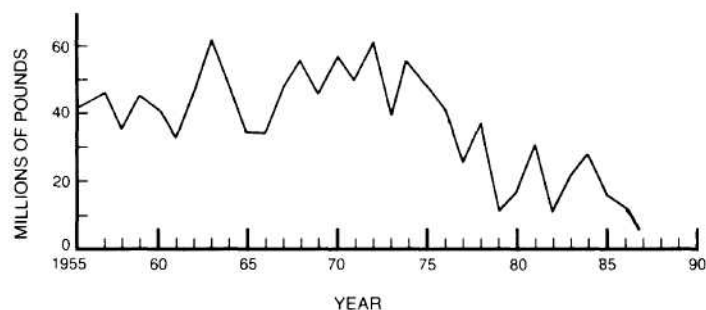


Figure 1. Combined annual landings of albacore in California, Oregon and Washington, 1956-1987.

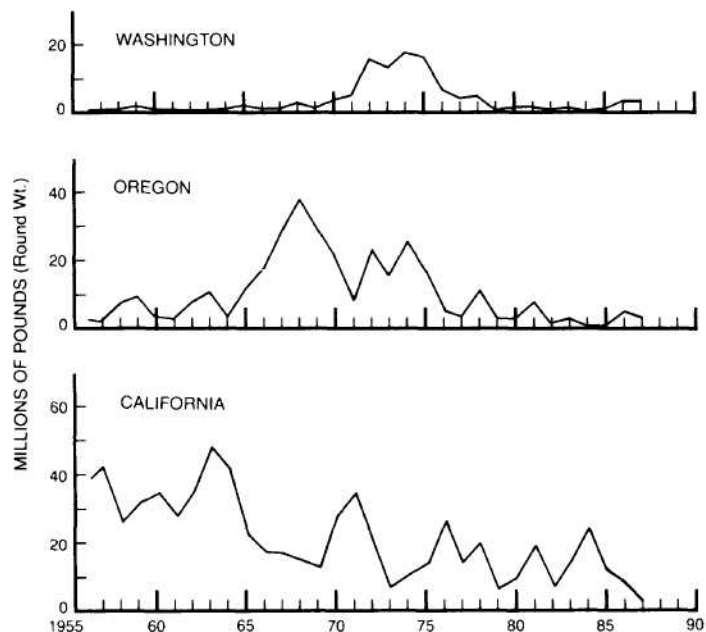


Figure 2. Annual albacore landings by State, 1956-1987.

## PACIFIC HALIBUT FISHERY IN 1987

### Commercial Fishery

Halibut fishing in 1987 continued a recent trend of near record high catches, but declined slightly from 1986 (Table 1). Preliminary landings and number of fishing days by management area for 1987 are presented in Table 2. The fishery landed 69.38 million pounds dressed weight (41,900 mt round weight), just slightly over the 68.825 million pound (41,500 mt) catch limit set by the International Pacific Halibut Commission (IPHC). The 1987 catch is one of the highest on record, surpassed only seven times since 1929. Largest abundance and the majority of the catch occurred in the Gulf of Alaska (Alaska Peninsula through Southeast Alaska). Total abundance of the halibut population increased throughout its range since low levels in the late 1970's, but abundance remains below  $B_{msy}$  levels in the Bering Sea and the British Columbia-Washington-Oregon area.

The IPHC identified three management problems in 1986 that continued in 1987: high daily catch rates that jeopardize managing at the catch limit; illegal fishing; and deadloss wastage in the fishery. Additionally, poor quality of the landed fish and safety problems during short seasons became increasingly evident in 1987.

Major changes in management of the 1987 fishery restricted catch at the end of the season to achieve the catch limit, and incorporated trip limits and a season shorter than 24 hours. Trip limits of 10,000 pounds in Area 4C (the Pribilof Islands), 25,000 pounds in Area 3B (the Alaska Peninsula west of Kodiak Island), and 20,000 pounds in Area 3A-3B (the central Gulf of Alaska) were implemented. A 12-hour season was included for the 3B opening in conjunction with the 25,000 pound trip limit. The IPHC considers trip limits as an improvement in managing for a catch limit, but that the 12-hour season was not.

Daily catch rates continued high in 1987. The change to circle hooks from j-hooks, increased abundance, and increased fleet size in some areas combined to produce potential daily catches of over 15 million pounds (9000 mt) in Areas 3A and 3B (areas which represent about 60% of the total catch).

High prices, short seasons and large profits are apparently the cause of increased fishing before and after legal openings or in closed areas. Reports from fishermen of illegal fishing activities continued in 1987. In addition to other

difficulties, a high level of illegal fish activity compromises CPUE data.

Efforts by fishermen to increase efficiency are causing increased incidental mortality. During short openings, some fishermen set more gear than can be hauled during an opening to be sure that maximum fishing occurs. In such cases, fishing occurs up to the end of the season, and all unretrieved gear is abandoned for later pick-up. A common practice is to dress halibut after the close of the season rather than bleeding and dressing the fish at sea. Bad weather also forces gear to be left. Incidental halibut mortality also occurs when fishermen improperly release undersized halibut; short intense seasons reduce the incentive of fishermen to exercise full care in releasing undersized fish. The amount of halibut killed incidentally in the longline fishery is estimated at approximately 2.7 million pounds in 1987.

### Sport Fishery

Continuing a decade long trend in increasing catches, the recreational harvest of halibut will likely approach four million pounds in 1987. The sport fishery harvest is summarized by regulatory area for 1983-1987 in Table 3. Most of the catch is harvested along the Kenai Peninsula and in Southeast Alaska. A rapidly developing sport fishery in Oregon and Washington substantially exceeded the targeted harvest in 1987, and will require significant restrictions in order to remain within catch limits in 1988.

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Table 1. Pacific coast commercial halibut landings of the United States and Canada (millions of pounds).

Year	Canadian	U.S.	Total
67	25.5	29.7	55.2
68	29.4	19.2	48.6
69	33.5	24.8	58.3
70	29.1	25.8	54.9
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	56.1
86	11.2	58.4	69.6
87*	12.2	57.2	69.4

\*Preliminary (does not add because of rounding)

Table 2. Preliminary commercial catch summary of the 1987 Pacific Halibut fishery.

Regulatory Area	Catch Limit (millions lbs.)	Fishing Days	Catch (millions lbs.)
2A	0.55	12	0.55
	*	214	.04
2B	11.5	16	12.2
2C	11.5	3	10.7
3A	31.0	3	31.2
3B	9.5	3.5	7.8
4A	1.75	4	3.7
4B	1.75	6	1.5
4C	0.6	6	0.9
4D	0.6	7	0.7
4E	0.075	30	0.09
TOTAL	68.825		69.38

\*100,000 pounds of the Area 2A catch limit was sub-allocated by the United States Government to eleven Northwest Indian treaty tribes.

Table 3. Pacific coast recreational halibut landings by regulatory area, 1983-1987 (millions of pounds, dressed weight).

Area	1983	1984	1985	1986	1987*
2A	.05	.10	.18	.26	.46
2B	.10	.12	.53	.56	.60
2C	.55	.62	.68	.73	.78
3A	.96	1.04	1.23	1.92	2.18
4	-	-	.01	.01	.02
Total	1.66	1.88	2.63	3.48	4.04

\*Preliminary estimates

# GROUNDFISH FISHERY IN 1987

The preliminary estimate of 1987 groundfish landings by North American fishermen fishing the northeast Pacific Ocean is 2,057,574t, a 28% (446,150t) increase over 1986. Recreational catch estimates for 1987 are incomplete or unavailable in metric tons (t) and were not included in the above estimate. U.S. fishermen accounted for 94% of the total landings with the remainder landed by Canadian fishermen. U.S. and Canadian joint venture fisheries landed 74% (1,521,443t) of the total commercial groundfish harvest. Trawl fisheries dominated the domestic catch accounting for 86% (460,920t) of the aggregate catch followed by longline (10% or 52,883t), "other gear" (3% or 15,624t) and pot (1% or 6,703t) fisheries. Catch by "other gear" types is dominated by groundfish caught incidentally by shrimp trawlers.

