



*39th Annual Report of the*

**PACIFIC  
MARINE FISHERIES  
COMMISSION**

FOR THE YEAR 1986

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

39th Annual Report  
of the  
**PACIFIC MARINE  
FISHERIES COMMISSION**  
FOR THE YEAR 1986

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 91st Congresses of the United States Assenting Thereto.

Respectfully submitted,  
PACIFIC MARINE FISHERIES COMMISSION

OFFICERS OF THE COMMISSION

Chairman	John Donaldson, Director, ODFW
1 st Vice Chairman	Jack Parnell, Director, CDFG
2nd Vice Chairman	Jerry Conley, Director, IDFG
3rd Vice Chairman	Bill Wilkerson, Director, WDF
Secretary	Don Collinsworth, Commissioner, ADFG

LAWRENCE D. SIX, Executive Director

Headquarters  
2000 S.W. First Avenue, Suite 170  
Portland, Oregon 97201-5346

Russell G. Porter  
EDITOR  
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# 39th ANNUAL REPORT-1986

## ANNUAL MEETING EVENTS

### SUMMARY

The Pacific Marine Fisheries Commission's 39th Annual Meeting was held on October 21-22, 1986 at the Embarcadero Resort Hotel and Marina in Newport, Oregon. It was presided over by Chairman Jack Donaldson, Director, Oregon Department of Fish and Wildlife. The Annual Meeting highlights included a detailed report by the Executive Director on the functions and work of the Commission, discussion and approval by the Commission of a number of 1986 issues, a discussion by the Commission of the future of PMFC and the selection of issue topics for 1987.

### EXECUTIVE DIRECTOR'S REPORT

This year's report is designed to give a more detailed description of the various activities of the Commission. It is a general review of the programs in which the Commission is involved on an annual basis with specific details addressing the period October 1985 through September 1986. The general categories covered include: PMFC's budget, revenue and staffing; fishery issues; federal appropriations; federal legislation; fishery data projects and contract services; external activities; and other PMFC activities. **PMFC Budget, Revenue and Staffing**

For the most recently completed fiscal year, July 1, 1985 to June 30, 1986, the Commission's budget was approxi-

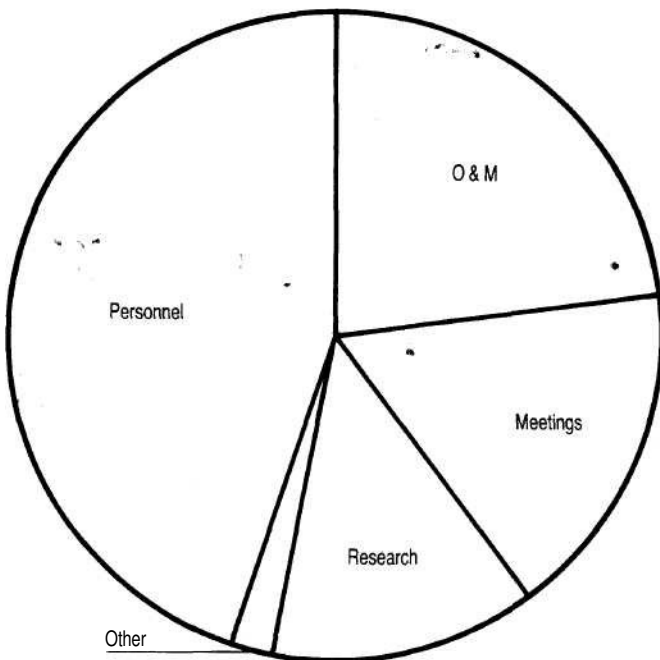
mately \$360,000, not including external contracts (Figure 1). New revenue for the year totalled about \$346,000 from two principal sources: State contributions (31%) and indirect cost charges on external contracts (66%). In addition to new revenue, there was about \$299,000 in carryover from the previous fiscal year. The largest share of the revenue comes from indirect cost charges on external contracts (Figure 1). PMFC charges 14% on contracts to support its contract management operations, including PMFC Staff who perform functions in support of these contracts. This is the lowest overhead rate on the Pacific Coast, because the Commission's contract operation is small and efficient. This competitive rate makes PMFC an attractive contracting entity.

Contributions of the five member States were \$106,000 for FY 1985-86, and have been at this level for a decade. These funds are used largely for matching funds for research projects and for meetings. Contributions by State were as follows:

Alaska	\$ 30,600
California	25,300
Idaho	5,300
Oregon	22,100
Washington	22,700
TOTAL	\$106,000

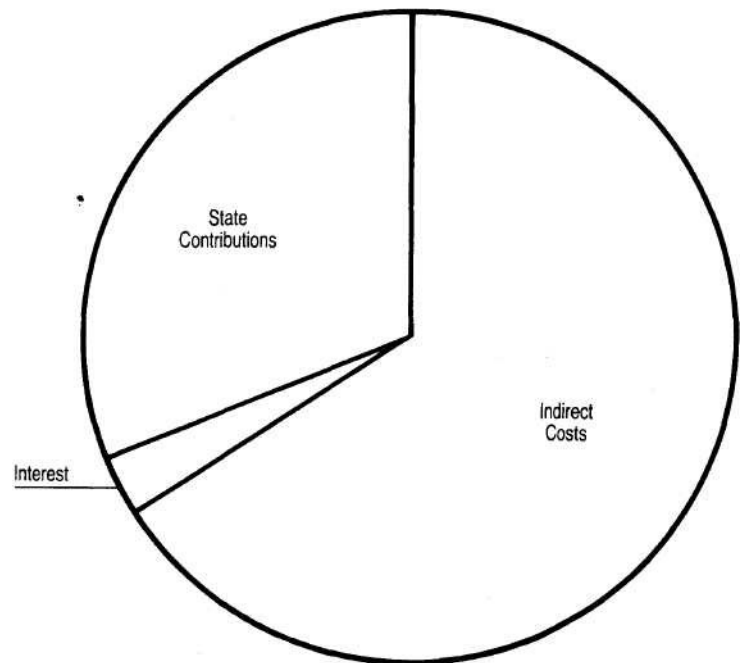
### PMFC BUDGET

July 1, 1985-June 30, 1986



Personnel	\$162,000	45%
O & M	83,000	23
Meetings	61,000	17
Research	48,000	13
Other	6,000	2
	<u>\$360,000</u>	<u>100%</u>

### PMFC REVENUE



State Contributions	\$106,000	31%
Indirect Costs	229,000	66
Interest	11,000	3
	<u>\$346,000</u>	<u>100%</u>

(plus carry over of \$299,000)

Figure 1. Pacific Marine Fisheries Commission budget and sources of revenue for fiscal year 1985-86. (Not including external contracts).

For the current fiscal year (1986-87), the State of Alaska has not contributed funds to the Commission and did not participate in the Annual Meeting in 1986. Alaska is considering withdrawal from the Compact for financial reasons. Notice of withdrawal has not been received as of this writing. A State may unilaterally withdraw from PMFC six months after giving notice. [Editor's Note: In April, Alaska was able to resolve its financial situation and contributed funds to the Commission. Alaska's contribution was reduced to \$20,000 reflecting the fact that they were unable to participate in the 1986 Annual Meeting.] As Figure 1 graphically demonstrates, personnel costs are the largest single portion of the PMFC budget. With the exception of the Executive Director and Treasurer (the two staff officers specifically authorized by the PMFC Rules and Regulations), the number and kind of staff employed are a direct result of the amount and nature of contract activity. Since the Commission's contract load is fairly heavy, we have needed a fairly large staff to perform the required contract functions of budgeting, reporting, accounting, payroll, etc. If contract activity were eliminated, we would probably retain only an Executive Director, part-time Treasurer and part-time Secretary. There currently are seven permanent staff positions in the Headquarters Office in Portland. These are:

1. Executive Director
2. Assistant to the Director
3. Treasurer (part-time, approx. 20%)
4. Manager, Regional Mark Processing Center
5. Administrative Assistant
6. Personnel Assistant
7. Secretary

This staff is largely supported by external funds either as direct or indirect charges to contracts. At little cost to the States, the Commission is able to employ a viable, effective staff to address Commission activities.

The external contracts amounted to about \$3.2 million in FY 1985-86 (Figure 2), and are largely for collection, analysis and reporting of domestic fishery data. The largest share of these funds (54%) goes to support State fishery data programs so that the States can provide timely and adequate data for regional fishery management of coastwide species, particularly salmon and groundfish. In the Pacific area, the States historically have been responsible for collection of domestic fishery data, and the National Marine Fisheries Service (NMFS) and the Councils have relied on the States to continue to do so under the Magnuson Fishery Conservation and Management Act. The Federal Government therefore provides assistance to the States and PMFC to meet Federal obligations under the Act. On the Atlantic and Gulf coasts, this function is performed largely by NMFS internally.

These contract activities are described in more detail later in this report under the heading "Fishery Data Projects and Contract Services."

It is important to emphasize that these are not discretionary funds to be allocated as the Commission sees fit. These are Federal dollars that have been allocated by the Federal agencies for specific purposes, and the Commission has been asked to provide contract services. Contract services include preparing proposals for funding, progress reports and financial statements; overseeing expenditures to make sure that they meet Federal regulations; hiring biologists and samplers, and handling payroll; and in some instances, direct involvement in the project.

In some cases, the Commission passes the funds directly through to the States, in which case it does not charge overhead. In others, the Commission has the responsibility for the project and hires personnel on its payroll to assist the States. For these contracts, a charge of 14% of all costs, except subcontracts and equipment is made. These charges finance the contract services operation.

PMFC is a logical organization to provide these services because it can accept funds from any source, it has the fiscal

expertise and a proven track record, and it has a low indirect cost rate or "overhead."

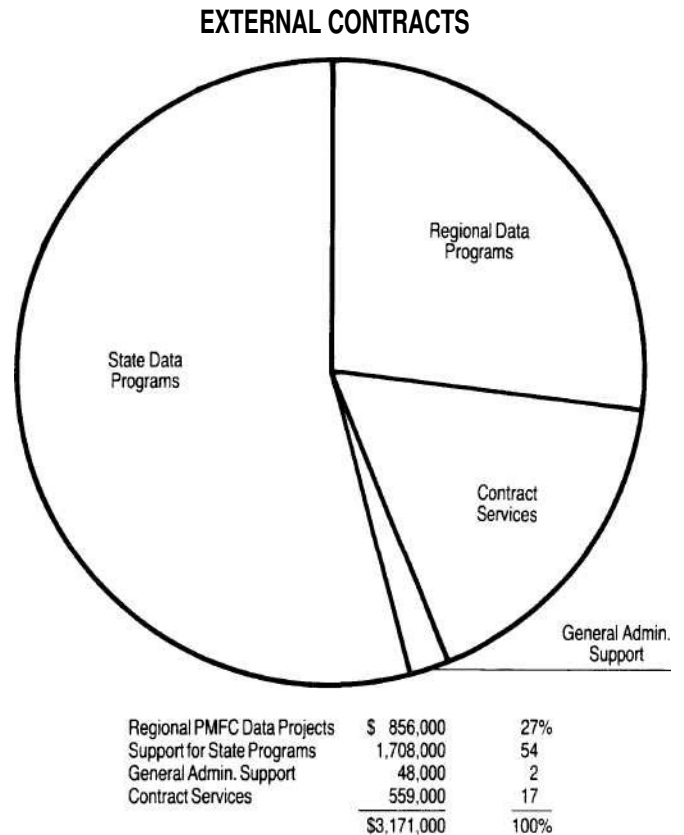


Figure 2. External contracts of the Pacific Marine Fisheries Commission for fiscal year 1985-86.

### Fishery Issues

The Commission addresses a variety of issues each year that the constituents have raised. These are grass-roots issues which are addressed through the Advisory Committee structure and acted on at the Annual Meeting. The Annual Meeting is largely a forum for addressing the concerns of sport and commercial fishing interests. There are seven Advisors from each of the four coastal States and three from Idaho, for a total of 31. They are appointed for two-year terms on January 1 of each odd year. These individuals have been very effective at garnering Commission support for their recommendations. The Commission has addressed a wide variety of issues. Essentially, there is no limit to the number and kinds of fishery issues that have been addressed. This characteristic, along with its coastwide representation, has made the Commission an attractive forum for the constituents to express their concerns.

In 1986, the Commission staff worked on a number of important issues:

#### 1. Fishing Vessel Insurance

An ad hoc committee of Advisors and experts from all of the member States was appointed to prepare an issue paper on the problem of marine insurance, including recommendations for Commission action. The Committee prepared a document addressing the liability problem and recommending that the Commission support an amendment to the Jones Act limiting liability of vessel owners. The Committee recommended and the Commission adopted the following position: in the event of a crewman injury, liability should be limited to lost wages only, as long as the owner pays for maintenance and cure. This provision was embodied in H.R. 4415 introduced by Congressman Studds. The Commission's recommendation was transmitted to Congress and presented as testimony at a regional hearing in Seattle. Subsequently,

additional bills were introduced in the House and Senate which prohibited suing for temporary injuries as long as the vessel owner paid full cure, and maintenance of 80% of wages or \$11,000, whichever is greater. For permanent injuries or death, liability would be limited to \$500,000 per incident, unless gross negligence or willful misconduct were proven. This was an attempt at a compromise between the Studts approach and those Congressmen opposed to liability limitations. The House Bill, H.R. 5013, was soundly defeated on August 13, 1986 under a suspension of the rules, primarily because of heavy opposition by the Trial Lawyers Association. There is still interest on the part of some members of Congress to re-introduce a bill in the new Congress in 1987. The Commission and the fishing industry will be actively seeking passage of such legislation.

In a related action, the Congress did pass legislation in 1986 which will facilitate the formation of self-insurance pools by a wide variety of groups with liability problems, including vessel owners. Insurance pools have been and are being used in the fishing industry for hull insurance, mostly in the State of Washington where such pools have been legal. This Federal legislation apparently will prevent States from barring the formation of such pools, but still provides for State control over the activity.

## 2. Interceptions of North American Fishery Resources

This issue of high seas interceptions of domestic fishery resources was introduced at the 1985 Annual Meeting in Juneau by the Advisory Committee. The Commission took the following action at that meeting:

The Commission directed the Staff to support efforts to eliminate high seas interception of North American fishery resources by foreign nations, and to gather information on interceptions and disseminate such information to affected parties. The Executive Director was instructed to write a letter to the State Department recommending elimination of Japanese high seas interception of North American salmonids, in advance of the bilateral discussion scheduled for October. (From minutes of the October 1985 meeting.)

At the April 1986 interim meeting, the Commission decided to request appropriations by Congress to conduct the necessary research to implement the recent U.S./Japan agreement.

1. On October 8, 1985, the Commission's position on interceptions was sent to the Secretary of State, the Pacific States Congressional delegations and key Congressional Committee Chairmen.
2. On October 28 and November 26, letters were sent to INPFC stating the Commission's position and requesting information on the status of interceptions and evidence of progress in reducing them.
3. On March 19, 1986, 10 documents were distributed on the subject of interceptions to the Advisors per their request at the Annual Meeting.
4. On April 26, 1986, letters were sent to the Department of State and the Pacific States Congressional delegations requesting appropriations of \$80,000 in FY 1986 and \$400,000 in FY 1987 for research programs included in the U.S./Japan agreement which are aimed at refining estimates of interceptions. A U.S. enforcement presence in the eastern part of the landbased fishing area was also requested.
5. On May 5, 1986, the Commission staff met with House Appropriations Staff to argue for funding of important Federal programs, including interception research.
6. On July 21, 1986, reminders were sent to key Senators and the Senate Appropriations Staff on the need for funds for interception research.

7. On August 25, a list of additional publications available on the subject of interceptions was distributed to the Advisors.

State Department and Congressional responses on these issues were as follows:

**Elimination of Interceptions:** The Department of State reached agreement with Japan on March 8, 1986, but the agreement did not eliminate interceptions. It provides for a phase out of the mothership fishery in the Bering Sea by 1994 and a one degree movement westward of the landbased fishery beginning in 1986. It also calls for increased enforcement and more research on the origin of salmon caught in the landbased fishery, which may form the basis of additional future restrictions on the landbased fishery. Renegotiations are scheduled for 1990.

**Appropriations and Enforcement:** The Congress approved funding for interception research in FY 1987 by providing \$250,000 for Yukon River chinook salmon studies and \$150,000 for two observers on Japanese research vessels.

With regard to enforcement, the Coast Guard did agree to place a high endurance cutter on the eastern boundary line for the landbased Japanese salmon fleet.

