



*41st Annual Report of the*  
**PACIFIC**

**MARINE FISHERIES  
COMMISSION**

**FOR THE YEAR 1988**

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

## **PMFC COMMISSIONERS 1988**

**Jerry Conley, Chairman**

### **ALASKA**

DON COLLINSWORTH  
Alaska Dept. Fish & Game

RICHARD ELIASON  
Alaska State Senate

PETE ISLEIB  
Governor's Appointee

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California State Assembly

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California Dept. Fish  
& Game

DONALD HANSEN  
Governor's Appointee

### **IDAHO**

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Idaho State Senate

FREDCHRISTENSEN  
Governor's Appointee

JERRY CONLEY Idaho  
Dept. Fish & Game

### **OREGON**

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Oregon State  
Representative

PAULHEIKKILA  
Governor's Appointee

HARRY WAGNER  
Oregon Dept. Fish &  
Wildlife

### **WASHINGTON**

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Governor's Appointee

JOE BLUM  
Washington Dept. Fisheries

BRAD OWEN  
Washington State  
Senate

## **PMFC EXECUTIVE STAFF 1988**

**Guy Thornburgh, Executive Director**

RUSSELL PORTER Asst.  
to the Executive Director

J.KENNETH JOHNSON  
RMPC Coordinator

WILLDASPIT PacFIN  
Data Manager

PAM KAHUT  
Fiscal/Contract Specialist

MARYWASHKOSKE  
Personnel/Fiscal Assistant

JERRY FISHER  
Treasurer

GLORIA SMITH  
System Planning Contract  
Specialist

JIMLONGWILL RMPC  
Programmer

THERESA FOGG  
Secretary

YVONNE NYLUND  
PacFIN Programmer

DEBRAGEIGER  
PacFIN Computer Aide

NABIL SEAMAN  
PacFIN Computer Aide

41st Annual Report  
of the  
**PACIFIC MARINE  
FISHERIES COMMISSION**  
FOR THE YEAR 1988

To the Congress of the United States and the Governors and Legislatures of the Five Compacting States, Washington, Oregon, California, Idaho, and Alaska, by the Commissioners of the Pacific Marine Fisheries Commission in Compliance with the State Enabling Acts Creating the Commission and Public Laws 232; 776; and 315 of the 80th; 87th; and 91 st Congresses of the United States Assenting Thereto.

Respectfully submitted,  
PACIFIC MARINE FISHERIES COMMISSION

GUY THORNBURGH, Executive Director

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

Russell G. Porter  
EDITOR  
August, 1989

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## CONTENTS

<b>ANNUAL MEETING EVENTS .....</b>	<b>1</b>
Summary .....	1
Special Issues .....	1
Thresher Shark .....	1
NOAA Fisheries Budget.....	1
SE Alaska Groundfish.....	1
Marine Debris Project .....	1
Annual PMFC Award .....	2
<b>ADMINISTRATIVE REPORTS AND ACTIONS.....</b>	<b>2</b>
Executive Director's Report .....	2
Treasurer's Report.....	3
1988 Publications .....	4
1989 Annual Meeting .....	4
Personnel .....	4
<b>APPENDIX I-FINANCIAL, AUDIT AND BUDGET REPORTS .....</b>	<b>5</b>
1988 Financial Statement .....	5
1988 Audit Report.....	6
Balance Sheet.....	7
1988 Budget Reports.....	8
<b>APPENDIX II-PACIFIC COAST FISHERY REVIEW REPORTS.....</b>	<b>9</b>
Albacore Fishery in 1988 .....	9
Pacific Halibut Fishery in 1988 .....	10
Groundfish Fishery in 1988 .....	12
Dungeness Crab Fishery in 1988.....	16
Troll Salmon Fishery in 1988.....	17
Salmon and Steelhead Sport Catch in 1988.....	20
Shrimp Fishery in 1988 .....	21
Pacific Coast Foreign Fishing Activities in 1988.....	22