## COMMERCIAL FISHERIES

Coastwide 1987 groundfish landings increased over the 1986 level due to increases in domestic and joint venture catches in all reporting U.S. States and Canada. The largest increases were seen in Alaska based Bering Sea joint venture fisheries and domestic annual processed (DAP) groundfish fisheries where pollock was the principal species taken in both fisheries. Canadian and Washington, Oregon and California (WOC) joint venture fisheries for Pacific whiting contributed significantly to the increase as well.

### JOINT VENTURES

#### Alaska

The 1987 fishing year marked the high point of joint venture fisheries off Alaska; unless quotas are substantially raised, joint venture landings are expected to decline in 1988 and following years due to the rapid expansion of the DAP fisheries. Deliveries of Alaskan groundfish by U.S. catcher-boats to foreign processing vessels was 1,366,485t only about 13% more than the previous year's record catch of 1,213,882t. The total ex-vessel value of the 1987 harvest is estimated at \$188 million, compared to \$144 million in 1986.

Partnerships were formed among eighteen U.S. companies and 38 foreign companies: 15 Korean, 18 Japanese, one Chinese, one Soviet and three Polish. There were no longline joint ventures.

Total catches of pollock reached 1,057,315t, an increase from approximately 900,000t in 1986. Less than 23,000t of the pollock catch was in the Gulf of Alaska; the Gulf allocation was made in September, and fishing was over by October 17. The Bering Sea subarea was closed to directed pollock fishing from June through August, and then again in October for the remainder of the year, as a result of quotas being met. The yellowfin sole and other flatfish fisheries expanded slightly to 224,000t from 216,000t in 1986; the 1987 fishery for yellowfin sole was closed on June 9. In the Gulf, a small flatfish fishery was closed on November 5, when the bycatch limit of halibut by all on-bottom gear (including the fall pollock fishery) was exceeded. Atka mackerel catches declined to 30,000t from 1986's 32,000t; the fishery was closed on November 1.

The joint venture trawl fleet continued to expand in 1987, despite shortened fishing seasons, to 121 vessels. Several of the fleet began operating as catcher-processors when not involved in joint ventures, and about a dozen more spent part of the year delivering to shore-side plants. Information is incomplete for the fleet but for the 113 vessels in the NMFS permit file, 18 indicate home ports in Alaska, 72 in Washington, and the rest in Oregon and California. Seattle was listed as homeport for 49 of the JV fleet.

Possibly due in part to the increased "fishing derby" nature of the fisheries, 1987 was the worst year on record for

loss of life and vessels in the joint venture fisheries. The NORDFIORD was lost with all hands, the UYAK II lost four crew, and the MISS IN SOO and GOLDEN PRIDE were capsized, although crews were rescued.

#### Washington, Oregon & California

In 1987, four foreign nations, the Soviet Union, Poland, the Republic of Korea, and the People's Republic of China, were involved in trawl and joint venture fisheries for groundfish off Washington, Oregon, and California. The Soviet fleet conducted only joint venture operations (receipt and processing of U.S.-caught fish), whereas Poland, Korea, and China participated in both JV and non-JV fisheries. At most 39 foreign fishing vessels (trawl, processing, or support vessels) operated at any one time off the coast, compared with 36 in 1986, 24 in 1985, 25 in 1984, 21 in 1983, 18 in 1982, and 41 in 1981. As in the past, Pacific whiting (whiting or hake) is the target species in both foreign trawl and joint venture operations.

Poland, Korea, and China requested allocations in 1987. The Secretary of Commerce's 1985 Certification of the Soviet Union for their excessive harvest of minke whales off Antarctica remained in effect in 1987, and the Soviets did not request an allocation. Poland used a total of 31 trawlers (most of these vessels also participated in the joint venture fishery). Korea and China used one vessel each (the same vessels also participated in the joint venture fishery). Of the 63,750t of whiting available for foreign harvest in 1987, a total of 59,500t were allocated: 53,800t to Poland, 2,500t to Korea, and 3,200t to China. By the end of the season, the Poles had harvested almost all (48,276t) of their allocation, Korea about half (1,373t), and China only a fraction (5t), for a total harvest of 49,656t. The remaining 4,250t of whiting were not allocated. Although 2,000t of shortbelly rockfish and 9,600t of jack mackerel were available for foreign fishing in 1987, there was no interest in these fisheries.

In 1987, joint venture operations involved Poland and the Soviet Union as in 1984-1986, and new participants Korea and China. About 91 percent (105,997t) of the 116,250t available for joint venture processing was taken in 1987, a 30 percent increase in tonnage since 1986 and the highest amount on record. A total of 30 foreign processing vessels received whiting from 30 U.S. trawlers, the highest numbers on record; the next highest year was 1986 when 24 foreign processing vessels received whiting from 25 U.S. trawlers. Although 5,000t of shortbelly rockfish were available for joint venture processing in 1987, there was no interest in this fishery.

Reports from foreign vessels are from the National Marine Fisheries Service foreign fishing observers, and are preliminary. Consequently, the catch reported here may not be identical with that reported by a foreign nation or joint venture company.

The U.S. Coast Guard and special agents of the National Marine Fisheries Service spent a total of 176 patrol days and 23 aircraft days to monitor compliance with the foreign fishing regulations. A total of 69 boarding inspections of foreign vessels were conducted with 16 violations confirmed in the 1987 fishery.

### DOMESTIC FISHERIES

#### Alaska

The year 1987 will undoubtedly be remembered as the year the DAP (domestic annual processed) groundfish fisheries off Alaska finally began to fulfill their great potential. The previous year about 146,000t, or only about 40% of the amount of groundfish anticipated to be taken by U.S. fishermen and processed by U.S. processors, was actually taken, despite the growing fleet (fifteen in 1986) of catcher-processors and several floating factoryships, which together

accounted for over 65% of Alaskan groundfish processed.

Although again in 1987 the DAP component fell somewhat short of its projections, the total catch of 397,000t was over two and a half times the 1986 level. The catcher/processor trawl fleet expanded to 24 boats. Surimi production came into full swing with three major plants, two in Dutch Harbor and one in Kodiak. Kodiak also saw the introduction of many new groundfish lines for pollock, Pacific cod, and flatfish.

Pollock landings exceeded 250,000t, 377% of 1986's. Pacific cod catches almost doubled, to 73,000, apparently due to favorable market conditions that encouraged the H&G catcher/processors and many Alaskan-based longliners, who were facing short seasons on halibut and sablefish, to fish for Pacific cod. Total landings of all flatfish species doubled, mostly due to increased catches of Greenland turbot, and a much expanded fishery for rock sole (11,400t) pioneered by the catcher/processor fleet.

Catches of "fully-utilized" (by DAP) species, sablefish and rockfish, also reached record levels in 1987 due to higher quotas provided by healthy stocks. However, increased effort resulted in much shorter seasons. For longliners, openings for sablefish totalled 12 days in Southeast/East Yakutat, twenty days in West Yakutat, 35 days in the Central Gulf, and 70 days in the Western Gulf. For trawlers, directed fishing for sablefish was closed on March 21 in the Western Gulf and April 11 in the Central Gulf, and further retention of sablefish was prohibited on May 5 in the Central Gulf, June 20 in West Yakutat, and November 10 in Southeast/East Yakutat. Pot fishing for sablefish was closed August 21 in the Western Gulf (the only Gulf area where pot gear could fish for sablefish). All gear types were closed to directed fishing for sablefish in the Bering Sea subarea on August 15 and in the Aleutian subarea on September 23. On July 15, the "other rockfish" category in federal waters of the Gulf was closed to further fishing. Pacific ocean perch, which has separate quotas in each Gulf area, was closed on September 16 in the West and Central areas and November 23 in the East Gulf.

#### **British Columbia**

Canadian landings of groundfish (excluding halibut) were 68,181t in 1987, an increase of 31% above 1986 levels. Trawlers landed 60,227t, 88% of the total catch, 35% above 1986. Major species in the trawl landings were other rockfish (27%), Pacific cod (23%), Pacific hake (22%) and Pacific ocean perch (10%). Canadian landings of groundfish caught by gear other than trawl totalled 7,954t. Trap gear accounted for 2,365t (99.8% sablefish); longline 4,383t (48% dogfish and 29% sablefish) and troll/handline 1,206t (52% lingcod and 42% rockfish).