## 3. Others

Six additional issues were addressed by the PMFC staff in 1986. These were 1985 Annual Meeting issues which required additional attention during 1986. They included U.S. Navy/fishing conflicts, full domestic utilization of U.S. fishery resources, total economic contribution of Pacific fisheries, interjurisdictional fisheries management, salmonid hooking mortality studies, and effort management. These issues and the actions taken are discussed in the "Administrative Reports and Actions" section of this report—pages 9 to 10.

## Federal Appropriations

The Executive Director spends a considerable amount of time each year, along with his colleagues from the Gulf and Atlantic Commissions, to lobby for maintenance of Federal funding for fishery programs of importance to the States and industry. Each year in this Administration, the President's budget has recommended deep cuts (about 40%) in the National Marine Fisheries Service (NMFS) budget. Many of the programs of importance to the Commission and its member States are in the NMFS budget. Fortunately, the Congress again restored most of these cuts for FY 1987. Table 1 demonstrates that Congressional appropriations for major programs were similar to that requested by PMFC. The Anadromous Fish and Commercial Fisheries grant programs received fewer dollars than last year, but overall funding was much greater than anticipated.

Table 1. Federal fishery appropriations of importance to the Pacific Coast, FY 1987 (dollars in millions).

Program	FY1986 Available	FY 1987	
		PMFC Recommendation	Approved by Congress
<b>Anadromous Fish Grants</b>			
NMFS	3.3	3.5	3.0
FWS	2.0	4.0	2.0
<b>Commercial Fish Grants</b>	4.3	4.5	4.0
Resource Surveys	14.9	14.6	14.8
West Coast Groundfish Research	0.9	0.9	0.9
Pacific Salmon Treaty	13.0	13.0	13.0
Fishery Statistics	8.9	9.0	9.0
Regional Councils	7.2	8.0	7.7
Columbia River Hatcheries	8.3	8.3	8.3
Habitat Conservation	5.3	5.3	5.1
U.S./Japan Salmon Research	0	0.4	0.4
S-K Grants	8.0	8.0	7.4

## Federal Legislation

In addition to dedicating time to appropriations, the Commission staff monitors all fishery-related legislation in the Congress on a continuing basis and informs the PMFC family of important Congressional actions and pending actions. As appropriate and when directed, the Commission staff comments on bills from a coastwide perspective. Some of the major Congressional actions of 1986 affecting marine fisheries are briefly described below.

### 1. Magnuson Fishery Conservation and Management Act

The President signed in November 1986 a package of fishery bills, including extension and amendment of the Magnuson Act through FY 1989. The major Magnuson Act amendments include:

- a. health and safety standards for U.S. observers on foreign fishing vessels must be followed;
- b. Council members must be knowledgeable and experienced, and the Secretary of Commerce must ensure that the active participants in the fisheries being managed are fairly represented on the Councils;
- c. each appointed Council member must disclose his or her financial interest in the fisheries being managed;
- d. Councils may comment on State or Federal actions affecting fish habitat;
- e. management plans must consider and may provide for temporary adjustments to regulations because of weather and safety;
- f. plans must include information on habitat; and
- g. Secretarial review of Council plans is streamlined.

### 2. Seafood Marketing Councils

As part of the same package, the President also signed into law the Fish and Seafood Promotion Act of 1986. This Act establishes a National Fish and Seafood Promotional Council comprised of regional representation and funded by Salt-stall-Kennedy Act receipts. The National Council is directed to prepare an annual marketing and promotion plan which is generic to all seafood.

Voluntary regional councils for promoting one or more species may be established by application to the Secretary of Commerce and referendum of the participants. These councils are funded by industry assessments.

### 3. Interjurisdictional Fisheries Research

The Interjurisdictional Fisheries Act of 1986 also was a part of the omnibus fish package in 1986. This Act repeals the Commercial Fisheries Research and Development Act of 1964, which provided grants to States. The new Act requires States to conduct research projects in support of management of interjurisdictional fisheries.

### 4. Anadromous Fish Grants

The Anadromous Fish Conservation Act was extended without change through FY 1989. This program provides Federal matching funds for non-Federal entities to conduct research on anadromous fishes.

### 5. Marine Mammals

The Marine Mammal Protection Act and the Endangered Species Act were amended to allow the incidental taking of depleted marine mammals under certain conditions.

### 6. Liability and Safety

The Commercial Fishing Vessel Liability and Safety bill was defeated soundly in the House of Representatives in August 1986 under a suspension of the rules. This bill would have limited liability of a vessel owner with the aim of reducing insurance premiums over the long term. This bill, or a modification of it, is expected to be reintroduced in the new Congress.

### 7. Klamath River Restoration

H.R. 4712 was passed by Congress and signed by the President in late 1986. This law establishes the Klamath River Fishery Management Council which makes recommendations on fishing restrictions to the various management agencies. It also establishes a 20-year restoration program and a Task Force which shall assist the Secretary of Interior in implementing the program.

## 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. We also provide 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 three major data efforts:

- Salmon and Steelhead Tag Coordination
- Pacific Fishery Information Network
- Marine Recreational Fishery Statistics Survey

*Tag Coordination:* Approximately 36 million coded-wire tags were inserted in juvenile salmon and steelhead in 1985 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 tag releases and tag recoveries 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.

During the last several years, we have made significant improvements in this data base and have pursued some major initiatives in this area. These include:

- a. significant improvement in the timeliness of final recovery data from the States;
- b. development of a preliminary recovery data base for real time use by the Pacific Fishery Management Council;
- c. development of new software to provide special reports in a more useful format;
- d. participation in a U.S./Canada forum to develop an expanded regional data base;
- e. preparation of a comprehensive report (in process) to improve the identification of stocks and thereby improve fishery management; and
- f. a major statistical analysis of the coded-wire tag data base with recommendations for improvement of study design.

*Pacific Fishery Information Network:* The Pacific Fishery Information Network, or "PacFIN," 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.

In 1986, this regional 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:

- a. commenced incorporation of a coastwide historical salmon landings data base into the PacFIN system;
- b. enhanced the Quota Species Monitoring data base which produces the Pacific Council's best estimate report for groundfish;
- c. continued work on the merger of the PMFC Groundfish Data Series into the PacFIN system; and
- d. filled requests for many special reports from the industry and agencies;

*Marine Recreational Fishery Statistics Survey:* This year marked the seventh full year of the Survey on the Pacific Coast, as well as PMFC's involvement in the project. Since the inception of the survey by the NMFS, PMFC has been responsible for the angler interview program for the Washington-Oregon-California area. In 1986, coastwide sampling continued to estimate catch by species and mode of fishing. The number of participants, fishing effort and demographic data were also collected. Three special studies were undertaken in conjunction with the Survey in 1986:

- a. estimates of catch, effort and fishing mortality for the northern California recreational abalone fishery;
- b. completion of a microcomputer program in California for regional analysis of Survey data; and
- c. catch and effort estimates for the Oregon recreational crab fishery.

The Commission submitted a bid for the 1987-89 angler intercept work on the west coast in response to a NMFS request for bids. PMFC was not the successful bidder and will not be conducting the Survey in 1987. In June of 1986, PMFC conducted a workshop on the Survey attended by agency, university and sport fishing representatives. The design of the Survey was critically reviewed by participants with the objective of maximizing utility of the sampling effort.

## **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.

The West Coast Fishery Data Collection and Analysis Project provides an example of how PMFC provides contract services to the States. For Federal fiscal year 1986, in excess of \$600,000 in NMFS funds were allocated to PMFC and then directed to eight State projects involving 242 man-months of assistance (Table 2). In the case of California, PMFC hired the necessary personnel, amounting to 93 man-months. The remainder of the FY 1986 contracts involving State projects are listed by State in Table 3. The coastwide total for all of these projects was about \$1.1 million, involving 473 man-months and 13 projects. The Federal sources of funding included the NMFS, Fish and Wildlife Service and the Bonneville Power Administration.

These State assistance projects are critical elements

of the information system required for State and Federal management of important fishery resources. They will need to be continued or the ability to make fundamental management decisions will be impaired.

## **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 1986 were:

- a. Columbia Basin Fish and Wildlife Council  
The Columbia Basin Council was created to coordinate the activities of the member agencies in the Columbia River area. State and Federal member agencies contribute funds to PMFC for employment of an Executive Secretary and for operations. In the future, this organization will be reconstituted and will include tribal membership. PMFC will continue to provide contract services.
- b. Fish Passage Center  
With funds from BPA, PMFC hires most of the staff of the Fish Passage Center, which is charged with monitoring and enhancing anadromous fish passage in the Columbia system.
- c. Enhancement Planning Team  
Pursuant to the Salmon and Steelhead Conservation and Enhancement Act, an Enhancement Planning Team was established by the State and Federal agencies in the Northwest to prepare a blueprint for future salmon and steelhead production. PMFC employed the Coordinator for this effort until January 1986.

## **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 1986 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 minimizes 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-California is a voluntary program. PMFC prints and distributes the logbooks to the fleet with funds supplied by NMFS.

## **External Activities**

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

## **1. 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



Table 2. West Coast Fishery Data Collection and Analysis Program of the Pacific Marine Fisheries Commission, FY 1986.

Project	Source	Amount	Man-months	Employer	Status
<b>Washington</b>					
Groundfish Monitoring Salmon and Groundfish Data Flow WDF	NMFS	\$ 77,881	12	WDF	Continuing
	NMFS	103,200	36	WDF	Continuing
Subtotal		\$ 181,081	48		
<b>Oregon</b>					
Groundfish Fishery Analysis	NMFS	\$ 83,038	30.5	ODFW	Continuing
Technical Assistant for FIN Ocean	NMFS	102,916	35	ODFW	Continuing
Salmon Catch Statistics ODFW	NMFS	92,746	35	ODFW	Continuing
Subtotal		\$ 278,700	100.5		
<b>California</b>					
Ocean Salmon Sampling	NMFS	\$ 60,804	34	PMFC	Continuing
Groundfish Monitoring Program	NMFS	84,556	52.4	PMFC	Continuing
Rockfish Survey Analysis	NMFS	17,219	7	PMFC	Continuing
CDFG Subtotal		\$ 162,579	93.4		
GRAND TOTAL		\$ 622,360	241.9		

Table 3. Pacific Marine Fisheries Commission contracts with State fishery agencies, FY 1986.

Project	Source	Amount	Man-months	Employer	Status
<b>Washington Department of Fisheries</b>					
Freshwater Trapping	USF&WS (304) WDF	\$ 80,471	43	PMFC	Continuing
Coast Freshwater Stock Assessment	NMFS (304) WDF	\$ 15,000	-0-	--	Continuing
Coded-Wire Tag Recovery	BPA	313,202	129	ODFW	Continuing
		11,164	6	PMFC	Continuing
		50,000	-0-	--	Questionable
Albacore Port Sampling	NMFS	\$ 420,866	155.5		
Coho Trapping and Tagging	USF&WS (DJ) WDF				
Electrophoresis	NMFS	\$ 31,500	20.5	PMFC	Continuing
	(Pacific Salmon Treaty) WDF	\$ 31,500	20.5		
Ocean Salmon Sampling	NMFS (304) WDF	\$1,072,123	473.0		
WDF Subtotal		\$ 582,307	279.0		
<b>Washington Department of Game</b>					
Coded-Wire Tag Recovery	BPA	\$ 68,950	18	WDG	Continuing
WDG Subtotal		\$ 68,950	18		
<b>Oregon Department of Fish and Wildlife</b>					
ODFW Council Support	ODFW				
Coded-Wire Tag Recovery	BPA				
Albacore Port Sampling	NMFS				
Pacific Salmon Treaty	ODFW				
ODFW Subtotal					
<b>California Department of Fish &amp; Game</b>					
Albacore Port Sampling	NMFS				
CDFG Subtotal					
GRAND TOTAL					

participation on these forums. With some of these funds, PMFC contracts with ex-PMFC Director John Harville to sit on the North Pacific Council, freeing up the Executive Director's time to concentrate on Commission activities and Pacific Council membership. During 1986, 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 two PMFC representatives are very active in Council affairs and devote substantial time to this important process.

## 2. 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 on this Committee.

## 3. Canada-U.S. Groundfish

The Executive Director serves as the U.S. member on the Canada-United States Groundfish Committee. Established in 1959, the Committee meets annually to discuss and recommend research and management activities of mutual concern for transboundary species of groundfish. A large Technical Subcommittee of State, Federal and Canadian scientists advises the Committee. 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.

## 4. IAFWA

The Executive Director represents the Commission on several committees of the International Association of Fish and Wildlife Agencies. PMFC has been fairly 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.

## Other Activities

The following additional activities<sup>1</sup> were conducted in 1986:

1. The Executive Director attended a meeting of the Pacific Fisheries Legislative Task Force in Lewiston, Idaho on June 28, 1986.
2. The Director participated in two panel discussions at the Marine Recreational Fishery Symposium in Tampa, Florida on May 1-2, 1986. \*
3. PMFC submitted written testimony in opposition to OCS Lease Sale 92 in Bristol Bay, Alaska.
4. PMFC supported establishment of a Coast Guard Heliport in Newport, Oregon.
5. The Director met on several occasions with State and Federal Directors concerning funding for data collection programs in support of management.
6. Staff prepared and/or published the following documents in 1986:
  - a. 1985 Annual Report and periodic Newsletters
  - b. "Status of Management of Pacific Coast Interjurisdictional Fisheries"
  - c. "Proceedings of the PMFC Marine Recreational Fishery Statistical Survey Workshop"
  - d. "A Primer on Limited Access Alternatives for the Pacific Coast Groundfish Fishery"
  - e. "Preliminary Review Draft. Volume I. Salmon and Steelhead Enhancement Plan for the Washington and Columbia River Conservation Areas"
  - f. "Cost of Research and Data Collection in Support of Pacific Fishery Management"
  - g. Coded-Wire Tag Releases through 1985

h. Salmon Mark List for 1986

i. "Proceedings of the PMFC Workshop on Salmon Shakers" j. "A Review of Hooking Mortality of Coho and Chinook

Salmon and Steelhead Trout" k. To be published: "Status of Chinook and Coho Stock Identification Efforts for Pacific Coastal Production Areas of the U.S. and Canada."

## 1986 ISSUES

*Future of PMFC.* At its 1985 Annual Meeting the Commission directed that an evaluation of PMFC be made which would review the function of the Commission, its staff, the Executive Committee, the Advisors, and the Scientists/Managers. The Commissioners, Advisors and Scientists/Managers met in working groups for a full day and discussed various options for the future of the Commission and its organization and functions. After much discussion, the Commission unanimously adopted the following:

"A modified Status Quo for the future of PMFC with certain efficiencies that should include, but not be limited to the following:

1. The Executive Committee representative for each state will be a commissioner, chosen by that state's commissioners. All Commissioners will be invited to all Executive Committee meetings and be provided agendas in advance.
2. Two in-state meetings shall be held each year; one in the spring and the other prior to the annual meeting. Each state's advisors shall select a chairman to attend the annual meeting and present that state's consensus view on issues of concern. The annual meeting agenda will be streamlined to reflect this change.
3. Selection of the new Executive Director will be made with input from all commissioners and the Commission directs the present Executive Director to commence the replacement process immediately. The new Executive Director is instructed to work towards a closer, more cost-effective relationship with the Pacific Fishery Management Council (PFMC), and the PFMC will be urged to provide the same direction to its new Executive Director.
4. The Executive Director is instructed to seriously consider relocating PMFC offices to space adjacent to the PFMC staff, and to accomplish this if feasible.
5. The Executive Director is instructed to explore methods of reducing costs and increasing efficiency by a closer working relationship with PFMC staff, when this can legally and feasibly be accomplished.
6. The Executive Committee shall oversee the development of a report detailing the cost and impact of this restructured Commission and/or its operations and shall provide copies of said report to all Commissioners and Advisors not later than September 1, 1987.
7. At the 1987 Annual Meeting, the agenda will include as a major issue, discussion of the progress to date of restructuring of PMFC; this discussion will include any further changes recommended by the member states, including the option of abolishing the compact."

*Alternative Funding Mechanisms for Research and Management Programs.* The National Marine Fisheries Service transmitted a brief report to the Commission on the status of the Federal Marine Fishing License Initiative. This proposal was a major initiative in the President's FY87 Budget submitted to Congress. At that time recreational fishermen were the target of this initiative. Congress dropped this initiative after oversight hearings. It is understood that the Administration is committed to developing draft legislation to implement a federal marine license, this time including both commercial and recreational users. This legislation is expected to be submitted to Congress in early 1987.