# 41ST ANNUAL REPORT-1988

## ANNUAL MEETING EVENTS

### SUMMARY

The Pacific Marine Fisheries Commission's 41st Annual Meeting was held on October 24-26, 1988 at Coeur d'Alene, Idaho. The meeting was conducted by Chairman Jerry Conley, Director of Idaho Department of Fish and Game and Commissioner from Idaho. The Annual Meeting included meetings of a number of PMFC Committees. These included Marine Debris, Marine Mammals, Federal Budget, and the Recreational Fisheries Committee. The meeting also included a panel on Fishery Economics, the annual business session and two dinner speakers on Idaho fishery programs. PMFC extends its appreciation to the following guests: The panelists who addressed fisheries economics: Dave Rockland of the Sport Fishing Institute in Washington, D.C.; Hans Radtke of Portland, Oregon; and Phil Rigby of Alaska Department of Fish and Game in Juneau, Alaska. Interjurisdictional fisheries speakers: Bob Williams of NOAA Fisheries in Washington, D.C.; Al Millikan of Washington Department of Fisheries in Seattle, Washington; and Phil Rigby of Alaska Department of Fish and Game in Juneau, Alaska.

Dick Schaeffer of NOAA Fisheries in Washington, D.C. for his joke about the caribou hunters (and his information on the federal user fee legislation).

LCDR Ron Weston, USCG for the zero tolerance update.

Sidney Lasseigne of Newport, Oregon and LCDR Beverly Kelly, USCG for their information on marine debris. Dave Hanson and Bill Hutchinson of Idaho Department of Fish and Game for their banquet presentations.

### SPECIAL ISSUES

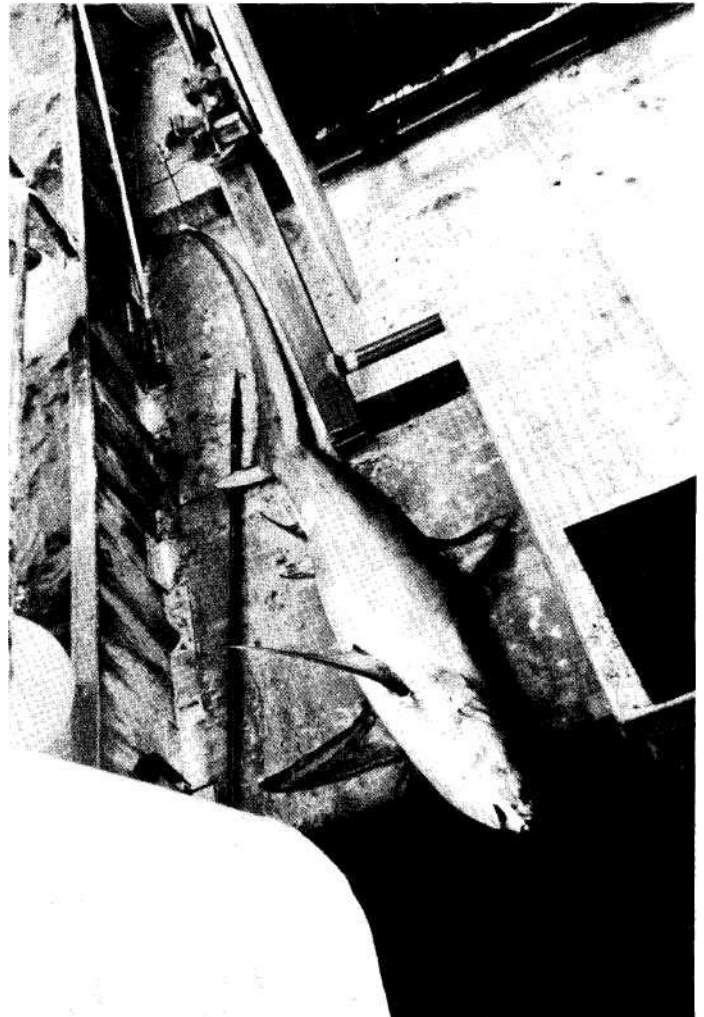
**Sturgeon Planning.** Based on a recommendation from its Recreational Fisheries Committee, PMFC will direct its Wallop/Breaux funds toward the development of a fishery management plan for sturgeon (in the Columbia River Basin and along the coasts of Washington, Oregon and California). Planning efforts will begin in early 1989, will take several years to develop, and will require input from researchers, managers and a special task force of recreational interests.

**Thresher Shark.** PMFC funding from the important Interjurisdictional Fisheries Act helped collect onboard observer data from the 1988 Oregon/Washington experimental thresher shark fishery. This information, with other fishery resource data, will help prepare a fishery management plan for 1990. A draft plan is expected for the Commission's 1989 annual meeting in Seattle.