#### **Washington, Oregon & California**

Federal and State management regulations for the Washington-Oregon-California (WOC) region restricted the harvest of sablefish, widow rockfish, Pacific ocean perch, and most other rockfishes during the year. Vessel trip and frequency limits were the principal regulatory measures used to provide a year-round fishery without exceeding harvest quotas or harvest guidelines. The 1987 fishing year began with a coastwide widow rockfish trip limit of 30,000 lb per week without a biweekly trip option. The remainder of the rockfish complex ("Sebastes complex"), excluding other quota managed species and *Sebastes* sp., was managed on an area-by-area basis. For the rockfish complex north of Coos Bay to the Washington-Canada border, a 25,000 lb trip limit per week was imposed, of which no more than 10,000 lb could be yellowtail rockfish. Unrestricted landings of widow, rockfish complex and yellowtail rockfish were allowed for landings less than 3,000 lb. Biweekly and twice weekly landings options were granted for this area and species complex. For the second consecutive year a 40,000 lb trip limit without a frequency restriction was retained for the rockfish complex south of the Coos Bay north jetty. In the area north of Cape Blanco catches of Pacific ocean perch were limited to 20% (by

weight) of all fish on board or 5,000 lb whichever was less. Unrestricted landings of Pacific ocean perch were allowed for landings of less than 1,000 lb. The sablefish quota of 12,000t was allocated between trawl and non-trawl gears at 52% and 48% respectively. Non-trawl vessels were initially limited to 100 lb of sablefish less than 22 inches while trawlers retained a limit of 5,000 lb on the small fish which was in effect the previous year. Several in-season adjustments in regulations for the WOC fishery were required to promote flexibility in harvesting, minimize discard and to maintain catches within quotas and harvest guidelines. On May 3, the fishing week was changed from Sunday through Saturday to a week beginning on Wednesday and finishing on Tuesday. A long fishing week was declared from May 3-12 with the new week beginning on May 13. The change was made to reduce the amount of fish processing on weekends that the old fishing week encouraged. On May 6, the fixed gear limit on sablefish less than 22 inches was increased to 1,500 lb to minimize discard of undersized fish. Trip limits for rockfish complex north of Coos Bay were maintained for the entire year with one adjustment in the yellowtail rockfish component. On July 22 the weekly limit of 10,000 lb yellowtail rockfish was reduced to 7,500 lb with corresponding adjustments in twice weekly and bi-weekly options.

#### **Washington**

The 1987 projected domestic trawl groundfish landings in Washington increased over 1986 landings by 14%, rising from 13,591t to 15,520t. Trawl landings increased for all major species (annual landings greater than 100t) with the exception of Pacific ocean perch and Pacific whiting. Longline landings totalled 5,418t in 1987 compared with 3,273t in 1986, representing a 66% increase. There was a 22% increase in sablefish landings, but a 200% increase in other fish (mostly dogfish). Following trivial landings in 1986, we showed no landings for groundfish pot vessels in 1987. Landings from other gears reflected the improved landings reported elsewhere: 1987 landings were up 33% from 1,026t in 1986 to 1,364t in 1987.

#### **Oregon**

Oregon's preliminary estimate of total commercial groundfish landings in 1987 is 30,637t compared to 24,911t in 1986. Trawl, pot and longline landings increased 25%, 19% and 4% due to increased activity and incidental catch of groundfish in the shrimp fishery. Recreational fishermen landed 379t in 1987 compared to 317t in 1986. Improved catches were seen for most species compared to previous years. Dover sole, true cod, rockfish and sablefish contributed significantly to the overall increase. Favorable weather as well as increased catchability of some species appeared to be partially responsible for increased catches. Favorable price and marketing conditions attracted post shrimp season effort to the groundfish fishery.

#### **California**

The preliminary estimate of California's 1987 domestic groundfish landings is 44,814t, compared to 41,246t in 1986. This nine percent increase is attributable largely to increased trawl-caught Dover sole and rockfish catches. Exvessel revenues rose from 28.5 million dollars last year to 33.2 million dollars in 1987. The overall number of groundfish landings, a simple index of fishing effort, remained unchanged at 25,760 deliveries. However, setnet effort declined by 17 percent and line fisheries effort increased by 22 percent. The declining trend in sablefish trap effort and landings in recent years off California continued in 1987, as trap landings dropped by 60 percent to 338t. Fishing by offshore processing/trap vessels was minimal in 1987 despite a good price structure and strong demand. Trawl fishermen enjoyed a very productive year, for their landings expanded by 16 percent to 37,537t. With the exception of sablefish, landings of all other principal trawl species increased from 12 to 131 per-

cent. As a result of a good price structure, robust demand, and a strong shrimp fishery, the trawl industry ended 1987 in the best financial condition since the boom years of the late 1970's and early 1980's.

## RECREATIONAL FISHERY

Recreational catch data remained limited in 1987. Oregon and Canadian reported catch increased in 1987 compared to 1986. Washington reported a total of 780t of recreational catch from Puget sound. Rockfish remained the dominant species group contributing to landings of reporting States and Canada.

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Table 1. Total commercial groundfish landings in metric tons (t) by region for 1986 and 1987 with percent change.

Region	1986	1987	Percent Change
	t	t	
Alaska	142,356	362,167	154
Washington	24,767	30,333	22
Oregon	24,911	30,637	23
California	41,226	44,813	9
Joint Venture	1,295,737	1,472,580	14
Total U.S.	1,528,997	1,940,530	27
Canada (B.C.)	52,169	68,181	31
Canada Joint Venture	30,258	48,863	61
Total Canada	84,427	117,044	42
Total U.S.-Canada	1,611,424	2,057,574	28

Table 2. Domestic groundfish landings in metric tons (t) by region for 1986 and 1987 with percent change.

Region	Trawl		Longline		Pot		Other Gear		Total		Percent Change
	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	
Alaska	110,815	313,576	22,036	38,771	3,334	2,267	6,171	7,553	142,356	362,167	154
Washington	20,431	23,551	3,273	5,418	37	0	1,026	1,364	24,767	30,333	22
Oregon	20,841	25,995	1,399	1,448	1,435	1,707	1,235	1,486	24,911	30,637	23
California	32,470	37,571	2,852	2,863	861	364	5,043	4,015	41,226	44,813	9
Total U.S.	184,557	400,693	29,560	48,500	5,667	4,338	13,475	14,418	233,260	467,950	101
Canada (B.C.)	44,688	60,227	3,059	4,383	3,277	2,365	1,145	1,206	52,169	68,181	31
Total U.S. & Canada	229,245	460,920	32,619	52,883	8,944	6,703	14,620	15,624	285,429	536,131	88

Table 3. Domestic trawl landings in metric tons (t) for food, 1986 & 1987 (preliminary) & 10-year mean (1977-1986) by species and region with the commercial landings for all gears.