Representatives from NMFS discussed their report with the Commission's working teams and advised them that, "the Federal Government is committed to establishing a user fee to at least partially pay the cost of federal fisheries programs. Ideally, this program would be run in partnership with the coastal states with revenues shared in an equitable way. The program design is still an open matter, but from a federal perspective decisions must be made soon." Constructive advice was solicited from the Commission by NMFS on this program.

The Commission voted unanimously to oppose a federal fishing license and refused to provide any elements which might be acceptable to the Commission for use by NMFS in drafting a federal license initiative.

*Fishing Vessel Insurance.* The Commission reaffirmed its position on fishing vessel insurance as adopted at its April meeting (See "Executive Committee Actions," page 9). In addition they supported the concept that insurance companies should have an adequate known level of cash reserves for the insurance they write. The Commission supports the concept of Sea Grant or some other organization rewriting parts of the North Pacific Fishing Vessel Owners Association Manual on safety so that it is applicable to other vessel types. The Commission staff was directed to reaffirm the Commission's stand on this issue to the U.S. Congress.

*Interceptions of North American Fishery Resources.* The Commission expressed its support for the research and enforcement that was agreed to with Japan for North American salmonid interceptions in the squid and salmon fisheries. It also supports taking similar action regarding salmonid interceptions by Taiwan and Korea in their squid fisheries.

*On-Site Ocean Consultants.* The proposal for a panel of knowledgeable active ocean users to provide input and comment on issues that deal with the Pacific Ocean was considered by the Commission. This proposal was carried forward from last year to allow further analysis and discussion of how it would fit in with the Commission's current Advisory Panel. After redrafting of a proposal during the year and consideration of this issue in the Annual Meeting Working Committees, a report was accepted by the Commission. It was the consensus of the report that a panel of on-site ocean consultants was not necessary since the PMFC Advisory Panel already provided a means to address user needs. It was agreed that PMFC should provide more leadership and direction to the Advisors since they felt they needed more effective input. This could include the identification of issues and establishment of working committees so that the Advisors can be actively involved throughout the year. It was also agreed that PMFC should do more PR work in promoting itself in order to facilitate the efforts of the Advisors in representing the concerns of the ocean user groups.

*Pacific International Council for the Exploration of the Sea (PICES).* The Commission endorsed the concept of a new organization to promote scientific investigation and information exchange concerning the oceanography and fisheries of the northern North Pacific and Bering Sea, an organization often referred to as PICES. The Commission will urge the support for such an organization to its member state legislatures and management entities, the U.S. Congress and Secretaries' of State and Commerce.

## 1987 ISSUES

Four major issues were selected for study during the year prior to being addressed by the Commission at the 1987 Annual Meeting. They include:

*Marine Mammals.* The Marine Mammal Protection Act is up for reauthorization in 1988. Because of the conflicts between the Marine Mammal Protection Act and the Magnuson Fishery Conservation and Management Act the Commission decided to develop some suggested amendments to the Marine Mammal Protection Act for submission to Congress. The following resolution was adopted by the Commission:

"Because of occasional conflicts between the Marine Mammal Protection Act and fisheries management goals, the Pacific Marine Fisheries Commission endorses the following:

1. A more rational definition of optimum sustainable population (OSP) and maximum productivity be developed for the Marine Mammal Protection Act.
2. Appropriation by Congress of funds authorized in the Marine Mammal Protection Act for research on marine mammals by the states.
3. Making funding available to the states to be used to study selected local marine mammal populations and their interactions with fisheries. This information should be made available to the public so they can be educated as to the results.
4. A comprehensive review of the cost to society of the current act, so that changes could be made to allow appropriate entities to manage marine mammals to reduce their negative impact on sport and commercial fishing industries.
5. Development by state marine mammal scientists of an issue paper to be sent to Congress by the Commission. Rob Brown, ODFW, is appointed to form said committee of state scientists through the Commission office."

*Marine Debris.* The Commission recognizes marine debris as an issue of major concern and one that needs to be addressed without delay. However, the problem must be kept in proper perspective. This includes placing the blame fairly on each ocean user group which produces marine debris. The Commission intends to place its major emphasis on plastics and webbing. Paper, wood and iron types of debris are viewed as minor problems because of their relatively quick decomposition.

The Commission supports the National Marine Fisheries Service's efforts to explore biodegradable and photo-degradable plastic products. However, it is felt that the major effort must now be on the education of both commercial and recreational fishermen. The Commission shall establish a task force from its Advisors to help educate the various ocean user groups about marine debris.

The Commission shall address marine debris as a major issue at its 1987 Annual Meeting. The emphasis at the Annual Meeting shall be limited to the major sources of marine debris because the problem is so widespread.

*Collision at Sea.* The Commission recognizes the concern among all fishermen who fish the marine environment of the threat of at-sea collisions. The Commission established an Advisory Committee to gather information as to the magnitude of this problem and potential ways of solving it. It shall be addressed as a major issue at the 1987 Annual Meeting.

*Thresher Shark Management.* The study of the coastwide thresher shark fishery and the potential development of a management plan was adopted by the Commission as a major issue for 1987. The Commission directed the staff to seek interjurisdictional fisheries management funding from the National Marine Fisheries Service for this purpose.

# ADMINISTRATIVE REPORTS AND ACTIONS

## EXECUTIVE COMMITTEE AND COMMISSION ACTIONS

The Executive Committee met on June 2, September 16 and in conjunction with the spring Commissioners meeting on April 24, 1986 and took the following actions:

1. Approved an annual cost-of-living increase of 3% for the PMFC staff.
2. Approved a FY87 budget of \$513,929.
3. Directed the staff to prepare a 1987-89 Biennial Budget that incorporates a reduced level of PMFC programs as a cost saving measure.
4. Reaffirmed the Commission's commitment of \$5,000 for the economic assessment of Pacific Coast fisheries. The Commission staff was directed to coordinate this effort with the Pacific Fishery Management Council to avoid any duplication of effort.
5. Requested the Executive Director to work with the state pathologists to prepare a position on the banning of malachite green.
6. Approved the recommendations of the Commission's committee on fishing vessel insurance and expressed support for H.R. 4415 on this issue. The PMFC staff was directed to prepare appropriate testimony to the U.S. Congress in support of H.R. 4415.
7. Voted to maintain the State contribution to PMFC at their current level and, because of a possible withdrawal from the compact by the State of Alaska, to significantly reduce meeting costs by a reduced attendance of Advisors and scientists.

## TREASURER'S REPORT

The Treasurer, Gerald L. Fisher, prepared the Report of Receipts and Disbursements for the period September 1, 1985 to September 1, 1986 for the Annual Meeting in Newport, Oregon (see Appendix I—Financial and Audit Reports). Receipts were: (1) members States' contributions of \$50,100 (subsequently California's contribution of \$25,300 was received September 8, 1986 with Alaska's \$30,600 still due for Fiscal Year 1987); (2) external contract payments of \$3,031,124; and (3) interest income and refunds of \$12,914. Disbursements were: (1) PMFC direct of \$84,317; (2) PMFC indirect" of \$248,081; and (3) external contracts' direct of \$2,727,905. The audit report for the fiscal year ending June 30, 1986 found the financial records of the Commission to be in satisfactory condition.

## UPDATE OF ACTIONS TAKEN ON 1985 ISSUES

### 1. Navy/Fishing Conflicts

The issue of U.S. Navy/fishery conflicts was introduced at the 1985 Annual Meeting by the Advisory Committee. The Navy had recently closed the south side of Santa Cruz Island (southern California) to commercial and recreational fishing for research purposes, and this action caused a significant displacement of vessels and created concern on the part of fishermen from the area. The Commission took the following action:

So that this problem does not reoccur elsewhere and jeopardize other user groups, the Commission directed the staff to investigate channels of communication for persons or departments (political or public relations) within the U.S. Navy or Congress, with whom we could negotiate to prevent or mitigate these arbitrary closures of productive fishing or recreational areas by the Navy.

The staff took the following actions in response to this directive:

1. During late 1985 and throughout 1986, the staff communicated with the administrative offices of the Navy bases in Seattle and Long Beach and the Secretary of the Navy in Washington, D.C. They were informed of the concern for closures without adequate discussion and input from the industry, and of the need to establish a line of communication and notification for the future.
2. A reply was received from the Director of Program Planning, Office of the Chief of Naval Operations that the Navy does not maintain lists for notification of impending closures. They suggested the Commission subscribe to the "Notice to Mariners," which announces closures 30 days in advance.
3. Letters were sent to the Commander-in-Chief of the Pacific Fleet and the Commander of the Naval Logistics Command requesting a means of receiving prior notification of intended closures that affect fishing areas so that input from industry can be received before decisions on closures are made.
4. The staff also sent letters to Senator Pete Wilson (CA) and Congressman Ronald Dellums (CA), Robert Badham (CA) and Duncan Hunter (CA), all members of their respective Armed Services Committees, asking for their support of our efforts.
5. A reply was received from the Public Affairs Officer of the Pacific Missile Test Center that the Navy could not include us in any advanced planning, because it would compromise security. He assured the Commission that the Navy would work closely with fishermen and provide timely information on closures and would only close areas when absolutely necessary.

There needs to be a mechanism for notifying interested parties before decisions are made, as opposed to announcements of closures once they are set. The "Notice to Mariners" announcements list planned closures, and in some cases have allowed for public discussions regarding them, but allow no real input in the planning stages. The confidentiality of the studies taking place in the closed areas in most cases is probably the reason for this procedure. Efforts to receive notification so that input can be made at the planning stages continue, with the focus on Congress. Given past experience with attempting to receive some cooperation from the Navy, little hope remains for major concessions on this issue.

### 2. Full Domestic Utilization of U.S. Fishery Resources

At the 1985 meeting, the Commission adopted a resolution by a split vote of 3-2, reaffirming its support for a foreign fishing phase-out by 1990, and recommending that joint ventures be limited in order to provide the optimal climate for increasing domestic processing of underutilized U.S. fishery resources. Washington and Oregon voted against the resolution, because of their concern over possible adverse impacts on domestic joint venture fishermen. The resolution was distributed to Congress immediately after the October 1985 meeting, and in particular was directed to Senators Gorton (WA) and Stevens (AK), who at the time were working on foreign phase-out language for the Magnuson Act amendment package. The lack of unanimous support from the Commission on this issue is indicative of industry sentiments. There was and continues to be lack of industry consensus on this issue and therefore no Congressional action to date. A phase-out was *not* included in the amendment package passed by Congress and signed by the President in late 1986.

### 3. Economic Contribution of Pacific Fisheries

In 1985, the Commission and California Sea Grant funded an analysis of the impact of recent changes in the southern California tuna industry. The report documents the substantial economic impact of this fishery, and it stimulated the Commission to recommend that the economic contribution of the major commercial and recreational fisheries of the Pacific Coast be documented. Recent work funded by the National Marine Fisheries Service, through the Saltonstall-Kennedy grant program, will result in the development of a model which will calculate these economic statistics for the Washington, Oregon and northern California areas. A proposal to conduct the work in southern California was not funded for 1987, therefore the Commission will pursue alternative funding for this segment.

### 4. Interjurisdictional Fishery Management

Interjurisdictional fisheries are those which harvest resources that range throughout the waters of two or more States or in both State and Federal waters. Some of these fisheries are managed pursuant to Federal law (Magnuson Act) or international treaty, while others are managed by individual States or Indian Tribes. Most of the important marine fisheries of the Nation are interjurisdictional. In response to Congressional and Administrative concern over the adequacy of management of some of these fisheries, the Commission prepared a document entitled "Status of Management of Pacific Coast Interjurisdictional Fisheries." This document describes all of the interjurisdictional fisheries requiring coordinated regulation off Alaska, and off Washington- Oregon and California. The report concludes that no new institutions or laws are required to manage these fisheries in the Pacific area. A key concern, however, is a stable and adequate funding arrangement for fishery data collection programs required to manage these fisheries. This is particularly important for the fisheries under Federal jurisdiction. Maintenance of Federal assistance to the States for these projects has required substantial time of the Executive Director each year, yet support is eroding. An alternative funding arrangement is necessary and will be explored in the near future.

### 5. Hooking Mortality in Ocean Salmon Fisheries

At the 1985 meeting, the PMFC Scientific Committee conducted a workshop on hook-and-release mortality in the ocean sport and commercial salmon fisheries. Estimates of hooking mortality have been obtained in numerous studies throughout the years, but there is a wide range of estimates, and scientists are critical of the experimental design, of most of these studies. Yet this is an important statistic used in the management of the ocean salmon fisheries. At the one-day PMFC workshop, it was recommended that participants:

- a. standardize assessments of hook and release statistics;
- b. conduct a sensitivity analysis of the potential errors in estimating mortality; and
- c. conduct a formal 2-3 day workshop on the subject.

The Commission recommended that the Pacific Salmon Commission (U.S./Canada) conduct the formal workshop.

Also, PMFC contracted with two Oregon State University scientists to conduct a review of the literature on this subject. They concluded that little experimentation has been done since 1972, that estimates range widely, and that the studies have serious limitations. In particular, a better estimate of delayed mortality is needed.

### 6. Effort Management

The Commission reaffirmed its position to remain neutral on the subject of limited access to fisheries, but recommended that PMFC serve as a clearinghouse for information on the broad subject of effort management. In 1986, the Commission developed a bibliography of limited entry publications. A summary report of the analysis of limited access

alternatives for the west coast groundfish fishery was published and distributed.

### 7. Regional On-Site Ocean Consultants

A new draft of this issue was presented to the Commission at their spring meeting (April, 1986) as directed at the 1985 Annual Meeting. After discussion at the April meeting, the Commission requested that a final draft be prepared for consideration at the 1987 Annual Meeting in October. The final action on this issue taken at the 1986 Annual Meeting is reported upon under the "1986 Issues" section of "Annual Meeting Events" on page 8 of this report.

## 1987 ANNUAL MEETING

The 1987 Annual Meeting of the Commission will be held in the Southern California area in October.

The Commission chairman elected for 1987 is the Honorable Gerald Felando, California State Assemblyman.

## PERSONNEL

### COMMISSIONERS

The following were Commissioners during all or part of 1986:

#### Alaska

Mr. Don Collinsworth, Juneau —Secretary  
Honorable Richard Eliason, Sitka Pete Isleib, Juneau

#### California

Bob Fletcher, Sacramento— 1st Vice Chairman  
Honorable Gerald Felando, Sacramento Donald Hansen, Dana Point

#### Idaho

Jerry Conley, Boise —2nd Vice Chairman  
Fred Christensen, Nampa Richard Hansen, Bayview

#### Oregon

John R. Donaldson, Portland—Chairman  
Don Christensen, Newport Phillip W. Schneider, Portland

#### Washington

Bill Wilkerson, Olympia —3rd Vice Chairman  
Honorable Brad Owen, Olympia "Robert Alverson, Seattle

### COORDINATORS

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

#### Alaska

Guy Thornburgh, Deputy Director, Commercial Fisheries Division, Alaska Department of Fish and Game

#### California

Mel Odemar, Assistant Chief, Inland Fisheries Division, California Department of Fish and Game

#### Idaho

Dave Hansen, Bureau of Fisheries, Idaho Department of Fish and Game

#### Oregon

Kirk Beiningen, Executive Assistant, Oregon Department of Fish and Wildlife

#### Washington

Curt Smith, Washington Department of Fisheries

**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 1986:

**Alaska**

Bob Blake, Cordova John  
 Garner, Juneau Paul  
 Gronholdt, Sand Point Ole  
 Harder, Kodiak Jack  
 Lechner, Kodiak Larry  
 Powell, Yakutat Bruce  
 Wallace, Ketchikan

**California**

Frank Mason, San Diego Carl  
 Nettleton, San Diego Charles  
 "Buzz" Platt, Fort Bragg Robert  
 Ross, Sacramento Jerry Thomas,  
 Fields Landing Roger Thomas,  
 Sausilito Tony West, San Pedro

**Idaho**

Norm Guth, Salmon Louis  
 Racine, Pocatello Keith  
 Stonebraker, Lewiston

**Oregon**

Joe Easley, Astoria Allan  
 Fleming, Garibaldi Herb  
 Goblirsch, Newport John  
 Marincovich, Astoria Henry  
 Pavelek, Albany Jay  
 Rasmussen, Newport Frank  
 Warrens, Portland

**Washington**

Phillip Anderson, Westport  
 Barry Collier, Seattle Rudy  
 Petersen, Seattle Richard  
 Powell, Longview Art Statt,  
 Seattle Terry Wright,  
 Olympia Rob Zuanich,  
 Seattle

**APPENDIX I-FINANCIAL AND AUDIT REPORTS**

**1986 Financial Statement**

The Commission receives its financial support from legislative appropriations made in accordance with Article X of the Interstate Compact (creating the Commission) in which the signatory States have agreed to make available annual funds for the support of the Commission as follows: eighty percent (80%) of the annual budget is shared equally by those member States having as a boundary the Pacific Ocean; and five percent (5%) of the annual budget is contributed by each other member State. The balance of the annual budget is shared by those member States having as a boundary the Pacific Ocean, in proportion to the primary market value of the products of their commercial fisheries on the basis of the latest 5-year catch records.