**NOAA Fisheries' Budget.** PMFC's Federal Budget Committee continues to work closely with the west coast fisheries industry to persuade Congress to adequately fund the NOAA Fisheries program. Priority items include, Pacific Coast Fisheries Information Network (PacFIN), Interjurisdictional Fisheries grants, anadromous fishery grants, Bering Sea research, west coast groundfish research, enforcement, regional council support, Pacific Salmon Treaty research, and Columbia River hatcheries.

**S.E. Alaska Groundfish.** PMFC funding from the useful Interjurisdictional Fisheries Act assisted Alaska Department of Fish and Game and the S.E. Alaska rockfish industry in structuring a fishery management program to slow the pace of the fishery. In 1989 the Alaska Board of Fisheries will consider adapting this program in hopes of retaining a fresh fish market for many months of the year.

**Marine Debris Project.** The Commission began its Saltonstall/Kennedy funded marine debris project November 1, 1988. Ports on the West coast, through an information exchange network, will receive "start-up" resources and information regarding MARPOL Annex V regulations and guidelines to allow them to run marine debris programs which effectively serve the fishing industry and other port users. Eight ports were selected to receive consultation and resources to establish programs similar to the successful Newport, Oregon model port project. These ports include: Homer and Petersburg, Alaska; Westport and Anacortes, Washington; Astoria and Coos Bay, Oregon; and Morro Bay and Eureka, California.



Thresher Shark caught in the Washington-Oregon Experimental Fishery. Photo by L. Hreha

# ANNUAL PMFC AWARD FOR CONTRIBUTION TO PACIFIC COAST FISHERIES

## KEITH STONEBRAKER

The Commission's annual award for contributions to Pacific coast fisheries was established last year. Its purpose is to honor special individuals with interests in fisheries who have made extremely significant contributions toward promoting fisheries in our member states.

The Commission believes that these people deserve formal recognition at our Annual Meeting and our expression of gratitude for the many hours of time and energy which they devote to the industry and the fish resources.

The award for 1988 was presented to Mr. Keith Stonebraker of Idaho. Mr. Stonebraker graduated from Lewiston High School and the University of Idaho with a B.S. degree in Zoology. He was appointed to the Idaho Fish and Game Commission in December 1976 and served several terms until retiring from the Commission in April, 1987.

When Mr. Stonebraker was first appointed to the Idaho Fish and Game Commission, a sports writer posed the question whether or not one man could make that big an impact on the problems besetting fish and game in the state. Everyone was soon to discover that the answer to that question was a resounding "Yes." During his tenure on the Fish and Game Commission, Mr. Stonebraker concentrated on bolstering the steelhead stocks and the pheasant populations in Idaho. Idaho saw a ten-fold increase in steelhead hatchery returns as a result. He pushed for strict regulations to protect wild fish, legal action to keep high water quality and adequate flows, and to insure responsible downstream management. He insisted on managing for long-term benefits rather than short term consumption. Mr. Stonebraker did what he said he would do. When he retired from the Fish and Game Commission, the elk populations had grown dramatically, steelhead returns were at an all-time high and legislation was enacted creating an upland game stamp to generate funds for bird habitat. Also, during his tenure the Idaho Fish and Game Commission was recognized three times, as the "Best in the West," by the Western Association of Fish and Wildlife Agencies.

Mr. Stonebraker was steadfast in defending wildlife resources even when it meant taking an unpopular position. His interest in steelhead and salmon led him to become an expert in the intricacies of managing these species, but he still kept sight of his overall role on the Commission. Since his retirement from the Commission he has continued in an active role of furthering the restoration of anadromous fish in Idaho and in so doing donates a considerable amount of per-

sonal time, effort and finances. His dedication is further exemplified by his additional commitments which include: Member of the Northwest Regional Commission on Anadromous Fish, Board of Directors for North Idaho Children's Home, Board of Directors for Greater Lewiston Chamber of Commerce, Advisor for the Boy Scouts of America, and Nature Conservancy Executive Advisory Board member. He has served the Pacific Marine Fisheries Commission for many years as both Advisor and Commissioner. The Commission is extremely proud to present its second annual award to Mr. Keith Stonebraker, a leader in the fight to restore Idaho's anadromous fish runs and its wildlife populations.