Species					Total	British	Total U.S.	
by group		Alaska	Washington	Oregon	California	U.S.	Columbia	& Canada
Petralesole	1986	0	310	707	711	1,728	416	2,144
	1987	0	523	848	864	2,235	439	2,674
	% change	0	69	20	22	29	6	25
	10-yrmean		522	920	876		320	
English sole	1986	0	819	551	1,074	2,444	452	2,896
	1987	0	924	594	1,495	3,013	768	3,781
	% change	0	13	8	39	23	70	31
	10-yrmean		1,025	753	1,507		913	
Dover sole	1986	0	1,493	4,770	10,987	17,250	1,167	18,417
	1987	0	1,603	6,031	12,320	19,954	628	20,582
	% change	0	7	26	12	16	-46	12
	10-yrmean		2,216	5,682	9,813		986	
Rock sole	1986	0	53	6	3	62	454	516
	1987	0	33	1	4	38	898	936
	% change	0	-38	-81	33	-38	98	81
	10-yrmean		126	8	4		1,016	
Pacific cod	1986	35,313	928	26	0	36,267	3,637	39,904
	1987	53,868	2,292	639	58	56,857	13,644	70,501
	% change	53	147	2,339	0	57	275	77
	10-yrmean		6,692	198	0		5,786	
Lingcod	1986	33	599	489	237	1,358	2,924	4,282
	1987	2	867	566	547	1,982	2,401	4,383
	% change	-94	45	16	131	46	-18	2
	10-yrmean		1,122	863	873		2,291	
P. ocean perch	1986	786	735	659	30	2,210	5,914	8,124
	1987	5,389	458	551	109	6,507	6,293	12,800
	&change	586	-38	-17	263	194	6	58
	10-yrmean		NA	776	23		5,011	
Other rockfish	1986	1,430	6,493	9,826	10,466	28,215	17,571	45,786
	1987	8,371	7,527	12,465	12,574	40,937	16,522	57,459
	% change	485	16	27	20	45	-6	25
	10-yrmean		10,852*	13,002	12,638		7,264	
Sablefish	1986	3,344	557	2,125	4,221	10,247	543	10,790
	1987	3,762	832	2,540	3,048	10,182	423	10,605
	% change	13	49	20	-28	-1	-22	-2
	10-yrmean		985	2,079	3,163		324	
Pacific whiting	1986	0	1,558	419	2,982	4,959	6,802	11,761
	1987	0	400	176	4,518	5,094	13,219	18,313
	% change		-74	-58	52	3	94	56
	10-yrmean		1,959	281	1,126		3,052	
Walleye pollock	1986	62,862	45	0	0	62,907	577	63,484
	1987	221,796	61	0	0	221,857	1,401	223,258
	% change	253	36	0	0	253	143	252
	10-yrmean		560	0	0		1,540	
Total above	1986	103,768	13,590	19,578	30,711	167,647	40,457	208,104
Species	1987	293,188	15,520	24,409	35,537	368,654	56,636	425,290
Total all	1986	110,815*	20,431	20,841	32,841	184,557	44,688	229,245
species	1987	313,576	23,551	25,995	37,571	400,693	60,227	460,920
	% change	183	15	25	16	117	35	101

\*Washington reported 10 year mean of rockfish landed catch includes Pacific ocean perch. Alaska flatfish landed catch reported in total of all species.

Table 4. Catch in metric tons (t) by species group and region of joint venture fisheries in 1987 with 1986 totals.

	Bering	Gulf of	Total	Calif., Oregon	Total	Canada	
Pacific whiting	0	0	0	105,997	105,997	47,658	153,655
Pollock	1,034,493	22,822	1,057,315	0	1,057,315	1,048	1,058,363
Yellowfin sole	181,393	0	181,393	0	181,393	0	181,393
Other flatfish	36,003	904	36,907	0	36,907	0	36,907
Pacific cod	57,638	1,883	59,521	0	59,521	0	59,521
Atka mackerel	30,030	5	30,035	0	30,035	0	30,035
P. ocean perch	556	107	663	0	663	0	663
Other rockfish	320	28	348	76	424	135	559
Sablefish	123	180	303	2	305	0	305
Other fish	0	0	0	20	20	22	42
Total 1986	1,148,858	65,024	1,213,882	81,855	1,295,737	30,258	1,325,995
Total 1987	1,340,556	25,929	1,366,485	106,095	1,472,580	48,863	1,521,443
% Change	17	-60	13	30	14	61	15

Species	Sea	Alaska	Alaska	Washington	U.S.	(B.C.)	Total
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Table 5. Longline landings in metric tons (t) by major species and region in 1986 and 1987.

Region	Sablefish		Lingcod		Rockfish		Pacific Cod		Other		Total	
	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987
Alaska	18,217	27,060	111	142	1,265	2,002	2,127	9,371	316	196	22,036	38,771
Washington	2,072	2,536	65	73	381	486	11	37	744	2,286	3,273	5,418
Oregon	1,083	1,000	35	44	273	393	1	2	8	10	1,399	1,448
California	880	908	138	143	1,816	1,802	0	1	18	9	2,852	2,863
Total U.S.	22,252	31,504	349	402	3,735	4,683	2,139	9,411	1,086	2,501	29,560	48,500
Canada (B.C.)	847	1,133	353	455	899	908	4	9	956	1,878	3,059	4,383
Total U.S. & Canada	23,099	32,637	702	857	4,634	5,591	2,143	9,420	2,042	4,379	32,619	52,883

Table 7. Landings in metric tons (t) from miscellaneous gears by major species and region in 1986 and 1987.

Region	Sablefish		Lingcod		Rockfish		Pacific Cod		Other		Total	
	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987
Alaska	23	265	79	80	29	61	191	396	5,849	6,751	6,171	7,553
Washington	25	24	149	173	692	705	22	15	138	447	1,026	1,364
Oregon	28	33	131	117	976	1,220	4	15	96	100	1,235	1,486
California	164	33	124	190	4,592	3,596	0	0	163	196	5,043	4,015
Total U.S.	240	355	483	560	6,289	5,582	217	426	6,246	7,494	13,475	14,418
Canada (B.C.)	1	56	548	626	568	503	9	8	19	13	1,145	1,206
Total U.S. & Canada	241	411	1,031	1,186	6,857	6,085	226	434	6,265	7,507	14,620	15,624



Table 8. Estimated recreational landings in metric tons (t) by major species and region in 1986 and 1987.

Region	Rockfish		Lingcod		Flatfish		Pacific Cod		Other		Total	
	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987
Alaska <sup>1/</sup>	101,258	NA	0	NA	0	NA	0	NA	88,834	NA	190,092	NA
Washington <sup>2/</sup>	297	NA	53	NA	88	NA	211	NA	131	NA	780	
Oregon	252	270	43	56	8	40	0	0	14	12	317	379
California	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total U.S.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canada (B.C.) <sup>3/</sup>	167,783	136,270	70,817	35,789	0	0	0	0	5,212	64,273	243,812	266,332
Total U.S. & Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

<sup>1/</sup> Alaska catches are reported in numbers of fish; lingcod and Pacific cod included in other fish. <sup>2/</sup>

Puget Sound recreational landings only.

<sup>3/</sup>,  
Canada catches are reported in numbers of fish

## DUNGENESS CRAB FISHERY IN 1986-1987

Pacific Coast Dungeness crab landings totaled 30.0 million pounds, about 3.4 million pounds more than 1985-86 but about 7.6 million pounds below the long-term average. Production from northern California, Oregon and coastal Washington was 14.7 million pounds, about 1.8 million pounds lower than last season and 6.5 million pounds below the long-term average. "Lower 48" ex-vessel prices at the season opening were typically \$1.25/lb and peaked at \$1.75/lb.

### ALASKA

Overall harvest for CY 1987 was 8.9 million pounds, an increase of 3.2 million pounds over 1986, but far below the record 15+ million pounds landed in the peak production years of 1980 and 1981. Production from the five major areas was: Kodiak—1.45 million; Cook Inlet—0.78 million; Prince William Sound—0.89 million; Yakutat—2.68 million; Southeast—3.13 million. Compared to 1986, production in Yakutat nearly tripled, accounting for about 75% of the overall 3.2 million pound increase. The only decline occurred in Prince William Sound.

### BRITISH COLUMBIA

Based on catch reporting for the first 6 months, B.C. production is expected to increase by about 16% over 1986 to 3.3 million pounds.

### CALIFORNIA

California landings totaled 8.4 million pounds, an increase of 2.5 million pounds over 1985-86. The northern California ports of Crescent City, Trinidad, Eureka and Fort Bragg received 4.16, 0.79, 1.64 and 0.20 million pounds for a total of 6.79 million pounds, about 1.25 million pounds more than the previous season. December landings accounted for 87% of the season total. The San Francisco region produced 1.6 million pounds, more than quadruple the previous season. At the season opening in the San Francisco area (November 1) the ex-vessel price was \$2.10/lb, but declined to \$1.35/lb in December due to the December 1 opening ex-vessel price of \$1.25/lb in the northern area. Ex-vessel prices peaked at \$2.30/lb in San Francisco and \$1.75/lb in the northern area.

### OREGON

Oregon landings totaled 4.7 million pounds, a decrease of about 2.4 million pounds from the 1985-86 season and about 3.9 million pounds below the long-term average. This is the fifth consecutive season of below-average production. Fleet size was 330 boats.