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

September 1, 1985 to September 1, 1986

CASy BALANCE September 1, 1985 \$ 186,555

**RECEIPTS**

Contributions by Member States:

California (FY1987 Contribution of \$25,300, received 9/8/86) \$ 5,300  
 Idaho (FY 1987) 5,300  
 Oregon (FY 1986, FY 1987 Contribution received 9/2/86) 22,110  
 Washington (FY 1987) 22,700 \$ 50,100

External Contracts: National Marine Fisheries Service

1,580,293  
 Bonneville Power Administration 905,227  
 Washington Department of Fisheries 449,130  
 Oregon Department of Fish & Wildlife 25,726  
 U.S. Fish & Wildlife Service 19,526

Oregon State University 14,748  
 North Pacific Fishery Management Council 19,737  
 Pacific Fishery Management Council v 4,737  
 Montana Dept. of Fish, Wildlife & Parks 4,000  
 Idaho Dept. of Fish & Game 4,000  
 Washington Department of Game 4,000 3,031,124

Other:

Interest \$ 10,244  
 Refunds 2,670 12,914

«Total Receipts \$3,094,138

**EXPENDITURES:**

PMFC Direct Expenses \$ 84,317  
 PMFC Indirect Expenses 248,081 332,398

External Contracts

Direct Costs:

National Marine Fisheries Service—  
 Admin. Support of State-Federal Programs \$ 12,993  
 WC Fishery Data Collection & Analysis 620,707  
 SSCEA Enhancement Coordination 81,555  
 Regional Mark Processing Center 85,869  
 Albacore Logbook & Port Sampling 39,803  
 Marine Recreational Fisheries Survey 476,697  
 Col. R. Fish Marking for Smolt Monitoring 93,145 1,410,769

Washington Dept. of

**Fisheries:**

Freshwater Trapping & Data Summarization	\$ 83,721	
Coastal Stock Assessment	32,112	
Coho Tagging & Trapping	115,124	
Ocean Salmon Sampling & Data Summarization	140,570	
Processing Salmon Electrophoretic Sampling	32,700	
Bogachiel R. Fed-Fry Evaluation	<u>3,577</u>	407,804

**Bonneville Power Administration:**

Water Budget Center	\$ 160,952	
Coded-Wire Tag Recovery	546,122	
Fish Passage Center	<u>106,051</u>	813,125

**Oregon Dept. of Fish & Wildlife:**

Council Liaison Travel and Acquisition of Computer Equipment for Pac. Salmon Treaty Implementation		16,463
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**Pacific & North Pacific Councils Support for PMFC's Participation**

		15,353
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**Oregon State University:**

Natl. Coastal Res. & Dev. Institute Admin. Support		6,017
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**Southern California Edison Co. Pendleton Artificial Reef Project**

		2,543
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**NMFS, USFWS, & 5 State Fisheries Agencies:**

Col. Basin Fish & Wildlife Council Support		<u>55,831</u>
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Total Expenditures 3,060,304

**Cash Balance**

September 1, 1986 \$ 220,389

**Add Receivables**

from External Contracts \$ 108,890

**PMFC's Current Assets @**

September 1, 1986 \$ 329,279

\$3,389,583

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

October 30, 1986

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, 1986, and the related statements of revenues collected and expenditures, charges and 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, 1986, 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

**BALANCE SHEET JUNE 30, 1986**

	General Fund	Property Fund	Unemployment Fund
<b>CURRENT ASSETS</b>			
Cash on hand and in banks	\$ 57,170		\$ 6,630
Receivables:			
Due from Washington Department of Fisheries—Coho Trapping	37,570		
—Freshwater Trapping	46,187		
—Ocean Salmon Sampling	49,855		
—Electrophoretic Sampling	5,893		
—Coastal Stock Assessment	3,705		
—Bogachiel River Fry Study	2,306		
—Salmon Sample Catches	1,601		
—Electrophoretic Sampling	43		
* Sampling	490		
Due from National Oceanic and Atmospheric Administration			
—Contract #86-ABH-00004	2,182		
—Contract #86-ABH-00015	70,849		
—Contract #86-ABH-00009	3,308		
—Contract #85-ABH-00042	3,256		
—Contract #85-ABD-00107	902		
—Contract #83-ABD-00017	8,803		
—Contract #84-ABC-00211	2,721		
—Contract #85-ABH-00008	1,438		
Due from Oregon Department of Fish and Wildlife			
—Council Support	6,240		
—Computer Hardware	7,182		
Due from Bonneville Power Administration			
—Smolt Monitoring	3,527		
—Water Budget Manager	3,092		
—Salmonid Coded-Wire Tag	2,389		
Due from Pacific Fishery Management Council/North Pacific Fishery Management Council—Regional Liaison			6,575

Due from Southern California			
Edison	121		
Prepaid expense	975		
<b>FIXED ASSETS</b>			
Investment in furniture and equipment		<u>\$365,996</u>	
Total assets	<u>\$328,380</u>	<u>\$365,996</u>	<u>\$ 6,630</u>
<b>LIABILITIES</b>			
Accrued liabilities	\$ 15,650		\$ 922
Withheld payroll taxes	1,353		
Reserved for accrued leave	2,172		

Unexpended grant funds:			
National Oceanic and Atmospheric Administration			
–Contract #85-ABC-00115	18,344		
–Contract #84-ABH-00034	4,757		
Washington Department of Fisheries			
–Coastal Trapping	467		
North Pacific Fishery Management Council			
–Columbia Basin	14,802		
Total liabilities	57,545		922
<b>FUND BALANCES</b>	<u>270,835</u>	<u>365,996</u>	<u>5,708</u>
Total liabilities and fund balances	<u>\$328,380</u>	<u>\$365,996</u>	<u>\$ 6,630</u>

## APPENDIX 2-PACIFIC COAST FISHERY REVIEW REPORTS

### ALBACORE FISHERY IN 1985

The 1986 albacore landings by U.S. vessels into Pacific coast states is estimated at 11,341,000 pounds. This is the lowest amount recorded in the fishery since 1937 and is only 29% of the 25-year average. California landings were 32% of the 25-year average, Oregon 20%, and Washington 43%. The probable cause for the decline was the low effort brought on by poor markets and low prices.

#### California

The first landings of the 1986 albacore season occurred in late June and early July, when boats from the mid-Pacific unloaded at California ports. Most of these boats had been fishing north of the Hawaiian Islands for two months and landed approximately 15 to 30 tons each. Fish averaged 16 pounds, and scores were generally within 100 fish per day, although they ranged up to 400 fish per day. June landings totalled 220,255 pounds, all from mid-Pacific vessels.

The nearshore fishery got off to a slow start in July. Several purse seiners landed fish from south-west of the Coronados Islands early in the month, and the first major sport catch developed northwest of Guadalupe Island in mid-July. However, fishing effort in general was scattered and relatively far north for this time of year. Boats were sporadically successful in south-central California Waters, but most commercial vessels headed up the coast and by the end of the month were fishing from Cape Mendocino north. Scores of 400 to 600 fish per day were reported for boats fishing 800 miles off Cape Mendocino, and 100-200 fish per day for smaller boats fishing within 100 miles of the coast, when wind did not limit effort. Total landings for July were approximately 1,083,776 pounds, most of which was landed early in the month by boats from the mid-Pacific.

In August, large fish, averaging 20 pounds, appeared 30 to 40 miles off of Morro Bay, and many smaller boats unable to fish windy northern waters worked this area. Most scores were within 100 fish per day. Sport fishing catches primarily occurred here and north, although some good fishing occurred outside Tanner and Cortez Banks during the month, where large 30 to 40 pound fish were landed. Most of the commercial fleet continued fishing north of Mendocino. Offshore vessels did very well in early August 800 to 1000 miles off Cape Mendocino with scores of 200 to 600 fish per day, averaging 11 to 14 pounds. Later on in the month most offshore effort was farther north, in Oregon waters. Landings for August are estimated at 1,575,746 pounds.

In early September purse seiners located 20 to 30

Diego sport fishing activity for a week or so. Commercial boats fishing 60 to 80 miles off the central California coast experienced sporadic success, with high days of over 200 fish off Fort Bragg and at the 1908 spot; scattered activity also occurred at the Davidson, Guide and Pioneer sea mounts. Drift gill net vessels in the Morro Bay area brought in larger albacore throughout the month, with landings as high as 180 fish per day. Many Eureka landings in September were from vessels fishing offshore Oregon and Washington, who came south to unload. Catches of 500 fish per day, averaging 12-13 pounds, were reported off of Coos Bay. Many landings from this area were made at the end of September, when 40 knot winds forced offshore vessels to return to port. September landings totalled 2,029,634 pounds.

Bait boat activity began to increase 60 miles off of San Simeon and north to Sur Canyon at the end of September, and by early October vessels were doing very well. Some boats reported single day's catches of over 900 large, 25 to 30 pound fish, but most boats averaged about 300 fish per day. Windy weather slowed activity later in October. A total of 1,269,900 pounds of albacore were landed for the month.

The last few landings of the season were made in early November, from bait boats fishing in Morro Bay waters, averaging under 100 fish per day. In addition, an unexpected purse seine catch off Santa Rosa Island in mid-November brought landings for the month to 123,705 pounds. December landings totalled only 11,390 pounds.

Preliminary landings for the 1986 season total 7,017,924 pounds, including 3.0% for sales direct to the public. This is well below last year's total of 14,410,000 pounds and only 32% of the 25-year average of 21,700,000; landings have not been this low since 1941. Sport fishing vessels in southern California had a dismal season also; most concentrations of fish were beyond a single day's trip from shore. Poor fishing in southern California was due in part to the extensive band of cold, turbid water than extended south from Point Conception, keeping fish farther offshore than usual. In addition, a very good commercial salmon season in central California discouraged many smaller trollers from switching to albacore gear until late in the season. By the end of August some had switched back to salmon gear or had given up for the season.

Effort was also low because of poor market conditions and few buyers. A price agreement between the Western Fishboat Owners Association and Pan Pacific, the only cannery handling albacore on the coast, set an initial price per ton for the 1986 albacore season at \$1100 for fish over 9 pounds, and \$750 for those under 9 pounds. In mid-August,



Pan Pacific began absorbing trucking costs, usually \$200-250 per ton; fishermen shipping from northern ports were charged only a \$75 handling fee per ton. In 1985, opening prices were \$1300/ton and \$950/ton, respectively, but dropped to an end of season price of \$1000 per ton, with shipping charges an additional expense.

Direct retail sales to the public in 1986 was estimated at 3.0% of all landings, and occurred primarily in Fort Bragg and Eureka. The off-vessel price generally ranged between \$.80 and \$1.00 per pound.

#### Oregon

Fishing off Oregon began the third week of July when catches of up to 100 fish per day were made from Newport to the Oregon-California border, 70 to 150 miles offshore. During the last week of the month fishing improved to 100 to 300 fish per day but the weather was sloppy and effort was low. July landings were 65,096 pounds.

August saw excellent fishing 600 to 800 miles offshore Southern Oregon with scores ranging from 200 to 600 fish per day with good weather during the first two weeks of the month. Inshore weather was bad during the first week of August forcing most boats into port. After the weather settled, the fish were scattered and catches were low, 20 to 50 fish per day. Poor fishing in inshore waters continued at about the same level through August. However, excellent catches continued offshore central Oregon in an area bounded by 44 to 46 N. Latitude and 137 to 142 W. Longitude. Fishing success was consistent at 100 to 300 fish per day through the month. August landings totaled 1,581,373 pounds.

September catches in the offshore area continued until the last week of the month when winds increased and catches dropped off. Fishing in the nearshore area was poor with few vessels fishing. The only spot off Oregon with any activity was 100 miles off Cape Blanco where scores of 100 fish per day were reported when boats could get out to fish. September landings were 741,204 pounds.

October fishing off Oregon was confined to the Oregon-California border area where a few boats worked early in the month. Most boats quit and a few moved to California by mid-month. October landings were 63,239 pounds in November.

Total Oregon landings amounted to 2,460,672 pounds, about 1 million pounds more than in 1985 but still 10 million pounds below the long-term average.

#### Washington

Washington's 1986 albacore season was characterized by low effort (72 landings) which probably resulted from a lack of available markets and low prices. Despite this low effort, 1986 Washington albacore landings amounted to 1,861,544 pounds, almost 5 times the level of last year's landings. This still represents less than half of the 25-year average.

No albacore were landed in Washington ports until August. Landings for the month totaling 1,099,328 pounds were primarily from the area 400-800 miles offshore of Oregon, although a few vessels reported scattered catches 100 miles offshore of Grays Harbor and Willapa Bay, Washington.

Total September landings of 762,216 pounds were again primarily from the offshore area. A few catches averaging less than 100 fish per day were reported 60 to 80 miles off of Westport, Washington. A small number of charter sportfishing boats also fished in this area during September. This was more sportfishing effort than has occurred for the past few years, but still only a fraction of the sportfishing effort of the mid-1970's. No albacore landings were made in Washington subsequent to September.

Compiled by Larry Hreha - Oregon Department of Fish and Wildlife

#### Other Contributors

Brian Culver—Washington Department of Fisheries  
Karen Worcester—California Department of Fish and Game

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
25-year average	21,700	12,042	4,366	38,526
1986*	7,018	2,461	1,862	11,341

\*Preliminary

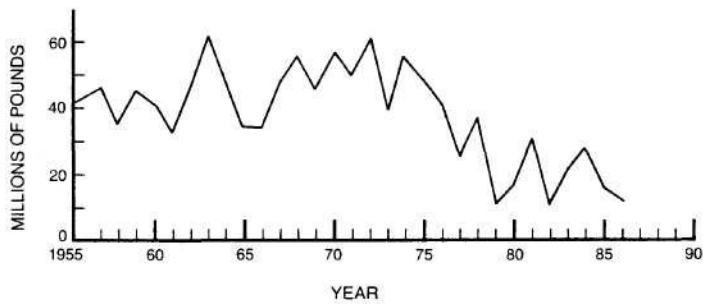


Figure 1. Combined annual landings of albacore in California, Oregon and Washington, 1956-1986.

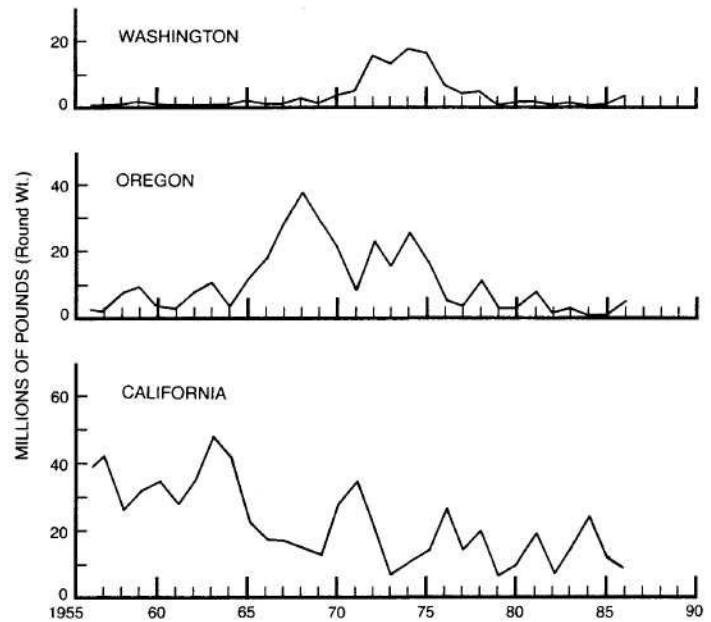


Figure 2. Annual albacore landings by State, 1956-1986.