Commission Chairman Jerry Conley (left) presents the PMFC Annual Award for Outstanding Contribution to Pacific Coast Fisheries to Mr. Keith Stonebraker at the Commission's Forty First Annual Meeting in Coeur d'Alene, Idaho. Mr. and Mrs. Stonebraker were the guests of honor at the Commission's Annual Meeting Banquet at the Coeur d'Alene Resort.

## ADMINISTRATIVE REPORTS AND ACTIONS

### EXECUTIVE DIRECTOR'S REPORT

The 100th Congress in October, 1988 amended the Marine Mammal Protection Act with a five-year exemption for commercial fisheries from the Act's general take prohibitions. This amendment reflects Congress's view of a compromise between environmentalists and fishermen.

It allows commercial fishermen to continue fishing (although with considerably more restrictions than previously) while instigating an intensive data collection program to better document and verify the taking of marine mammals by commercial fishing operations.

In light of the tremendous political pressure from animal preservationists and marine environmentalists, the amendment serves the fishing industry as a stop-gap measure. However, a Congressional decision must be made, sooner or later, to change the Act to provide a mechanism to rationally *manage* marine mammals with fish. The Commission will continue to work towards resolving this conflict between the MMPA and the Magnuson Act.

The 100th Congress also had a difficult session in dealing with fiscal needs for the Federal fisheries program in the



Sea Lion feeding on commercial catch. Growing populations of some marine mammals leads to considerable interaction with both commercial and recreational fisheries. Photo by D. Mercy

Department of Commerce. NOAA Fisheries was appropriated a nearly level funded budget (compared to the previous year, FY88). However, this funding level translates to a reduction in spending power due to inflation, pay raises and new Congressional mandates with no additional funds. The west coast suffers because the federal agency is not able to meet its responsibilities for collection of basic fisheries data.

Continued reductions in spending power must cease if fisheries management as we know it is to continue. Congress must either a) reprogram the current level of funding (many of the existing projects in NOAA Fisheries have outlived their usefulness or are lower priority than contemporary needs); b) increase appropriations (which is not too likely with the expenses of the escalating drug war coming out of the same appropriations component as fisheries); or c) revenues dedicated to fisheries must be raised (i.e. "user fees").

Besides the recurring funding problem, the next Congress will need to reauthorize the Magnuson Act. To assure the health of living marine resources over the long term, the nation should address two issues —habitat, and fishing effort.

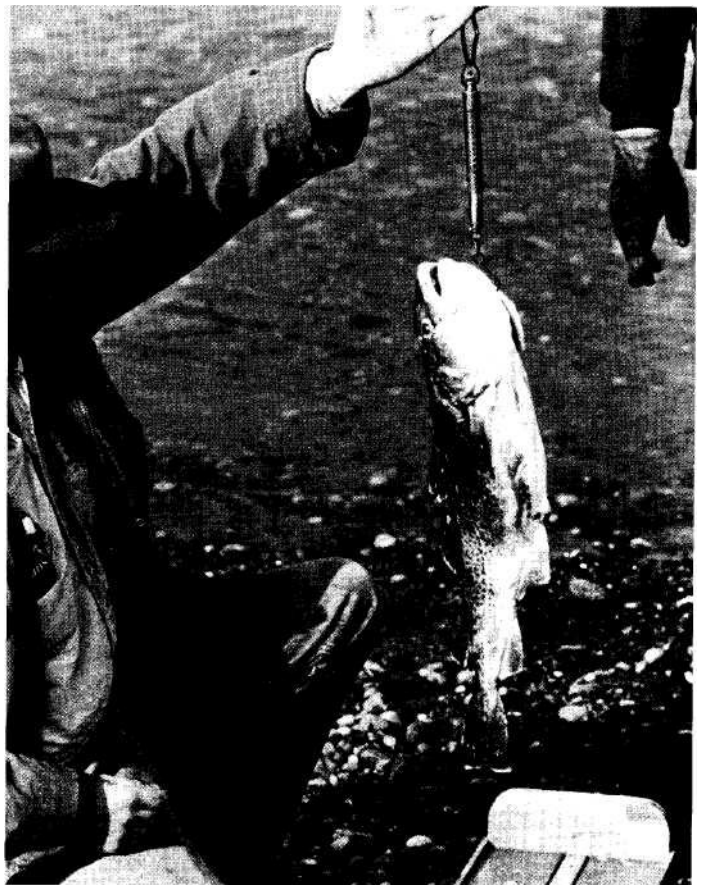
We must maintain, and in many cases restore, the aquatic habitat of fish populations. The demand for fish is staggering, and continues to increase. Yet the potential for sustained yields, let alone increased yields, is threatened by polluted water, dwindling wetlands and competing uses of our marine and anadromous waters. Strengthening the Magnuson Act to give the Secretary a stronger role in habitat decisions can surely help.