### WASHINGTON

The coastal fishery produced 3.2 million pounds, a decrease of 0.7 million pounds from 1985-86 and about 4 million pounds below the long-term average. This is the seventh consecutive season of far below-average production. Fleet size was 107 boats. The Puget Sound fishery produced 1,464,000 pounds, about 0.25 million pounds below the 10-season average.

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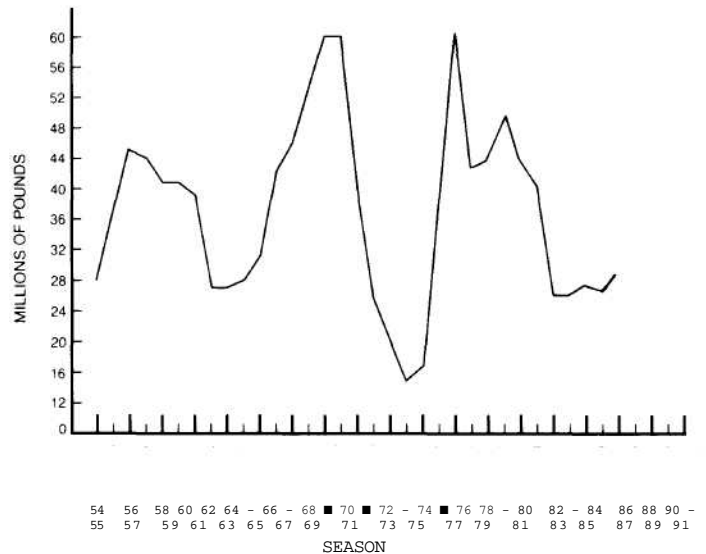


Figure 1. Pacific coast Dungeness crab landings by season, including British Columbia, 1954-1987.

1954-55 56-57 58-59 60-61 62-63 64-65 66-67 68-69 70-71 72-73 74-75 76-77 78-79 80-81 82-83 84-85 86-87 88-89 90-91

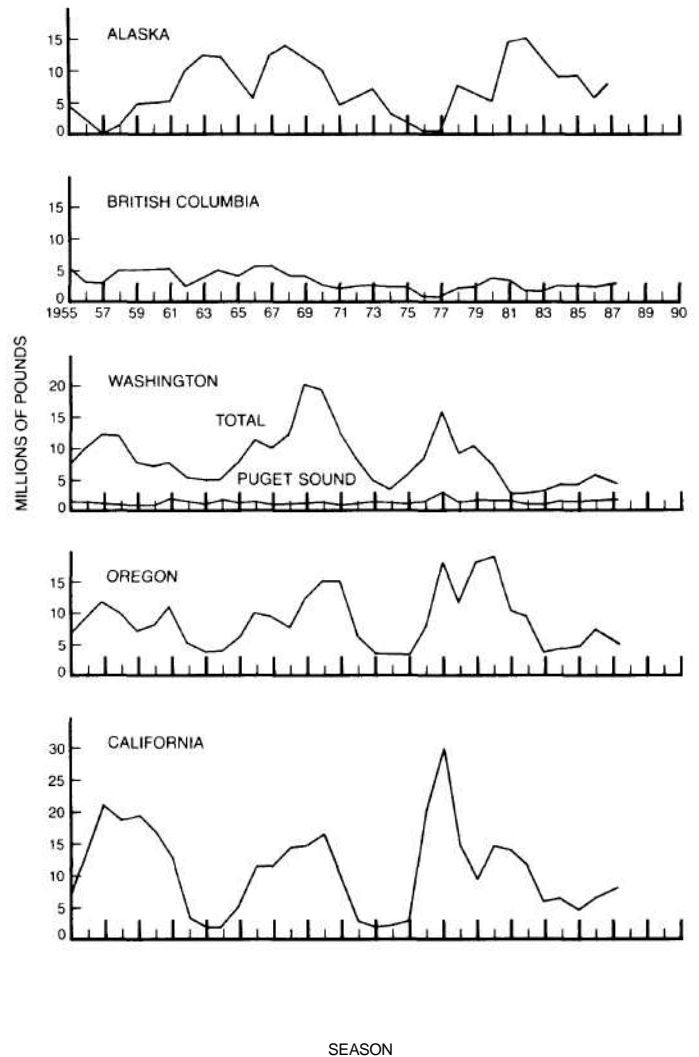


Figure 2. Dungeness crab landings by season 1954-55 through 1986-87, except Alaska and British Columbia seasons are all in the pertinent calendar years.

## TROLL SALMON FISHERY IN 1987

### ALASKA

The Alaska troll summer season for all species opened June 20, closed to chinook on July 12, and closed to all species August 2. The season reopened August 21 to all species except chinook and closed September 20.

The Alaska summer troll chinook catch was 4.9 million pounds round weight and the troll coho catch was 8.3 million pounds round weight.

### WASHINGTON

Washington trollers targeted on chinook in a coast-wide, all species except coho fishery which was open May 1-10 and May 14-15 for a total of 12 days. The all species fishery was open July 25-26 outside 10 from the Queets River south to the Columbia River.

Landings from these fisheries combined with those from the Treaty Indian commercial troll fishery produced 1.1 million round pounds of chinook and 0.7 million round pounds of coho. Both the chinook and coho catches fell under the 10-year mean of 1.5 million and 3.5 respectively. Chinook catches were up from the 1986 level of 0.7 and coho catches equaled the 1986 catch of 0.7 million pounds round.

### OREGON

The area north of Cape Falcon opened for chinook fishing on May 1 in conjunction with the Washington season. The area between Cape Falcon and Cape Perpetua opened to chinook only May 1 to July 14 and September 16 to October 31 and was open for all species with coho restrictions July 15-28 and August 1 to September 15.

The Cape Perpetua to Cape Blanco area was open for chinook only fishing May 1 to June 30. Chinook only fishing re-opened from Cape Perpetua to Cape Arago on September 16 and from Cape Arago south to Cape Blanco on the 19th and remained open in those areas until October 31. Cape Perpetua to Cape Blanco was open for all species fishing with coho restrictions July 15-28 and August 1 to September 15.

A chinook only fishery took place in the area between Sisters Rock to Chetco Point May 1-14. Cape Blanco south to the OR/CA border was open June 1-3, 7-10 and 14-25 to all species with coho restrictions. The area from Cape Blanco to Humbug Mt. opened to chinook only October 1 and closed November 30.

Record high chinook landings, 6.0 million pounds round, were made in 1987, with catches 151% higher than the 10-year mean of 2.4, and 54% higher than the 1986 landing of 3.9 million pounds round. Coho catch for 1987 of 2.2 million pounds round weight fell below the 10-year mean of 2.5 but equaled the 1986 catch level.

### CALIFORNIA

The troll season north of Point Delgada paralleled the Oregon season south of Cape Blanco. A special troll fishery inside six miles from Punta Gorda to Trinidad Head (centering on the Eel River mouth) opened September 8 and closed September 30. South of Point Delgada the troll season for chinook opened May 1 and closed September 30, with two three-day closures in early June from Point Delgada to Point Arena. Coho fishing was permitted south of Point Delgada from June 1 to July 21. Minimum size limits statewide for chinook and coho were 26 and 22 inches total length, respectively, and barbless hooks were required.

California preliminary troll chinook landings were 9.5 million pounds round, 56% higher than the previous 10-year average. Preliminary landings of coho were 26,000 pounds round, only 60% of the previous 10-year average.

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### Other Contributors:

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Table 1. Estimated landings of troll caught chinook and coho salmon in 1986 and 10-year (1977-1986) average (round weights in millions of pounds). All 1987 data are preliminary.

Region	Species = Chinook	Average
	1987	
Alaska British	4.9	4.9
Columbia	11.6	11.0
Washington	1.16.0	1.5
Oregon California	9.5	2.4
		6.1
<b>TOTAL</b>	<b>33.1</b>	<b>25.9</b>

Region	Species = Coho	Average
	1987	
Alaska British	8.3	9.0
Columbia	18.5	15.6
Washington	0.7	2.0
Oregon California	2.2	2.5
	0.3	0.5
<b>TOTAL</b>	<b>30.0</b>	<b>29.6</b>

Region	Species = Chinook + Coho	Average
	1987	
Alaska British	13.2	13.9
Columbia	30.1	26.7
Washington	1.8	3.5
Oregon California	8.2	4.9
	9.8	6.6
<b>TOTAL</b>	<b>63.1</b>	<b>55.6</b>

Table 2. Pacific Coast commercial troll chinook salmon landings in millions of pounds round, 1956-87. All 1987 data are preliminary.