## PACIFIC HALIBUT FISHERY IN 1986

Halibut fishing in 1986 continued a recent trend of increasing catches (Table 1). Preliminary landings and number of fishing days by management area for 1986 are presented in Table 2. The fishery landed 69.59 million pounds dressed weight (42,100 mt round weight), and slightly exceeded the 66.4 million pound (40,200 mt) catch limit set by the International Pacific Halibut Commission. The 1986 catch level was surpassed only six times since 1929, exceeded the 1985 catch by 12.85 million pounds (7,800 mt), and was about three times larger than the recent low levels of about 22 million pounds (13,300 mt) during the 1977-80 period. Largest abundance and the majority of catch occurred in the Gulf of Alaska (Alaska Peninsula through Southeast Alaska). Total abundance of the halibut population has been increasing 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.

Three management problems were significant in the 1986 fishery: high daily catch rate jeopardizes managing at the catch limit; illegal fishing is on the rise; and incidental fishing mortality within the longline fleet is increasing.

Daily catch rates continued high in 1986. The change to circle hooks from j-hooks, increased abundance, and increased fishermen in some areas combined to produce potential daily catches of approximately 10 million pounds (6000 mt) in Areas 3A and 3B (areas which represent about 60% of the total catch). Two-day seasons in these areas may no longer permit management within the catch limits, and one day seasons may be necessary.

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 is at an all-time high. In addition to other difficulties, a high level of illegal fishing activity compromises CPUE data.

Efforts by fishermen to increase efficiency are causing increased incidental mortality. During short openings, some

cases, fishing occurs up to the end of the season, and all unretrieved gear is abandoned for later pick-up. 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 five million pounds.

Compiled by Robert J. Trumble, International Pacific Halibut Commission.

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	58.2	69.6

Table 2. Preliminary commercial catch summary of the 1986 Pacific Halibut fishery.

Regulatory Area	Catch Limit (millions lbs.)	Fishing Days	Catch (millions lbs.)
2A	.55 *	19 185	.53 .02
2B	11.2	15	11.2
2C	11.2	3.5	10.7
3A	28.1	4	32.7
3B	10.3	5	8.8
4A	2.0	7	3.4
4B	1.7	6	.3
4C	.6	18	.7
4D	.7	8	1.2
4E	.05	48	.04
TOTAL	66.40		69.59

\*50,000 pounds of the Area 2A catch limit was sub-allocated by the United States Government to four Northwest Indian treaty tribes.

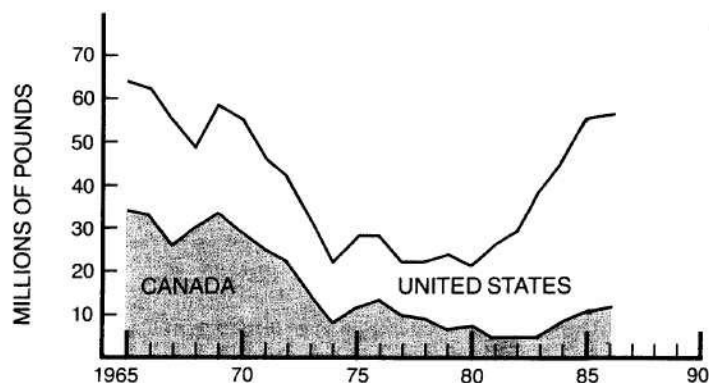


Figure 1. Division of Pacific Halibut catches by Canada and the United States, 1965-1986.

## GROUNDFISH FISHERY IN 1986

The preliminary estimate of 1986 groundfish landings by North American fishermen fishing the northeast Pacific Ocean is 1,552,288t, a 33% (382,860t) increase over 1985 landings. Recreational catch estimates for 1986 are incomplete and were not included in the above estimate. U.S. fishermen accounted for 95% of the total landings with the remainder landed by Canadian fishermen. U.S. and Canadian joint venture fisheries landed 86% (1,329,465t) of the total commercial groundfish harvest. Trawl fisheries dominated the domestic catch, accounting for 79% (176,444t) of the aggregate catch followed by longline (12% or 27,117t), pot (4% or 7,997t), and "other gear" fisheries (5% or 11,180t).

### Commercial Fishery

Coastwide 1986 groundfish landings increased over the 1985 level due to greater Canadian domestic and joint venture catches as well as a surge in all U.S. joint venture catches. Bering Sea joint venture deliveries expanded by a dramatic 84%, in contrast to the Gulf of Alaska's 75% decline. Pollock and yellowfish sole were the principal species taken in the Bering Sea and Gulf of Alaska's joint venture, followed in importance by other flatfishes, Pacific cod, and Atka mackerel. Joint venture operations off British Columbia and the Washington-Oregon-California region for Pacific whiting increased by 125% and 159%, respectively.

Domestic landings into British Columbia rose by 5,777t (13%) in 1986. However, U.S. domestic landings declined in all four coastal states from 11 to 22%, principally due to depressed trawl landings of most species. Predominant trawl-caught species in 1986 were Pacific cod, the rockfish complex, walleye pollock, and dover sole. As depicted in Table 3, the most dramatic declines were in Alaska trawl catches of Pacific cod and walleye pollock. Total domestic trawl landings decreased 16% from 1985 to 1986.

Domestic landings in 1986 by gear-types other than trawl were 46,109t, an increase of 6,188t (15%) over 1985. The principal species landed were sablefish, 19,939t, and the rockfish complex, 11,757t.

Deliveries of Alaska groundfish by U.S. joint venture catchers-vessels to foreign processing vessels exceeded 1,000,000t in 1986. This was the first year that the Alaskan joint venture harvest exceeded the foreign directed fishery harvest. The total deliveries of more than 1,217,000t represent an increase of 39% over 1985's tonnage of 882,000t. The total ex-vessel value of the 1986 harvest is estimated to be \$143.7 million, compared to \$98.6 million in 1985.

Partnerships were formed between twenty U.S. companies and 32 foreign companies: fourteen Korean, eleven Japanese, three Chinese and three Polish. A proposed Taiwanese joint venture did not materialize.

Total catches of pollock reached 904,000t, less than 64,000t of which was in the Gulf of Alaska. The yellowfish sole and flatfish fisheries caught 216,000t, well over 1985's of 179,000t despite closures of prime areas because of crab bycatch problems. The Atka mackerel catch was reduced from 1985's catch of 38,000t to less than 32,000t because of reduced resources availability.

In 1986 a second attempt was made at a longtime joint venture. Unlike 1985's venture, where several U.S. longliners delivered turbot to a Taiwanese processor in the Bering Sea, the 1986 operation involved six boats delivering Pacific cod to a Japanese processor in the Gulf of Alaska.

The 1986 joint venture trawl fleet was a heterogeneous group of 108 vessels, ranging from 58 to 135 feet: 25 were 120 feet or over, 35 were between 100-119 feet, 40 were between 80-99 feet, and eight below 80 feet. Many of these trawlers have fished for several years with only one or two foreign partners, and operate in groups of four to thirty, rotating with their sister ships throughout the season (which began in late January and ended in the last week of December, with peak activity occurring in mid-August). Seventeen of the trawlers and all six of the longliners fished in their first Alaskan joint venture in 1986. Nine trawlers which participated in 1985 joint ventures did not return in 1986.

Of the 114 participants, 35 indicate a homeport in Alaska (an increase from 26 in 1985); six were from California, 13 from Oregon, and sixty from Washington, with the greatest number (53) listing Seattle as home port. One Seattle-based trawler, the KARINA EXPLORER was lost with all hands early in the year.

In 1986 two foreign nations, the Soviet Union and Poland, 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 participated in both fisheries. At most, 36 foreign fishing vessels (trawl, processing, or support vessels) operated at any one time off the coast, compared with 24 in 1985, 25 in 1984, 21 in 1983, 18 in 1982, and 41 in 1981. As in the past, Pacific whiting was the target species in both foreign trawl and joint venture operations.

In the foreign trawl fishery, both nations requested allocations in 1986. However, the Soviets were denied an allocation because they did not take remedial action following their certification in 1985 by the Secretary of Commerce for excessive harvest of minke whales off Antarctica. Therefore, Poland was the only participant in the foreign trawl fishery, using a total of 26 trawlers (some of these vessels also participated in the joint venture fishery). Of the 101,600t of whiting available for foreign harvest in 1986, 70,000t were allocated to Poland. The Poles were able to harvest almost all (69,861t) of this amount by the end of the season. The remaining 31,600t of whiting were not allocated.

Although 2,000t of shortbelly rockfish and 9,600t of jack mackerel were available for foreign fishing in 1986, there was no interest in these fisheries.

In 1986, joint venture operations involved both Poland and the Soviet Union, as in 1984 and 1985. The total receipt of whiting by Polish and Soviet processing vessels in 1986 was 81,640t, 250% above the 1985 level and slightly above the 1984 level. About 70 percent of the 120,000t available for joint venture processing was taken in 1986. A total of 24 foreign processing vessels received whiting from 25 U.S. trawlers, the highest numbers on record; the next highest years were 1981 and 1984 when 20 foreign processing vessels received whiting from 21 U.S. trawlers.

Although 5,000t of shortbelly rockfish were available for joint venture processing in 1986, there was no interest in this fishery.

Federal and State management regulations for the Washington-Oregon-California (WOC) region restricted the harvest of sablefish, widow rockfish, Pacific ocean perch, and other rockfishes during the year. Vessel trips and frequency limits were the principal regulatory measures used to provide a year-round fishery without exceeding harvest quotas of guidelines. The 1986 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 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. Biweekly and twice weekly landings options were granted for this area and species complex.

For the fourth consecutive year a 40,000 lb trip limit without a frequency restriction was retained for the rockfish complex south of Cape Blanco. In the area north of Cape Blanco catches of Pacific ocean perch were limited to 20% (by weight) of all fish on board or 10,000 lb whichever was less. Unrestricted landings of Pacific ocean perch were allowed for landings of less than 1,000 lb. Unrestricted landings of sablefish were allowed, with the provision that landings of fish less than 22 inches in length could not exceed 5,000 lb per trip.

By late summer, the pace of the WOC fishery was such that emergency regulations were necessary. On August 22, the remaining sablefish quota was allocated between trawl and non-trawl gears at 55% and 45%, respectively. In addition, an 8,000 lb sablefish trip limit was imposed on trawl landings. More liberal trip limits were instituted on August 31 for the rockfish fishery north of Coos Bay. Weekly trip limits were increased to 30,000 lb of which no more than 12,500 lb could be yellowtail rockfish. Biweekly trip limits (60,000 lb with a maximum of 25,000 lb) and twice-weekly trip limits (15,000 lb with a maximum of 6,500 lb) were increased at the same time. On a coastwide basis, the 9300t acceptable Biological Catch (ABC) level for widow rockfish was reached on September 28, necessitating the imposition of a 3,000 lb widow trip limit without a frequency limitation. This restriction kept landings during the remainder of 1986 from exceeding the 10,200t optimum yield.

By early October, it was apparent that the non-trawl sablefish quota would be reached prematurely and that the

trawl sablefish quota would not be attained by year's end. Consequently, on October 23, the non-trawl sablefish fishery was closed and the sablefish trawl gear trip limit was increased to 12,000 lb for the remainder of the year. Fortunately, no further prohibitions were necessary to control or curtail the W-O-C fishery.

Alaska's domestic groundfish landings declined by 17,410t (16%) from the 1985 level. The trawl fishery was responsible almost exclusively for the serious drop. As of this report, Alaska's domestic catch estimates were preliminary and the possible causes for the decline (reduced resource availability, effort shifts, etc.) were not reported. British Columbia's total 1986 commercial groundfish harvest increased 39% over the previous year's harvest level while domestic landings registered an increase of 13% or 5,777t, the joint venture fishery for Pacific whiting experienced a 130% increase over the 1985 joint venture catch of 13,158t. British Columbia's trawl fishery landed 44,230t (87%) of the domestic total of 50,912t in 1986. As in previous years, rockfish (including Pacific ocean perch), Pacific cod, and Pacific whiting dominated trawl landings. Trawl landings of sablefish, rockfish, Pacific cod, and Pacific whiting increased from 12 to 61%, whereas substantial declines were documented for walleye pollock, lingcod, and English sole. Longline landings of all principal species increased to an aggregate of 2,553t. 1986 pot-caught sablefish landings declined by 8% to 3,222t.

Washington's commercial groundfish landings declined by 22% between 1985 and 1986. Landings were 26,277 mt in 1985 compared with preliminary estimates of 20,521 mt in 1986. Declines in landings are noted in nearly every major fishery. For example, we've observed a 32% drop in sablefish landings, a 45% drop in lingcod, a 46% drop in Dover sole landings, and a 62% drop in whiting landings. The only bright spot is the 75% increase in rockfish landings, and these are largely the result of increased Columbia area widow rockfish landings plus increases in unidentified rockfish. Part of the sablefish and lingcod declines can be attributed to the elimination of the setnet fishery (this gear usually appears in the "miscellaneous gear" table) plus the nearly complete absence of a sablefish pot fishery. There is some concern over the declining Dover sole landings, and over the drop in Puget Sound whiting landings. Both declines seem to reflect changing species availability. Finally, there has been an increase in the number of vessels fishing shrimp this year, and this may also be playing a role in the declining groundfish landings.

Oregon's preliminary estimate of total groundfish landings in 1986 (commercial and recreational) is 25,051t compared to 29,220t in 1985. Trawl and pot landings declined 20% and 25%, respectively. Longline and miscellaneous gear landed catch including shrimp trawl landings increased 107 and 101% respectively while recreational catch remained nearly the same. Much of the decline in Oregon groundfish landings was a result of effort shifting to an expanding shrimp fishery in 1986. PFMC's management measures and reduced effort has brought Oregon closer to the goal of stability and a year-round fishery. The increase in effort by longliners was attributable to gear changes from pot to longline as well as additional vessels appearing after early restrictions on sablefish in Alaska.

California's estimated commercial groundfish landings in 1986 declined by 4,950t to 38,208t, principally due to decline in landings of all principal trawl-caught groundfish species. A shift in trawl effort from groundfish to a rejuvenated pink shrimp fishery off northern California and Oregon appears to be the principal causative factor for reduced 1986 landings. Longline and miscellaneous gear landings increased moderately. Gillnet-caught landings of rockfish increased by approximately 50% over the 1985 level, due in part to more restrictive regulations on other gillnet fisheries which diverted more effort into the rockfish gillnet fishery.

**Recreational Fishery**

Recreational catch data was extremely limited for 1986. Oregon and Canada were the only regions with comparative 1985 and 1986 data for the report. As is evident in Table 8, Oregon's recreational catch of groundfish, principally rockfish, was stable from 1985 through 1986, and Canada's recreational catch of rockfish and lingcod increased by 13%.

Compiled by Frank Henry, California Department of Fish and Game, February 25, 1986.

**Other Contributors:**

Fritz Funk, Alaska Department of Fish and Game  
 Jim Golden, Oregon Department of Fish and Wildlife  
 Kate King, National Marine Fisheries Service  
 Janice E. Leaman, Department of Fisheries and Oceans-Canada  
 Janet Smoker, National Marine Fisheries Service  
 Jack V. Tagart, Washington Department of Fisheries

Table 1. Total commercial groundfish landings in metric tons (t) by region for 1985 and 1986 with percent change.

Region	1985 t	1986 t	Percent Change
Alaska	105,762	88,352	-16
Washington	26,277	20,521	-22
Oregon	28,992	24,830	-14
California	43,158	38,208	-11
Joint Venture	906,689	1,299,207	43
Total U.S.	1,110,878	1,471,118	32
Canada (B.C.)	45,135	50,912	13
Canada Joint Venture	13,415	30,258	125
Total Canada	58,550	81,170	39
Total U.S.-Canada	1,169,428	1,552,288	33

Table 2. Domestic groundfish landings in metric tons (t) by region for 1985 and 1986 with percent change.

Region	Trawl		Longline		Pot		Other Gear		Total		Percent Change
	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	
Alaska	89,451	66,656	13,220	17,056	2,930	2,523	161	2,117	105,762	88,352	-16
Washington	20,431	16,158	3,446	3,273	845	37	1,555	1,053	26,277	20,521	-22
Oregon	25,790	20,753	669	1,387	1,903	1,426	630	1,264	28,992	24,830	-14
California	35,150	28,647	1,460	2,848	936	789	5,612	5,839	43,158	38,208	-11
Total U.S.	170,822	132,214	18,795	24,564	6,614	4,775	7,958	10,273	204,189	171,641	-16
Canada (B.C.)	38,491	44,230	2,075	2,553	3,501	3,222	1,068	907	45,135	50,912	13
Total U.S. & Canada	209,313	176,444	20,870	27,117	10,115	7,997	9,026	11,180	249,324	222,553	-11

Table 3. Domestic trawl landings in metric tons (t) for food, 1985 & 1986 (preliminary) & 10-year mean (1976-1985) by species and region with the commercial landings for all gears.