The other concern is fishing effort. As we all know, nearly all domestic fisheries already have more than enough effort, with new entrants continuing at a rapid pace. Administrative avenues for effort control must be clearly and easily available. There should be no issue with the intent of the Magnuson Act to allow the Regional Councils to control fishing effort using innovative approaches.

If habitat degradation and fishing effort are not controlled, the regulations of fisheries will become even more complicated, more frustrating and more expensive (for fishermen, consumers and governmental managers).

## TREASURER'S REPORT

The treasurer, Gerald L. Fisher, presented the Report of Receipts and Disbursements for the period September 1, 1987 to September 30, 1988 at the Annual Meeting in Coeur d'Alene, Idaho. The complete financial report can be found in Appendix I (Financial, Audit and Budget Reports). Receipts were: 1) Member states' contributions of \$162,200; 2) External contracts payments of \$4,894,933; and 3) Interest income and refunds of \$13,885. Disbursements were: 1) PMFC direct costs of \$139,951; 2) PMFC indirect costs of \$275,530; and 3) External contracts' direct costs of \$4,340,403. The FY88-89 Budget shows Commission expenditures of \$431,819 with an estimated balance of \$56,804 carried forward to balance the FY89-90 budget. The audit report for the fiscal year ending June 30, 1988 found the financial records of the Commission to be in satisfactory condition. Mr. Fisher thanked the Commission for the plaque awarded in recognition of his 25 years service as PMFC Treasurer.



Field sampler examining groundfish catch. Continuation of the PacFIN field projects is essential for proper stewardship of the nation's living marine resources.

## 1988 PUBLICATIONS

The Commission published 3 papers during 1988. Copies may be obtained by writing the Commission headquarters in Portland at 2000 S.W. First Ave., Suite 170, Portland, Oregon 97201. The publications were:

1. "*The 1988 Mark List*" containing a record of all groups of salmonids that have been fin-marked prior to their release.
2. "*Releases of Coded-Wire Tagged Salmon and Steelhead from Pacific Coast Streams Through 1987*." This is the fifteenth in a series of reports tabulating all the various codes used by federal, state, Indian and private agencies for salmonid coded-wire tags in the Pacific Coast States. The report enumerates all previously used codes, necessary corrections and all the new codes used in 1987. A report enumerating the codes released through 1988 will be published about September 1989.
3. "*The 40th Annual Report of the Pacific Marine Fisheries Commission*" for the year 1987 was published in April 1988.

## 1989 ANNUAL MEETING

The 1989 Annual Meeting of the Commission will be held in Seattle, Washington on October 16-18, 1989 at the Edgewater Hotel on the Seattle waterfront.

The Commission elected Mr. Brad Owen, Washington State Senator, as its 1989 Chairman. Mr. Owen will serve as chairman for 1989 and preside over the annual meeting in Seattle in October.

## PERSONNEL

### COMMISSIONERS

The following were Commissioners during all or part of 1988: **Alaska**

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

### California

Gerald Felando, Sacramento  
Robert Fletcher, Sacramento  
Donald Hansen, Dana Point

### Idaho

Jerry Conley, Boise —Chairman  
Ron Beitelspacher, Grangeville  
Fred Christensen, Nampa

### Oregon

Paul Hanneman, Cloverdale  
Paul Heikkila, Coquille  
Harry Wagner, Portland

### Washington

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

## 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 1988: **Alaska**

Robert Blake, Cordova  
John Burns, Fairbanks  
Paul Gronholdt, Sand Point  
Jack Lechner, Kodiak  
Henry Mitchell, Anchorage  
John Sund, Juneau  
Bruce Wallace, Ketchikan

### California

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

### Idaho

Keith Carlson, Lewiston  
Norman Guth, Salmon  
Louis Racine, Pocatello

### Oregon

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

### Washington

Donald Bevan, Seattle  
Rudy Petersen, Seattle  
Richard Powell, Longview  
Art Statt, Seattle  
Steve Watrous, Vancouver  
Terry Wright, Olympia  
Robert Zuanich, Seattle