Year	British Columbia		Wash- ington	Oregon California		Total
	Alaska					
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	5.6	11.6	1.9	2.5	6.4	28.0
1981	4.9	10.2	1.4	1.8	6.8	25.1
1982	4.7	11.9	1.9	2.7	8.5	29.7
1983	5.0	6.5	0.8	0.8	2.4	15.5
1984	4.2	9.8	0.2	0.6	2.3	17.1
1985	3.8	9.8	0.6	2.3	5.2	21.7
1986	3.7	8.6	0.7	3.9	7.6	24.5
1977-						
Mean	4.9	11.0	1.5	2.4	6.1	25.9
1987	4.9	11.6	1.1	6.0	9.5	33.1

Table 3. Pacific Coast commercial troll coho salmon landings in millions of pounds round, 1956-1987. All 1987 data are preliminary.

Figure 1. Pacific Coast annual landings of troll caught Chinook

Year	Alaska	British Columbia	Washington	Oregon	California	Total
1956	3.9	12.9	5.3	3.2	0.5	25.7
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	5.4	15.3	2.3	2.5	0.3	25.8
1981	6.5	11.3	2.0	3.8	0.5	24.1
1982	10.0	15.8	2.2	3.1	0.6	31.7
1983	9.6	13.3	0.3	1.3	0.3	24.8
1984	11.2	17.3	0.3	0.1	0.4	29.3
1985	13.5	17.3	0.6	0.6	0.1	32.1
1986	13.9	23.0	0.7	2.2	0.8	30.1
1977-86						
Mean	9.0	15.6	2.0	2.5	0.5	29.6
1987	8.3	18.5	0.7	2.2	0.3	30.0

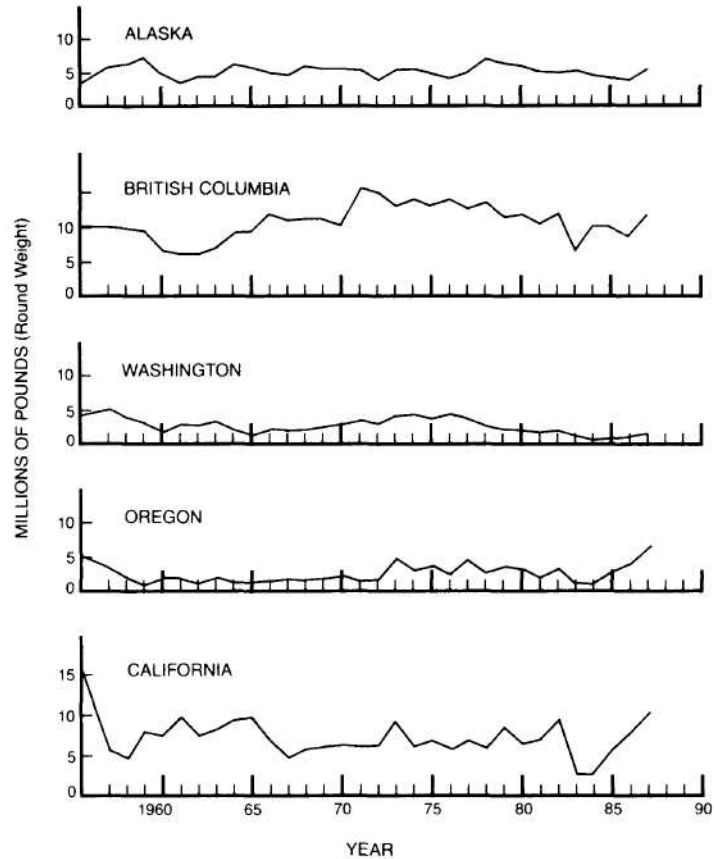
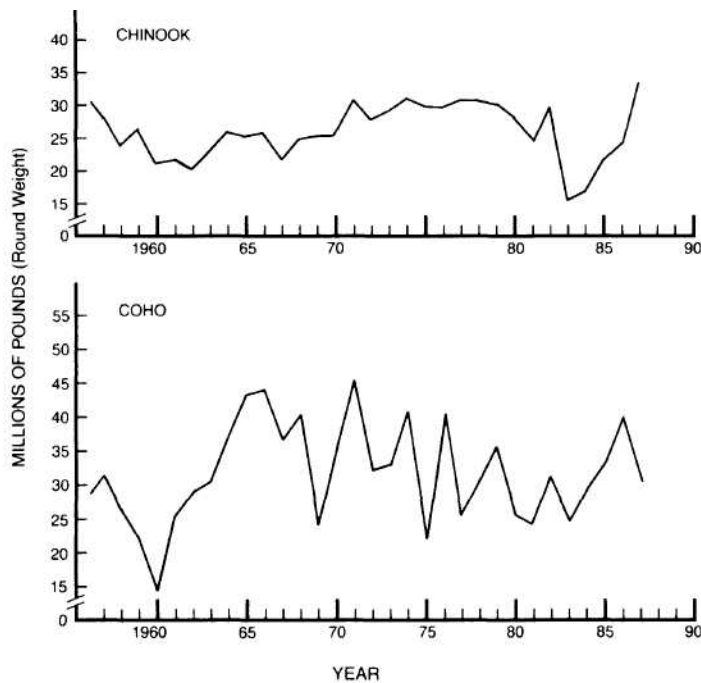
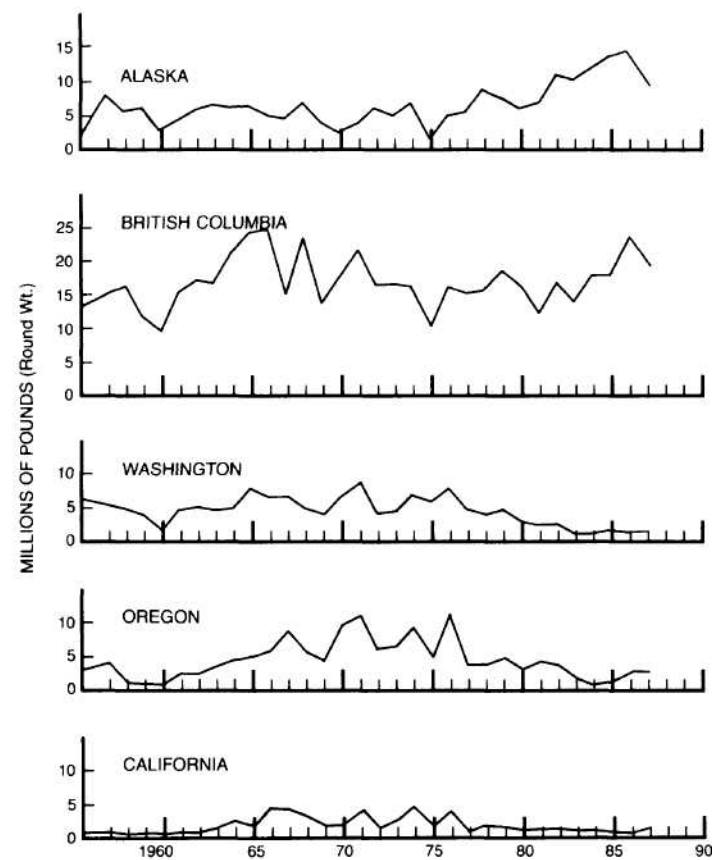


Figure 2. Annual troll chinook salmon landings by area, 1956-1986 and preliminary 1987.



and coho salmon, 1956-1986 and preliminary 1987.  
Figure 3. Annual troll coho salmon landings by area, 1956-1986 and preliminary 1987.