Species by group		Alaska	Washington	Oregon	California	Total U.S.	British Columbia	Total U.S. & Canada
Petrale sole	1985	0	407	577	795	1,779	336	2,115
	1986	0	347	691	577	1,615	413	2,030
	% change	0	-15	20	-28	-9	24	-4
	10-yr mean	0	NA	962	978		312	
English sole	1985	0	995	468	1,045	2,508	692	3,200
	1986	0	832	552	844	2,228	451	2,679
	% change	0	-17	18	-19	-11	-35	-16
	10-yr mean	—	NA	903	1,521		998	
Dover sole	1985	0	2,814	5,695	12,099	20,608	963	21,571
	1986	0	1,514	4,744	9,521	15,779	1,154	16,933
	% change	0	-46	-17	-21	-24	20	-22
	10-yr mean	—	NA	5,010	8,895		985	
Rock sole	1985	0	43	1	9	53	430	483
	1986	0	93	6	2	101	452	553
	% change	0	116	500	-88	91	5	14
	10-yr mean	—	NA	9	50		1,186	
Pacific cod	1985	42,363	1,216	38	0	43,617	2,328	45,945
	1986	30,227	888	29	0	31,144	3,596	34,740
	% change	-29	027	24	0	-29	54	-24
	10-yr mean	—	NA	195	0		6,429	—
Lingcod	1985	8	1,647	946	380	2,981	4,853	7,834
	1986	0	1,026	487	195	4,689	2,913	7,602
	% change	-100	-38	-49	-49	-57	-40	-3
	10-yr mean	—	NA	840	1,149		2,135	
P. ocean perch	1985	1,595	698	797	68	3,158	6,069	9,227
	1986	638	666	654	17	1,975	5,740	7,715
	& change	-60	-5	-18	-75	-28	-5	-16
	10-yr mean	—	NA	754	46		4,594	
Other rockfish	1985	1,826	5,001	11,676	12,085	30,588	10,854	41,442
	1986	798	8,738	10,468	9,698	29,702	17,424	47,121
	% change	-56	75	-10	-20	-3	61	14
	10-yr mean	—	NA	11,236	15,963		5,709	
Sablefish	1985	608	747	2,843	3,731	7,929	233	8,162
	1986	2,880	568	2,108	3,586	9,142	522	9,664
	% change	374	-24	-26	-4	15	124	18
	10-yr mean	—	NA	1,689	3,069		308	—
Pacific whiting	1985	0	3,927	884	3,130	7,941	6,055	13,996
	1986	0	1,475	418	2,940	4,833	6,803	11,636
	% change	0	-62	-53	-6	-39	12	-17
	10-yr mean	—	NA	288	970		2,372	
Walleye pollock	1985	42,588	9	0	0	42,597	1,895	44,492
	1986	27,964	10	0	0	27,974	577	28,551
	% change	-34	17	0	0	-34	-70	-36
	10-yr mean	—	NA	0	0		1,614	
Total above Species	1985	88,988	20,431	23,925	33,342	163,759	34,708	198,467
	1986	62,507	16,158	20,157	27,380	129,182	40,047	169,229
Total all species	1985	89,451	20,431	25,790	35,150	170,822	38,491	209,313
	1986	66,656	16,158	20,753	28,647	132,214	44,230	176,444
	% change	-25	-21	-20	-19	-23	15	-16

Table 4. Catch in metric tons (t) by species group and region of joint venture fisheries in 1986 with 1985 totals.

Species	Bering Sea	Gulf of Alaska	Total Alaska	Calif., Oregon Washington	Total U.S.	Canada (B.C.)	Total
Pacific whiting	0	0	0	81,816	81,816	30,136	111,952
Pollock	840,420	58,844	899,264	0	899,264	82	899,346
Yellowfin sole	152,309	0	152,309	0	152,309	0	152,309
Other flatfish	65,961	904	66,865	0	66,865	0	66,865
Pacific cod	64,597	1,251	65,848	0	65,848	0	65,848
Atka mackerel	31,984	5	31,989	0	31,989	0	31,989
P. ocean perch	273	32*	305*	0	305	0	305
Other rockfish	276*	14*	290*	170	460	40	506
Sablefish	433	44	477	6	483	0	483
Other fish	0	0	0	0	0	0	0
Total 1985	629,990	244,952	874,942	31,568	906,510	13,415	919,925
Total 1986	1,156,253	61,094	1,217,347	81,816	1,299,163	30,258	1,312,421
% Change	84	-75	39	159	43	125	4

\*In previous years P. Ocean Perch included four look-alike Sebastes species. In 1986 it only included *S. alutus*; the other four species are in "other rockfish."

Table 5. Longline landing in metric tons (t) by major species and region in 1985 and 1986.

Region	Sablefish		Lingcod		Rockfish		Pacific cod		Other		Total	
	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986
Alaska	11,046	15,280	59	54	795	784	412	769	908	170	13,220	17,057
Washington	2,094	2,072	125	65	356	381	7	11	863	743	3,446	3,277
Oregon	514	1,085	22	33	129	260	tr	tr	4	9	669	1,387
California	331	652	49	157	1,015	2,039	0	0	65	21	1,460	2,841
Total U.S.	13,985	19,089	255	309	2,295	3,464	419	780	1,840	943	18,795	24,566
Canada (B.C.)	541	850	190	300	415	800	2	3	927	600	2,075	2,553
Grand Total	14,526	19,939	445	609	2,710	4,264	421	783	2,767	1,543	20,870	27,119

Table 6. Pot landings in metric tons (t) by major species and region in 1985 and 1986.

Region	Sablefish		Lingcod		Rockfish		Other		Total	
	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986
Alaska	2,928	2,308	0	0	TR	1	2	214	2,930	2,523
Washington	840	37	1	0	4	0	0	0	845	37
Oregon	1,899	1,413	2	1	2	12	tr	tr	1,903	1,425
California	877	778	2	2	55	6	2	3	936	789
Total U.S.	6,544	4,536	5	3	61	19	4	217	6,614	4,775
Canada (B.C.)	3,501	3,222	tr	tr	tr	tr	0	0	3,501	3,222
Grand Total	10,045	7,758	5	3	61	19	4	217	10,115	7,997

Table 7. Landings in metric tons (t) from miscellaneous gears by major species and region in 1985 and 1986.

Region	Sablefish		Lingcod		Rockfish		Pacific cod		Other		Total	
	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986
Alaska	55	0	24	40	36	14	31	11	15	2,052	161	2,117
Washington	313	25	494	160	491	696	44	22	213	139	1,555	1,053
Oregon	19	49	83	132	493	985	TR	4	34	94	630	1,264
California	393	190	277	132	4,680	5,329	0	0	262	188	5,612	5,839
Total U.S.	780	256	878	464	5,700	7,024	75	37	524	2,473	7,958	10,273
Canada (B.C.)	0	0	623	450	426	450	10	7	9	0	1,068	907
Grand Total	780	264	1,501	914	6,126	7,474	85	44	533	2,473	9,026	11,180

Table 8. Estimated recreational landings in metric tons (t) by major species and region in 1985 and 1986.

Region	Rockfish		Lingcod		Flatfish		Pacific Cod		Other		Total	
	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986
Alaska	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Washington <sup>1</sup>	172	NA	40	NA	154	NA	69	NA	183	NA	618	NA
Oregon	187	180	34	35	1	1	0	0	6	5	228	221
California	NA	NA	NA	NA	NA	NA	0	0	NA	NA	NA	NA
Total U.S.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canada (B.C.) <sup>2</sup>	134,112	167,783	77,103	70,817	0	0	0	0	4,680	5,212	215,895	243,812
Grand Total	NA	NA	NA	NA	0	NA	0	0	NA	NA	NA	NA

<sup>1</sup> Puget Sound recreational landings only. <sup>2</sup>Canada catches are reported in numbers of fish

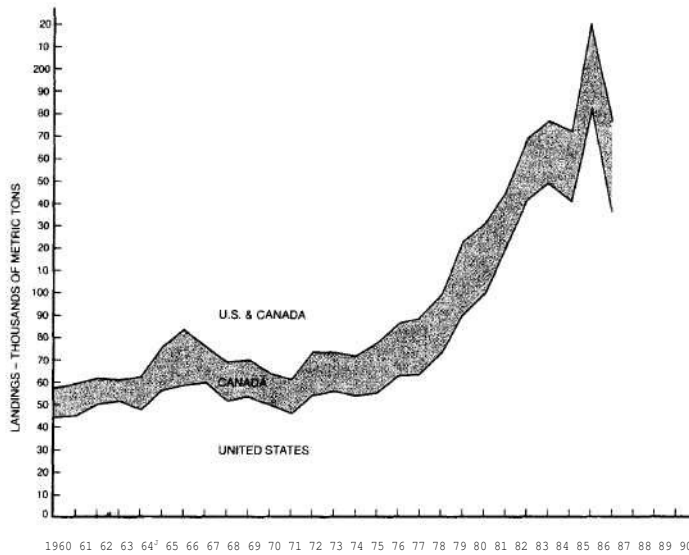


Figure 1. Pacific Coast trawl landings of the United States and Canada, excluding joint venture landings.



## DUNGENESS CRAB FISHERY, 1985-1986

Pacific coast Dungeness crab landings totaled 26.6 million pounds, about 0.5 million pounds more than in 1984-85 but about 11 million pounds below the long-term average. Production from the northern California, Oregon and coastal Washington fisheries was 16.5 million pounds, over 7 million below the long-term average. Alaskan production dropped to 5.8 million pounds, the lowest figure since 1977 and more than 2 million pounds below the 20 year annual average. Ex-vessel prices in the "lower 48" fisheries opening on December 1 were generally \$1.25/lb and peaked at \$1.75/lb by January; Alaska prices ranged between \$0.75 and \$1.25/lb.

### ALASKA

Overall production in 1986 was 5.8 million pounds, about 3.4 million pounds below 1985 and far below the record 15+ million pound years of 1980 and 1981. Production from the five major Alaskan areas was: Kodiak—964,000, Cook Inlet-563,000, Prince William Sound-1,090,000, Yakutat-736,000 and Southeast-2,224,000. Compared to 1985 the only area to show increased production was Yakutat (+365,000) while large decreases occurred in Kodiak (-3,195,000) and Cook Inlet (-839,000). Crab condition was poor during July and August in Kodiak and fishermen were sorting heavily.

### BRITISH COLUMBIA

Based on incomplete data the B.C. fishery produced approximately 2.4 million pounds, a decrease of about 7% from 1985 and about 4% less than the 10-year average.

### CALIFORNIA

The 1985-86 season yielded 5.92 million pounds, up by more than a million pounds over last season. Production in the northern California ports of Crescent City, Eureka, Trinidad and Fort Bragg was 3.08, 1.6, 0.63 and 0.23 million pounds respectively. The fleet numbered 353 boats. The San Francisco fishery produced 384,000 pounds compared to the 10-year average of 574,000 pounds.

### OREGON

Oregon landings totaled 7.1 million pounds compared to the long-term seasonal average of about 8.6 million pounds. 74% of the catch was landed during December with 40% delivered to Newport. The fleet numbered 341 boats.

### WASHINGTON

Landings; from the coastal fishery were 3.9 million pounds, an increase of 1.0 million pounds over the 1984-85 season but about 3.3 million pounds below the long-term average. This is the seventh consecutive season of below average production. The "regular" fleet numbered 102 including 4 Oregon boats which fished late in the season. An unprecedented winter fishery occurred in the Destruction Island area. Puget Sound fishery produced 1,484,000 pounds, about 216,000 pounds below the 10-season average.

Compiled by Steve Barry, Washington Department of Fisheries

### Other Contributors:

Jerry McCrary, Alaska Department of Fish and Game  
 Ron Warner, California Department of Fish and Game  
 Darrell Demory, Oregon Department of Fish and Wildlife  
 John Fulton, Canadian Department of Fisheries and Oceans

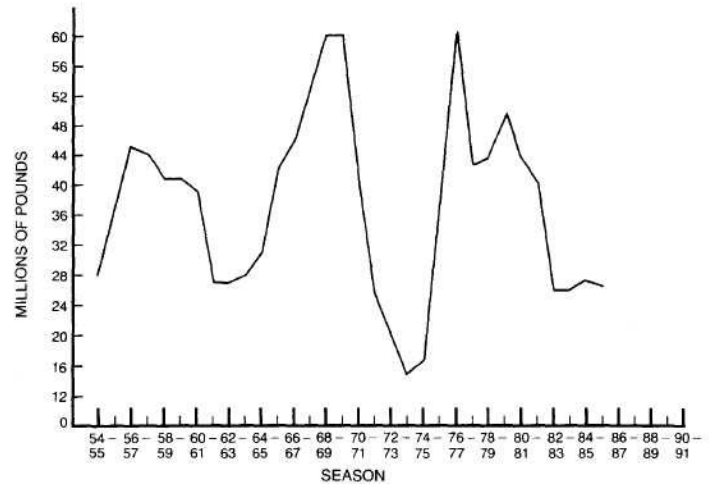


Figure 1. Pacific coast Dungeness crab landings by season, including British Columbia, 1954-1986.

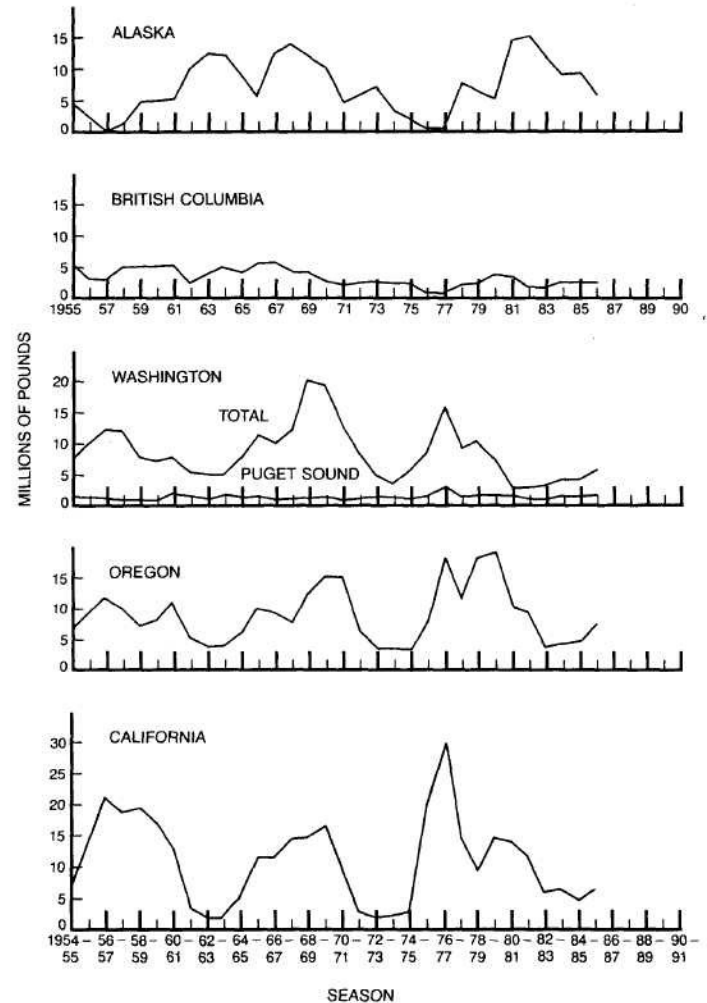


Figure 2. Dungeness crab landings by season 1954-55 through 1985-86, except Alaska and British Columbia seasons are all in the pertinent calendar years.

## TROLL SALMON FISHERY IN 1986

### ALASKA

The Alaska troll summer season for all species opened June 20, closed to chinook on July 15, and closed to all species August 11. The season reopened August 21 for all species, closed for chinook September 9. The all species except chinook fishery continued until September 20.

The Alaska summer troll chinook catch was 3.7 million pounds round weight and the troll coho catch was 13.9 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, 14-17, 24-27, and 30-31 for a total of 20 days. An all species fishery was open August 2-3 and 8-9 in the area from the U.S./Canada border south to Carroll Island and August 2-3 and 7-9 from Leadbetter Point south to Cape Falcon.

Landings from these fisheries combined with those from the Treaty Indian commercial troll fishery produced 680,100 round pounds of chinook and 703,800 round pounds of coho. Both chinook and coho catches were well below the 10-year mean of 1.9 million and 2.7 million pounds, respectively, but were up from the 1985 levels of 600,000 pounds each of chinook and coho.

### OREGON

The area north of Cape Falcon opened for chinook fishing on May 1 in conjunction with the Washington season. The season between Cape Falcon and Cape Blanco opened on May 1 as well, running continuously through July 20 for chinook with some landing restrictions on coho during July. The season reopened in this area on July 23 for all species and was closed for coho July 24, when the coho quota was met. Chinook fishing continued through October 31.

The troll fishery south of Cape Blanco was open June 16-19, June 23-26, June 30-July 5 and July 17-August 26. No coho fishing was allowed after July 24. Special fisheries inside 6 miles occurred in May and on August 29 near the mouth of the Rogue River. \* »

The 1986 Oregon chinook landings of 3.9 million pounds round were higher than the average in the last 10 years by 70% and the number of chinook landed was the highest recorded for Oregon since records have been kept. Coho landings of 2.2 million pounds round were improved considerably over the last 3 years but were still 31% below the previous ten-year average.

### CALIFORNIA

The troll season north of Point Delgada paralleled the Oregon season south of Cape Blanco. A special troll fishery inside 6 miles near the mouth of the Eel River opened September 8 and closed September 30. South of Point Delgada the troll season opened May 1 and closed September 30, with coho fishing permitted only from June 1 through July 24. Minimum size limits statewide for chinook and coho were 26 and 22 inches, total length, respectively, and single barbless hooks were required.

California preliminary troll chinook landings are 7.6 million pounds round, 31% higher than the previous 10-year average. Preliminary landings of coho were 200,000 pounds round, more than double the 93,000 pounds landed in 1985 but only 25% of the previous 10-year average.

Compiled by Alan Baracco, California Department of Fish and Game

#### Other Contributors:

Mike Dean, Alaska Department of Fish and Game  
Bonnie Ponwith, Washington Department of Fisheries  
Robert McQueen, Oregon Department of Fish and Wildlife

Table 1. Estimated landings of troll caught chinook and coho salmon in 1986 and 10-year (1976-1985) average (round weights in millions of pounds). All 1986 data are preliminary.

Species = Chinook		
Region	1986	Average
Alaska	3.7	4.9
British Columbia	8.6	11.0
Washington	0.7	1.9
Oregon	3.9	2.2
California	7.6	6.8
<b>TOTAL</b>	<b>24.5</b>	<b>25.8</b>

Species = Coho		
Region	1986	Average
Alaska	13.9	8.0
British Columbia	23.0	15.3
Washington	0.7	2.7
Oregon	2.2	3.2
California	0.2	0.8
<b>TOTAL</b>	<b>40.0</b>	<b>30.1</b>

Species = Chinook + Coho		
Region	1986	Average
Alaska	17.6	12.9
British Columbia	31.6	26.3
Washington	1.4	4.6
Oregon	6.1	5.4
California	7.8	6.6
<b>TOTAL</b>	<b>64.5</b>	<b>55.9</b>

Table 2. Pacific Coast commercial troll chinook salmon landings in millions of pounds round, 1956-86. All 1986 data are preliminary.

Year	British Columbia		Wash-	Oregon	California	Total
	Alaska		ington			
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	1.6	6.8	24.9
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
1976-85						
Mean	4.9	11.0	1.9	2.2	5.8	25.8
1986	3.7	8.6	0.7	3.9	7.6	24.5

Table 3. Pacific Coast commercial millions of pounds round, 1956-1986 troll coho salmon landings in . All 1986 data are preliminary.

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	4.3	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
1976-85						
mean	8.0	15.3	2.7	3.2	0.8	30.1
1986	13.9	23.0	0.7	2.2	0.2	40.0

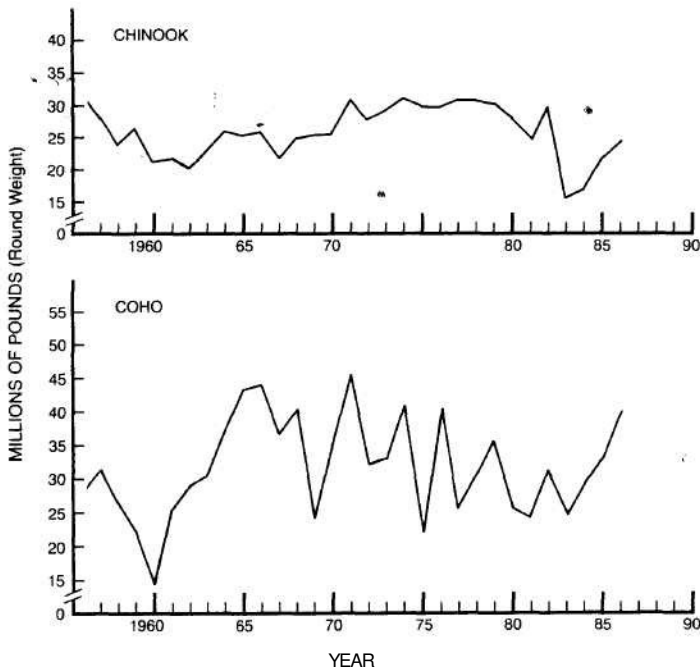


Figure 1. Pacific Coast annual landings of troll caught chinook and coho salmon, 1956-1985 and preliminary 1986.

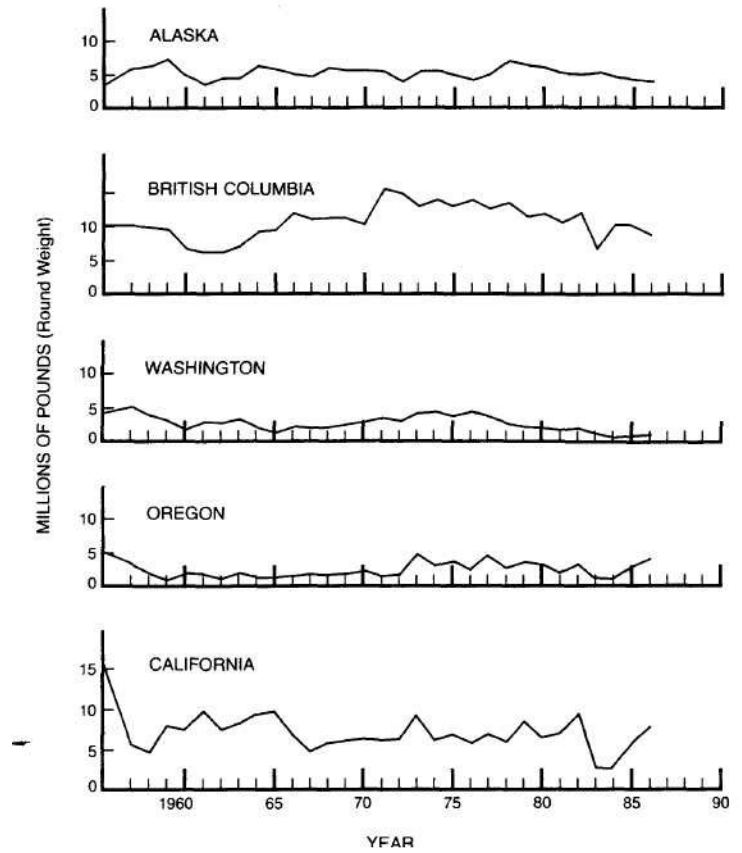


Figure 2. Annual troll chinook salmon landings by area, 1956-1985 and preliminary 1986.

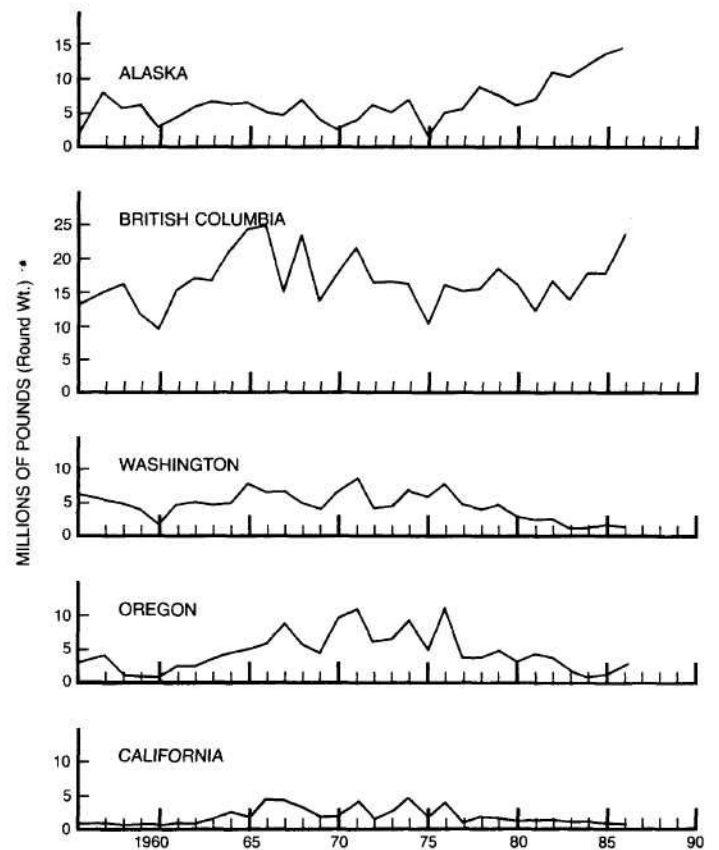


Figure 3. Annual troll coho salmon landings by area, 1956-1985 and preliminary 1986.

## SALMON AND STEELHEAD SPORT CATCHES IN 1985 IN THE PACIFIC COAST STATES

This year steelhead catches in Oregon are brought up to date through 1985 and a fishery was allowed for spring chinook salmon in Idaho for the first time since 1978. The total harvest of U.S. Pacific coast salmon and steelhead was 2,079,060 fish (Table 1). The total 1985 harvest of salmon was 1,622,200 fish which is 17% below the 10-year average. California does not estimate steelhead catches, but the total 1985 catch for the other states was 393,900 fish which is 37% above the 10-year average (Table 2).

### ALASKA

Alaskan anglers harvested an estimated 619,181 sea-run salmon and 4,723 steelhead in 1985 (Mills, 1986). The salmon harvest was below the previous record harvest of 625,846 set in 1984 but was well above the average for the previous eight years (Table 2). The 1985 harvest of steelhead was also below the record harvest of 6,539 set in 1984 and was only 9% above the 1977 to 1984 average. The total harvest of 619,181 sea-run salmon included 90,718 chinook, 200,997 coho, 172,630 sockeye, 138,297 pink, and 16,539 chum salmon.

The marine harvest of 239,693 salmon included 32,859 chinook, 80,928 coho, 10,263 sockeye, 109,100 pink, and 6,543 chum salmon. The freshwater total of 379,488 included 57,859 chinook, 120,069 coho, 162,367 sockeye, 29,197 pink, and 9,996 chum salmon. Of the 4,723 steelhead harvested by Alaskan anglers, 731 were taken in saltwater and 3,992 were harvested in freshwater.

### WASHINGTON

Washington recreational marine (Ocean and Puget Sound) salmon angler trips, numbering at 1.2 million, fell below the ten year average of 1.6 million. Effort in 1985 did increase from the record low levels of 1.0 million angler trips in 1984.

Catches of chinook salmon in marine areas dropped from the 1984 level of 189,172 to 176,281 and were well below the ten year mean of 333,850. Conversely, the marine areas' coho catches rose from 228,823 in 1984 to 370,494 in 1985, but were still below the ten year mean of 576,782. Marine area catches of pink, 31,043 in 1985, were up from the 1983 level of 21,002, but lower than the ten year average of 44,936.

A total of 165,800 steelhead were harvested in 1985. This is 44 percent above the 10-year average of 114,800 fish.

Table 1. Salmon and steelhead sport harvest, 1985

State	Chinook	Coho	Pink	Other Salmon <sup>1</sup>	Steelhead	Total
Alaska	90,718	200,997	138,297	189,169	4,723	623,904
Wash.	196,132	386,288	54,737	4,384	165,800	807,341
Oregon	55,900 <sup>2</sup>	182,500 <sup>2</sup>	7,700 <sup>2</sup>	—	188,915	435,015
Idaho	2,500	—	—	—	34,500	37,000
Calif. <sup>2</sup>	160,300	15,200	-	-	<sup>3</sup>	175,800
Total	505,550	784,985	200,734	193,553	393,938	2,079,060

<sup>1</sup> Sockeye and chum salmon

<sup>2</sup> Marine catch only <sup>3</sup> Estimates unavailable

### IDAHO

In 1985, the first limited sport fishing for spring chinook in Idaho since 1978 occurred. Sport anglers harvested an estimated 2,500 chinook. Harvest was permitted on a returning terminal hatchery stock exceeding escapement needs.

The 1984-85 and 1985-86 fall component summer steelhead runs to Idaho increased from 1983-84 levels. Harvest in 1985 increased accordingly to 34,500 fish, up 38% from the previous year.

### OREGON

The Oregon marine sport catch of salmon was estimated at 246,100 fish. The 1985 steelhead catch statewide was 188,900 fish. The salmon marine catch included 55,900 chinook and 182,500 coho. Steelhead catches which have not been reported since 1981 showed an increase of 14 percent above the 10-year average. The steelhead catch since 1981 is brought up to date in Table 2.

### CALIFORNIA

The 1985 ocean sport catch estimate of 175,800 salmon was up 63% from the 1984 harvest of 107,600 and was up 40% from the 10-year average. Coho salmon made up 9% of the marine sport catch in 1985.

The major warm water current (El Nino) that adversely affected the sport catch in 1983 and 1984 was not felt in 1985. This was reflected in the larger size of the salmon caught in both the sport and commercial fisheries.

Table 2. Salmon and steelhead sport catches (1,000's of fish) for the Pacific Coast States, 1974 to 1985 and 10-year (1975 to 1984) averages

Year	Alaska		California <sup>1</sup>		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
10-year average	431.1	3.7	135.1		1.2	12.4	347.9	165.9	1,054.0	114.8	1,948.4	286.9
1985	619.2	4.7	175.8		2.5	34.5	246.1	188.9	578.6	165.8	1,622.2	393.9

<sup>1</sup> Excluding California catch

<sup>2</sup> Marine fishery data only

## SHRIMP FISHERY IN 1986

The 1986 Pacific coast pandalid shrimp landings in the United States and Canada totalled 64.5 million pounds (Table 1), an 87% increase over 1985 landings. This increase was a result of increased landings in Washington, Oregon and California, as Alaska landings remained depressed and British Columbia landings decreased slightly.

Table 1. Annual Pacific Coast pandalid shrimp landings (in 1000's of pounds) by State and Province, 1975-1986.

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
Mean	53,403	2,854	9,232	25,928	5,578	97,009
1986	4,064	2,400	17,400	33,798	6,800	64,462

### ALASKA

Shrimp landings for the 1986 Alaska shrimp fishery totalled 4,063,668 pounds which was well below the 10-year average. Shrimp stocks in the Chignik area and Cook Inlet remained severely depressed.

Kodiak (PMFC Area 54) totalled 455,468 pounds. Chignik, South Alaska Peninsula and the Aleutian Islands (P.MEC Area 55) remained closed. No landings were reported. Cook Inlet (PMFC Area 53) landings totalled 575,200 pounds. This was divided between a catch of 71,000 pounds in the pot fishery and 504,200 pounds in the trawl fishery. The trawl fishery took place during only one subseason in that the fall and winter subseasons were closed because of severely depressed stocks. Prince William Sound (PMFC Area 52) landings were 492,000 pounds divided about equally at 242,000 pounds for pot gear and 250,000 pounds by trawl gear. Southeast Alaska (PMFC Area 51) trawl landings were 2,359,000 pounds. Pot landings were 182,000 pounds.

### BRITISH COLUMBIA

Total Pandalid shrimp landings of all species is estimated to be 2.4 million pounds. This is a decrease of about 8 percent from the 1985 catch. Coastwide trap fishery landings of prawns (*Pandalus platyceris*) decreased by about 30 percent. The trawl landings of ocean shrimp (*Pandalus jordani*) increased by about 8 percent.