## SALMON AND STEELHEAD SPORT CATCHES IN 1986 IN THE PACIFIC COAST STATES

As a result of excess escapement, Idaho was able to permit a chinook salmon fishery for the second year in a row after a number of years of closures on this fishery. Landings data for Oregon steelhead is not yet available for either 1985 or 1986. The total harvest of U.S. Pacific coast salmon and steelhead was 2,113,308 fish (Table 1). The total 1986 harvest of salmon was 1,898,949 fish which is 102% of the ten-year average. California does not estimate steelhead catches and Oregon has not been able to provide steelhead catches for 1985 or 1986 because of catch data not yet processed. The steelhead catches for the other three states totaled 214,359. This catch for Alaska, Idaho and Washington is 53% above the ten-year average for these states combined. The ten-year average was exceeded in all three states (Table 2).

### ALASKA

Alaskan anglers harvested an estimated 720,502 sea-run salmon and 5,850 steelhead in 1986 (Table 1). The salmon harvest was well above the previous record harvest of 625,846 set in 1984 while the steelhead harvest was lower than the 1984 record harvest of 6,539 fish. The total harvest of sea-run salmon included 105,482 chinook, 255,887 coho, 186,448 sockeye, 145,960 pink, and 26,725 chum salmon.

The marine harvest of 204,919 salmon included 28,942 chinook, 88,309 coho, 6,711 sockeye, 71,942 pink, and 9,015 chum salmon. The freshwater total of 515,583 included 76,540 chinook, 167,578 coho, 179,737 sockeye, 74,018 pink, and 17,710 chum salmon. Of the 5,850 steelhead harvested by Alaskan anglers, 914 were taken in saltwater compared to a saltwater harvest of 4,936 fish.

### WASHINGTON

Washington recreational marine (Ocean and Puget Sound) salmon angler trips, numbering at 1.2 million, equaled the 1985 1.2 million effort figure and fell below the ten-year average of 1.6 million angler trips.

Marine area chinook catches rose from the 1985 level of 176,281 to 201,531 in 1986, but were below the ten-year average of 261,291 chinook. Coho catches were up from the 1985 level of 370,494 to 511,640 in 1986 and were above the ten-year average of 486,701 coho.

A total of 168,500 steelhead were harvested in 1986. This is 38% above the 10-year average of 122,100.

### IDAHO

In 1986, chinook hatchery returns exceeded escapement needs. Sport fishing was permitted and resulted in 13,000 angler days which harvested 4,000 salmon.

The 1986 steelhead run to Idaho produced the largest harvest on record. Anglers fished 239,000 days to harvest 40,000 steelhead. The 1986 harvest exceeded the 1985 harvest by 16%.

### OREGON

The 1987 Oregon ocean sport catch of salmon was estimated at 236,900 fish, down 4% from the 1986 catch but 2,800 fish above the 10-year average. The catch consisted of 58,600 chinook, 177,400 coho and 900 pink salmon. The chinook catch was the highest since 1977. The coho landings were 11% below the 10-year average of 200,100 fish. The 1986 and 1987 state-wide steelhead catch data is still being processed.

### CALIFORNIA

The 1986 ocean sport catch estimate of 150,500 salmon was down 14% from the 1985 harvest of 175,800 and was up 15% from the 10-year average. Coho salmon made up 11% of the marine sport catch in 1986.

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Table 1. Salmon and steelhead sport harvest, 1986.

State	Chinook	Coho	Pink	Other Salmon <sup>1</sup>	Steelhead	Total
Alaska	134,424	344,196	217,902	44,435	5,850	746,807
Wash.	201,531	511,640	—	—	168,500	881,671
Oregon	58,600 <sup>2</sup>	177,400 <sup>2</sup>	900 <sup>2</sup>	—	<sup>3</sup>	236,000
Idaho	4,000	—	—	—	40,000	44,000
Calif.	131,162	19,338	-	-	<sup>3</sup>	150,500
<b>Total</b>	<b>529,717</b>	<b>1,052,574</b>	<b>218,802</b>	<b>44,435</b>	<b>214,350</b>	<b>2,058,978</b>

<sup>1</sup> Sockeye and chum salmon <sup>2</sup> Marine catch only <sup>3</sup> Estimates unavailable

Table 2. Salmon and steelhead sport catches (1,000's of fish) for the Pacific Coast States, 1974 to 1986 and 10-year (1976 to 1985) averages

Year	Alaska		California		Idaho		Oregon		Washington		Total	
	Salmon	Steelhead	Salmon <sup>2</sup>	Steelhd.	Salmon	Steelhead	Salmon <sup>2</sup>	Steelhead	Salmon <sup>2</sup>	Steelhead	Salmon	Steelhd. <sup>1</sup>
1974	184.9	1.0	234.0		1.5	3.0	465.0	166.8	1,320.4	110.0	2,205.8	280.8
1975	178.0	2.2	125.0		0.0	0.0	415.9	186.4	1,399.4	92.9	2,118.3	281.5
1976	200.6	2.3	139.0	Steelhead	0.0	2.0	669.0	118.3	1,749.6	89.1	2,758.2	211.7
1977	381.1	3.7	154.0	catches	3.5	13.0	372.2	145.1	1,191.4	100.0	2,102.2	261.8
1978	525.4	4.3	128.0	are	7.0	11.5	386.9	200.6	1,107.9	163.1	2,155.2	379.5
1979	361.2	3.0	138.7	not	closed	5.7	278.8	122.4	1,123.9	94.8	1,902.6	225.9
1980	531.8	4.8	107.0	estimated	closed	9.1	417.3	203.7	852.9	151.1	1,907.6	368.7
1981	379.5	3.3	93.4	in	closed	13.0	319.0	155.0	760.1	125.1	1,552.0	296.4
1982	597.3	3.7	173.8	California	closed	20.5	213.8	135.1	736.9	104.2	1,678.7	263.5
1983	532.5	5.4	89.1		closed	32.2	171.7	84.2	860.6	78.6	1,653.9	200.4
1984	625.8	6.5	107.6		closed	25.1	140.3	198.4	547.4	149.5	1,452.7	379.5
1985	619.2	4.7	175.8			34.5	246.1	188.9	578.6	165.8	1,622.2	393.9
10-year average	449.9	3.8	139.2		1.3	14.6	337.7	168.2	1,006.5	119.9	1,915.8	297.5
1986	720.5	5.8	150.5		4.0	40.0	236.9	NA	687.9	168.5	1,799.8	NA

<sup>1</sup> Excluding California catch <sup>2</sup> Marine fishery data only

## SHRIMP FISHERY IN 1987

The 1987 Pacific coast pandalid shrimp landings in the United States and Canada totaled 75.7 million pounds (Table 1), a 17% increase over 1986 landings. This increase was a result of increased landings in Oregon, British Columbia and California.

Table 1. Annual Pacific Coast pandalid shrimp landings (in 1000's of pounds) by State and Province, 1975-1987.

Year	Alaska	British Columbia	Wash- ington	Oregon	Cali- fornia	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	199,083
1978	73,293	3,460	12,298	56,997	13,167	159,211
1979	50,916	1,578	12,135	29,579	4,992	99,130
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	46,436
1983	7,458	1,200	5,656	6,547	1,132	21,995
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
Mean	49,291	2,816	9,913	26,584	5,680	94,297
1987	2,457	4,700	15,900	44,800	7,800	75,657

### ALASKA

Shrimp landing for the 1987 Alaska shrimp fishery totaled 2,457,000 pounds which was well below the 10-year average and 40% below the 1986 landings.

Kodiak (PMFC Area 54) and Chignik, South Alaska Peninsula and the Aleutian Islands (PMFC Area 55) were closed and no landings were made from these areas. Landings from Cook Inlet (PMFC Area 53) were taken solely by pot anglers and totaled 74,300 pounds. The trawl fishery was closed because of depressed stocks. Landings in Prince William Sound were 320,900 pounds divided at 95,700 pounds for trawl gear and 225,200 pounds for pot gear. Southeast Alaska (PMFC Area 51) landings totaled 2,061,800 pounds. The trawl catch totaled 1,747,200 pounds and the catch by pots was 314,600 pounds.

### BRITISH COLUMBIA

The projected shrimp catch for British Columbia for 1987 is 4.7 million pounds, up 81% from 1986. Trawl catches of ocean shrimp (*Pandalusjordanii*) are expected to increase to 3.3 million pounds, up 230% from 1986. This resulted mostly from increased catches on the west coast of Vancouver Island. The coast wide trap fishery for prawns (*Pandalus plaryceros*) is expected to produce 1.6 million pounds, the same as in 1986.

### WASHINGTON

The final 1987 coastal pink shrimp landings of 15.9 million pounds was the second highest catch in the history of the fishery and substantially higher than the ten year average of landings of 10.0 million pounds. A total of 56 vessels (48 double-rigged) had five or more landings of shrimp during the season. This was a decrease of nine vessels from the 1986 season. Strong market conditions prevailed during the first half of the season and then weakened the latter half due to the market being flooded with small shrimp purchased earlier. The ex-vessel price averaged 65 cents per pound when the season opened April 1 and increased to 75 to 80 cents per pound by late May with a few buyers paying 90 cents per pound for a very good grade of shrimp. By the end of July the price dropped back down to 60 cents per pound and in the third week of August buyers imposed very strict size limits on

the grade of shrimp they would buy (generally not accepting any load that averaged over 140 count per pound). Landings of small illegal shrimp occurred frequently during April and enforcement was increased, curtailing some of the violations. All year classes of shrimp were present and appear relatively strong.

All Oregon catch areas produced 3.9 million pounds or 25% of the total landings. The PMFC area 82 produced 2.4 million pounds and CPUE or pounds of shrimp caught per hour towed averaged 521 pounds per hour for double-rigged vessels. In area 84 and area 86 CPUE averaged 516 and 474 pounds per hour, respectively, for double-rigged vessels.

The Destruction Island grounds (PMFC area 72) produced 36% of the total landings or 5.8 million pounds. Catch per-unit of effort for double-rigged vessels averaged 465 pounds per hour, down slightly from the 1986 average of 543 pounds per hour. Catch-per-unit of effort ranged from a low of 406 pounds per hour in June to 529 pounds per hour in October.

The Grays Harbor area (PMFC area 74) also produced 5.8 million pounds or 36% of the total landings. Catch-per-unit of effort averaged 437 pounds per hour compared to 506 pounds per hour in 1986. July was the least productive month when CPUE averaged 385 pounds per hour and October was the most productive when CPUE averaged 509 pounds per hour.

The Willapa area (PMFC area 75) produced only 2% of the total landings or 376,000 pounds. CPUE averaged 469 pounds per hour for the entire season.

During March, before the Washington season opened, 51,000 pounds of shrimp was landed in Washington that had been caught in Icy Bay, Alaska.

### OREGON

The 1987 Oregon shrimp fishery was the third highest season since the fishery began in 1957. This record was achieved at the end of August when estimated total season catch reached 33.9 million pounds. The second highest catch was made in 1977 with a total landing of 48.6 million pounds of shrimp. The final catch for 1987 was 44.8 million pounds of shrimp.

If a negative statement were to be made about the 1987 Oregon shrimp fishery it would be directed at the size of shrimp caught. There was an abundance of small, one-year-old "pinhead" shrimp prevalent in most of the catch during the first three months of the season. The market for shrimp as the season opened was strong enough to consume this less desirable size or grade of shrimp. The demand for shrimp was reflected by an opening ex-vessel price of \$0.65 per pound which continued to increase to \$0.85 per pound by June. But in July excessive inventories of small shrimp helped drop the ex-vessel price to \$0.60-\$0.70 per pound, depending on the grade and port of delivery.

There is a uniform shrimp regulation in Oregon, Washington, and California which states that it is illegal to land or possess shrimp (applies only to deliveries over 3,000 pounds) which exceed an average for the load of 160 whole shrimp per pound. From April through June the Oregon State Police worked hard to enforce the 160 pound per pound rule to alleviate the excessive catch of sub-legal shrimp.

### CALIFORNIA

Statewide ocean shrimp, *Pandalus jordanii*, landings for the 1987 season were 7.8 million pounds, with much of it coming from the northern portion of the state. The season began April 1, and continued through October.

#### PMFC AREA 92

Landings for the ports of Eureka and Crescent City started off with a bang when 2.8 million pounds were landed in April. The promise of an outstanding season did not hold

up however, and the total landings were 5.6 million pounds, a small increase over the 4.9 million pounds caught in 1986, but still the third largest total ever for PMFC Area 92. An additional 867 thousand pounds were caught off Oregon in Areas 84,86 and 88 and landed in Crescent City.

Ex-vessel price started at \$.65/lb, increased in \$.05/lb increments to \$.85/lb on June 1 and then decreased back to \$.65/lb by the end of June where it remained.

#### *PMFC AREA 94*

Landings totaled 670 thousand pounds in Fort Bragg this season. The 9.8 thousand pounds reported last season had been the first landings for Area 94 since 1982, when 12 thousand pounds were reported.

#### *PMFC AREA 96*

No landings were reported this season. This area (Bodega Bay) has remained unproductive since 1977, when two million pounds were landed.

#### *PMFC AREA 98*

Landings of ocean shrimp, *Pandalus jordani*, totaled 664,828 pounds in PMFC area 98. Ninety-seven percent of that was caught between April and July. By August all but one vessel had quit shrimp fishing in area 98 because of low catch-per-unit effort. Ex-vessel prices ranged from \$0.65 to \$0.85 per pound.

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## FOREIGN FISHING ACTIVITIES OFF THE PACIFIC COAST IN 1987

### Washington, Oregon and California

In 1987, four foreign nations, the Soviet Union, Poland, the Republic of Korea, and the People's Republic of China, were involved in trawl and joint venture fisheries for groundfish off Washington, Oregon, and California. The Soviet fleet conducted only joint venture operations (receipt and processing of U.S.-caught fish), whereas Poland, Korea, and China participated in both fisheries. At most 39 foreign fishing vessels (trawl, processing, or support vessels) operated at any one time off the coast, compared with 36 in 1986, 24 in 1985, 25 in 1984, 21 in 1983, 18 in 1982, and 41 in 1981. As in the past, Pacific whiting (whiting or hake) was the target species in both foreign trawl and joint venture operations.

#### *Foreign Trawl Fishery*

Poland, Korea, and China requested allocations in 1987. The Secretary of Commerce's 1985 certification of the Soviet Union for their excessive harvest of minke whales off Antarctica remained in effect in 1987, and the Soviets did not request an allocation. Poland used a total of 31 trawlers (most of these vessels also participated in the joint venture fishery). Korea and China used 1 vessel each (the same vessels also participated in the joint venture fishery). Of the 63,750 metric tons of whiting available for foreign harvest in 1987, a total of 59,500 metric tons were allocated: 53,800 metric tons to Poland, 2,500 metric tons to Korea, and 3,200 metric tons to China. By the end of the season, the Poles had harvested almost all (48,278 metric tons) of their allocation, Korea about half (1,373 metric tons), and China only a fraction (5 metric tons), for a total harvest of 49,656 metric tons. The remaining 4,250 metric tons of whiting were not allocated.

Although 2,000 metric tons of shortbelly rockfish and 9,600 metric tons of jack mackerel were available for foreign fishing in 1987, there was no interest in these fisheries.

#### *Joint Venture Fishery*

In 1987, joint venture operations involved Poland and the Soviet Union as in 1984-1986, and new participants Korea and China. About 91 percent (105,997 metric tons) of the 116,250 metric tons available for joint venture processing was taken in 1987, a 30 percent increase in tonnage since 1986 and the highest amount on record. A total of 30 foreign processing vessels received whiting from 30 U.S. trawlers, the highest numbers on record; the next highest year was 1986 when 24 foreign processing vessels received whiting from 25 U.S. trawlers.

Although 5,000 metric tons of shortbelly rockfish were available for joint venture processing in 1987, there was no interest in this fishery.

#### *Enforcement Activities*

The U.S. Coast Guard and special agents of the National Marine Fisheries Service spent a total of 176 patrol days and 23 aircraft days to monitor compliance with the foreign fishing regulations. A total of 69 boarding inspections of foreign vessels were conducted with 16 violations confirmed in the 1987 fishery.

#### ALASKA

The report of foreign fishing activities off Alaska are not available.

(NOTE: The species amounts in this section combine reports from foreign vessels and the National Marine Fisheries Service foreign fishing observers, and are preliminary. Consequently, the amounts given here may not be identical with those provided by a foreign nation or joint venture company.)

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