### WASHINGTON

The final 1986 season landings of 17.4 million pounds was substantially higher than the ten-year average of landings into Washington of 9.3 million pounds. The season was characterized by a record catch, strong market conditions, an increase in fishing effort and relatively high catch-

per-unit of effort (CPUE). A total of 65 vessels (54 double-rigged) had five or more landings of shrimp. This was an increase of 39 vessels over the 1985 season. Double-rigged vessels landed 89 percent of the catch. The season opened with the ex-vessel price at 45 cents per pound and increased steadily throughout the season reaching 75 cents per pound by the close of the season. Good quality shrimp were landed throughout the entire season. The count-per-pound ranged from 96 to 139 whole shrimp per-pound. Buyers strongly discouraged landings of shrimp over 140 count-per-pound by either refusing to purchase the small shrimp or offering a lower price. All year classes of shrimp were present and appear relatively strong. The new incoming year class, shrimp hatched in March, 1986, made the weakest showing and will require close attention during the upcoming season.

The Destruction Island grounds produced 44 percent of the total landings or 7.6 million pounds. Catch per-unit of effort or pounds of shrimp caught per hour towed for double-rigged vessels averaged 543 pounds per hour. This was comparable to the CPUE of the area in 1985 of 583 pounds per hour. CPUE ranged from 1,104 pounds per hour in April to 342 pounds per hour in September.

The Grays Harbor area produced 8.8 million pounds or 51 percent of the total landings. CPUE averaged 506 pounds per hour compared to 494 pounds per hour in 1985. April was the most productive month when CPUE averaged 991 pounds per hour and August was the least productive at 333 pounds per hour.

Three percent of the total landings or .5 million pounds came from the Willapa area and CPUE averaged 415 pounds per hour. All Oregon catch areas produced 2 percent of the total landings or .4 million pounds.

### OREGON

The pink shrimp fishery is rebounding from several poor years. The shrimp fishery began a slump in 1982 when the total season landed catch dropped below 20.0 million pounds for the first time since 1971. In 1984 the fishery reached a low with only 4.8 million pounds landed. During the period from 1977 through 1984 catch in pounds per single-rigged equivalent trawl hour (lb/hr SRE) dropped from a record high of 779 lb/hr SRE to only 108 lb/hr SRE in 1983. During this same period the only concentrations of shrimp were often of smaller sized animals. Processors began to import a similar shrimp (the northern pink shrimp, *Pandalus borealis* which was in larger supply, and often available at the better price.

In the 1984 season the catch per hour increased to 152 lb/hr SRE. Then during the 1985 season catch per hour continued to improve (season average was 310 lb/hr SRE), the grade of shrimp available improved, and the price of domestic versus imported shrimp became more balanced. At the end of the season many areas still showed large amounts of good grade shrimp. Processors and fishermen alike began to gain confidence that the 1986 season would be productive, and as a result about twice as many vessels participated in the opening of the 1986 season.

In a preliminary report to PMFC we noted that through August 1986 the shrimp landed catch reached 26.3 million pounds. We continued by stating that, if the present rate of harvest continued, the 1986 total shrimp landed catch would exceed 30.2 million pounds to become the third highest total

since the fishery began in 1957. In fact, the rate of harvest increased and the total 1986 shrimp landed catch (preliminary) was 33.8 million pounds. The largest landed catch occurred in 1978 when 57.0 million pounds were landed. The second greatest total occurred in 1977 when 48.6 million pounds were landed. The 1976-85 average landed catch is 26.1 million pounds.

Table 2. Annual Shrimp Landed Catch, Number of Vessels Fishing, and Catch per Hour (CPUE, lb per single-rigged equivalent trawl hour) for the Oregon Shrimp Fishery During 1957 and 1977-1986.

Year	Shrimp Landed Catch (in 1000's of lb)	Number of Vessels	CPUE
1957	4,200	7	771
* 1977	48,580	100	779
1978	56,997	186	563
1979	29,587	203	265
1980	30,152	289	202
1981	25,918	249	190
1982	18,462	173	183
1983	6,547	130	108
1984	4,844	59	152
1985	14,855	96	310
1986	33,798	152	?

#### CALIFORNIA

Statewide ocean shrimp, *Pandalus jordani*, landings for the 1986 season were 6.8 million pounds, with much of it coming from the northern portion of the state. The season began April 1, and continued through October.

##### PMFCAREA 92

Landings for the ports of Crescent City and Eureka totaled 5.9 million pounds. Of this total, 5.0 million pounds

were from PMFC Area 92, and 916 thousand pounds were from Areas 86 and 88, off Oregon.

Northern California's season catch (PMFC Area 92) is more than double that of last year. California landings from PMFC Areas 86 and 88 also are twice the poundage reported for last year.

Ex-vessel price starting at \$0.45, increased to \$0.50 early in July, and then to \$0.60 per pound near July where it remained.

##### PMFCAREA 94

Eight thousand pounds were reported landed in Fort Bragg this season. These are the first landings for Area 94 since 1982, when 12 thousand pounds were reported.

##### PMFCAREA 96

No landings have been reported this season. Test fishing in June by one commercial fishing vessel failed to locate shrimp. This area (Bodega Bay) has remained unproductive since 1977, when two million pounds were landed.

##### PMFCAREA 98

1986 has been the best year for ocean shrimp landings in PMFC Area 98 since 1983. Landings through July were 838,000 pounds with no additional catch reported. Ex-vessel price stayed at \$0.45 to \$0.50 per pound throughout the season with almost all the catch being trucked out of Morro Bay to processors in northern California.

Compiled by Russell Porter, Pacific Marine Fisheries Commission

#### Other Contributors:

Barbara McIntosh, Washington Department of Fisheries  
Mark Salens, Oregon Department of Fish and Wildlife  
Phillip Swartzell & Pat Collier, California Department of Fish and Game

## FOREIGN FISHING ACTIVITIES OFF THE PACIFIC COAST IN 1986

### Washington, Oregon, and California

In 1986 two foreign nations, the Soviet Union and Poland, 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 participated in both fisheries. At most 36 foreign fishing vessels (trawl, processing, or support vessels) operated at any one time off the coast, compared with 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.

#### Foreign Trawl Fishery

Both nations requested allocations in 1986. However, the Soviets were denied an allocation because they did not take remedial action following their certification in 1985 by the Secretary of Commerce for excessive harvest of minke whales off Antarctica. Therefore, Poland was the only participant in the foreign trawl fishery, using a total of 26 trawlers (some of these vessels also participated in the joint venture fishery). Of the 101,600 metric tons of whiting available for foreign harvest in 1986, 70,000 metric tons were allocated to Poland. The Poles were able to harvest almost all (69,861 metric tons) of this amount by the end of the season. The remaining 31,600 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 1986, there was no interest in these fisheries.

#### Joint Venture Fishery

In 1986, joint venture operations involved both Poland and the Soviet Union, as in 1984 and 1985. The total receipt of whiting by Polish and Soviet processing vessels in 1986 was 81,640 metric tons, 2.5 times above the 1985 level and slightly above the 1984 level. About 70 percent of the 120,000 metric tons available for joint venture processing was taken in 1986. A total of 24 foreign processing vessels received whiting from 25 U.S. trawlers, the highest numbers on record; the next highest years were 1981 and 1984 when 20 foreign processing vessels received whiting from 21 U.S. trawlers.

Although 5,000 metric tons of shortbelly rockfish were available for joint venture processing in 1986, there was no interest in this fishery.

#### Boardings and Violations

The U.S. Coast Guard and special agents of the National Marine Fisheries Service spent a total of 58 patrol days and 76 aircraft hours to assure compliance with the foreign fishing regulations. A total of 53 boarding inspections of foreign vessels were conducted with 23 violations and 2 written warnings confirmed in the 1986 fishery.

In 1986, four foreign nations (Japan, Korea, Poland, and China) were given allocations to fish off Alaska in the Bering Sea and Aleutian Islands area. Japan also received a small allocation to allow its longliners to fish in the Gulf of Alaska. In addition, vessels from those four countries and the Soviet Union participated in joint venture activities.

A total of 513 foreign vessels (384 Japanese, 44 Soviet, 43 Polish, 39 Korean, and 3 Chinese) operated in 1986, 34 vessels less than 1985. Of these, 337 operated under MFCMA management plans governing the Gulf of Alaska groundfish fishery, Bering Sea and Aleutian Islands groundfish fishery, and Bering Sea snail fishery. The other 176 vessels were Japanese factoryships and gillnetters operating in the high seas salmon fishery regulated by the International North Pacific Fishery Convention (INPFC). The number of foreign vessels present on a monthly basis ranged from 32 (in January) to 350 (in July).

Total foreign catch in 1986 was almost 500,000 metric tons of groundfish, salmon, and snails; that was a 53.5 percent reduction from 1985's catch. Effort in directed fishing operations decreased by 41 percent to 20,420 days. The Bering Sea/Aleutian Islands area accounted for 95 percent of total effort and 97 percent of foreign catch.

#### *Joint Venture*

Five foreign nations (Japan, Korea, the Soviet Union, Poland, and China) participated in joint venture operations during 1986, compared to six nations in 1985. A total of 106 foreign vessels (35 Japanese, 31 Korean, 26 Soviet, 11 Polish, and 3 Chinese) worked with 127 U.S. vessels. That is 2 foreign vessels and 18 U.S. vessels more than 1985. Foreign effort rose 16 percent from 10,433 days in 1985 to 12,122 days in 1986. Catch was 39 percent higher than the previous year, with foreign vessels receiving 1.225 million metric tons of pollock, flounders, and other groundfish. About 95 percent of catch was taken in the Bering Sea/Aleutians with 94 percent of effort.

#### *Japanese Activities*

As in past years, Japan dominated foreign fishing off Alaska. A total of 384 vessels operated during 1986, 34 vessels less than the previous year. Of these, 208 vessels operated under the MFCMA, including 62 stern trawlers; 23 longliners; 1 factoryship; 2 snail pot vessels; 69 transport vessels; 3 tankers; and 37 pair trawlers, 6 Danish seiners, and 1 stern trawler that worked with 3 pollock factoryships and 1 yellowfin sole factoryship. Four factoryships and 172 gillnetters conducted a high seas salmon fishery under INPFC regulations as in the past. The number of vessels present per month varied from 5 to 379, with effort highest in June and July during the high seas salmon fishery.

Effort by Japanese fishing vessels was reduced from 31,573 days in 1985 to 17,807 days in 1986. This effort yielded a Japanese catch of approximately 389,600 metric tons (78 percent of total foreign catch), a decrease of 52 percent from 1985. Pollock was the predominant species; other catch included flounders, Pacific cod, salmon, and snails. About 96 percent of Japanese catch was taken from the Bering Sea and Aleutians. Japanese vessels spent an additional 3,159 days in joint venture activities.

Independent Japanese stern trawlers operated in the Bering Sea and Aleutians during 1986, with longliners fishing in the Gulf of Alaska and Bering Sea. The 62 trawlers fished a total of 2,007 days and caught primarily pollock and flounders. Twenty-three longliners fished for Pacific cod a total of 1,916 days; 64 percent of longline effort occurred in the Bering Sea. While longline effort decreased 20 percent from 1985, effort by trawlers dropped by 69 percent.

Effort by Japan's factory fleets also fell substantially from last year, as fleets operated with fewer vessels or for a shorter period of time. Only three pollock factory fleets

operated in 1986, instead of five fleets as in past years. The fleets consisted of three factoryships that processed pollock caught by 38 catcher vessels in the central Bering Sea from June to October. Another factory fleet with six catcher vessels fished for yellowfin sole from June to October in the Bering Sea east of the Pribilof Islands. The four fleets fished a total of 4,802 days, 43 percent fewer than in 1985. This resulted in a 42 percent decrease in catch to approximately 240,000 metric tons. The high seas salmon fleets as in past years consisted of 4 factoryships and 172 gillnetters, but each of these vessels fished 10-12 days less than in 1985. Catch (about 6,460 metric tons) was 48 percent lower than in 1985, while effort (6,380 days) was 24 percent lower.

In addition, Japan conducted a small fishery for snails in the Bering Sea from April to October. This was actually the only Japanese fishery that showed an increase over 1985. Two snail pot vessels fished northwest of the Pribilof Islands and landed approximately 500 metric tons in 182 days. That was triple the effort of 1985 and almost five times the amount of catch.

#### *Soviet Activities*

In 1986, Soviet vessels conducted only joint venture operations off Alaska. A total of 44 Soviet vessels operated in 1986, including 23 processing trawlers, 3 factoryships, 16 transport vessels, and 2 tankers. The number of vessels present each month ranged from 0 to 37. Total effort by Soviet vessels increased 122 days over 1985 to 3,481 days in 1986.

#### *Polish Activities*

Poland continued directed fishing operations off Alaska in 1986, as well as continuing to participate in joint ventures. Forty-three Polish vessels (31 trawlers, 10 transport vessels, and 2 tankers) operated in Alaskan waters, with 0 to 29 vessels present each month. Polish vessels spent 1,043 days in directed fishing and support operations and caught approximately 6,850 metric tons of groundfish, primarily pollock. That was a 43 percent decrease in effort and 79 percent decrease in catch from 1985, and 1.4 percent of total foreign catch in 1986. Fifty-four percent of catch was taken in the Bering Sea, with the remaining 46 percent from the Aleutian Islands area. In addition, Polish vessels operated a total of 310 days in joint ventures with U.S. vessels.

#### *Korean Activities*

Korea utilized 39 vessels to conduct fishing and joint venture operations in 1986. The 39 vessels included 29 stern trawlers, 2 factoryships, and 8 transport vessels. From 5 to 35 vessels operated off Alaska each month. Korean fishing vessels landed 20 percent of total foreign catch in 1985, approximately 100,900 metric tons of pollock, flounders, and other groundfish. Effort totalled 6,302 days (19 percent of total foreign effort), including 4,839 days spent in joint ventures. Korean fishing effort declined 60 percent from 1985 while catch decreased 55 percent. However, Korean joint ventures experienced a 90 percent increase in effort.

#### *Chinese Activities*

The Peoples Republic of China deployed three stern trawlers to Alaska during 1986. The three vessels conducted fishing operations for 107 days and joint venture operations for 333 days. Chinese catch, approximately 2,000 metric tons, was 72 percent pollock and 18 percent flounders. Eighty percent of catch was taken from the Bering Sea.

#### *Enforcement and Surveillance*

Joint NMFS/Coast Guard patrols in 1986 included 232 aerial patrols (1,361 hours) and 917 vessel patrol days. NMFS Special Agents were present during 39 percent of the aerial patrols and 25 percent of the vessel days. Patrol units

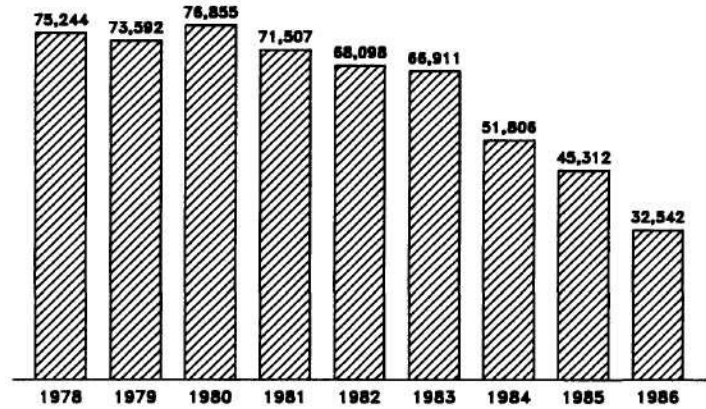
reported 2,807 sightings of foreign vessels. NMFS and Coast Guard personnel conducted 308 boardings on foreign vessels (139 Japanese, 101 Korean, 23 Polish, 33 Soviet, 10 Chinese, 1 Portuguese, and 1 Canadian).

Under the MFCMA, infractions detected during boardings or aerial patrols may result in the issuance of a written warning, report of violation (assessment of civil penalty), or in the seizure of a vessel for flagrant violations. In 1986, a total of 49 written warnings were issued to foreign vessels (19 Japanese, 16 Soviet, 7 Korean, 4 Polish, and 3 Chinese). Reports of violation totalled 50 (22 Japanese, 11 Soviet, 10 Korean, 6 Chinese, and 1 Polish). As of March 5, 1987, two of the reports of violation were settled for a total of \$26,500; the remaining 48 cases are yet to be settled. In addition, the Korean vessel SHIN YANG HO was seized in October 1986 for harassment of a U.S. fisheries observer. In addition to the civil case against the vessel, the master was charged criminally. The criminal case was settled with a fine of \$5,000; settlement of the civil case is pending.

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

Compiled by Kate King, NMFS, Northwest Region and Vickie Vaughan, NMFS, Alaska Region

**TOTAL FOREIGN EFFORT OFF ALASKA**  
(Number of Vessel Days)



NMFS Law Enforcement - Alaska Region