## COORDINATORS

PMFC Coordinators facilitate all aspects of PMFC programs within their State. The following were PMFC Coordinators in each State in 1988: **Alaska**

Fred, Gaffney, Alaska Department of Fish and Game

### California

Mel Odemar, California Department of Fish and Game

### Idaho

Dave Hanson, Idaho Department of Fish and Game

### Oregon

Kirk Beiningen, Oregon Department of Fish and Wildlife (1/88-9/88)  
Kay Brown, Oregon Department of Fish and Wildlife (9/88-12/88)

### Washington

Robert Turner, Washington Department of Fisheries





## 1988 AUDIT REPORT

Oregon Dept. of Fish & Wildlife:	
Council Liaison Travel, Acquisition of Computer Equipment for Pacific Salmon Treaty Implementation and Marine Resources Program	94,495
Pacific & North Pacific Councils' Support for PMFC's Participation	27,182
U.S. Fish & Wildlife Service—Marine Sport-fisheries Information	61,199
Pacific Northwest Power Planning Council-Columbia River System & Subbasin Planning NMFS, USFWS, 5 State Fisheries Agencies & 13 Indian Tribes: Columbia Basin Fish & Wildlife Authority Support	862,281
Regional Mark Enhancement	114,513
Total Expenditures	4,755,884
Cash Balance	
September 30, 1988	\$ 89,475
Add: Receivables from External Contracts PMFC's Current Assets @ September 30, 1988	\$ 243,209

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

To Board of Commissioners  
Pacific Marine Fisheries Commission  
Portland, Oregon

We have examined the statement of assets and liabilities arising from cash transactions of Pacific Marine Fisheries Commission as of June 30, 1988, and the related statements of revenues collected and expenditures, changes in cash position and changes in fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards and the standards for financial and compliance audits contained in the Standards for Audit of Governmental Organizations, Programs, Activities, and Functions issued by the U.S. General Accounting Office, and accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

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

In our opinion, the financial statements referred to above present fairly the assets and liabilities arising from the cash transactions of the Pacific Marine Fisheries Commission as of June 30, 1988, and the revenues collected and expenditures during the year then ended on the basis of accounting described in Note 5, which basis has been applied in a manner consistent with that of the preceding year.

Cahall, Nolan & Co.  
October 27, 1988  
Beaverton, Oregon

## BALANCE SHEET JUNE 30, 1988

Assets							
	General	Property	Unemploy-				
	Fund	Fund	mentFund	General	Property	Unemploy-Fund	Fund merit Fund
<b>CURRENT ASSETS</b>				<b>LIABILITIES</b>			
Cash on hand and in banks	\$140,379		\$ 8,461	Accrued liabilities		\$ 6,493	\$ 619
Receivables:				Reserve for accrued leave		11,296	
Due from National Oceanic and Atmospheric Administration				Unexpended grantfunds: National Oceanic and Atmospheric Administration -			
-Contract #88-ABH-00037	10,658			Contract #88-ABH-00004	10,208		
-Contract #87-ABD-00103	9,517			Contract #88-ABH-00029	2,694		
-Contract #88-ABH-00038	9,687			Contract #86-ABH-00023	5,513		
-Contract #83-ABD-00017	8,016			Washington Department of Fisheries			
-Contract #84-ABC-00211	2,490			-Bogachiel River Fry Study	11		
Due from Washington Department of Fisheries-Salmon Escapement	2,370			-Freshwater Trapping	65		
-Freshwater Trapping	24,201			-Coho Trapping	46		
-Coho Trapping and Tagging	34,153			-GSI Sampling	1,485		
-Electrophoretic Sampling	28,605			California Department of Fish and Game			
-Coastal Stock Assessment	1,231			-Sportfish Sampling Studies	30,927		
-Ocean Salmon Sampling	35,992			-Gillnet Study	5,066		
-Salmon Electrophoretic Sampling	15,480			-Sea Urchin Study	3,842		
-White Sturgeon Research	10,549			-Drift Longline Fishery Study	606		
Due from Oregon Department of Fish and Wildlife				Bonneville Power Administration			
-Council Support	3,198			-Fish Passage Center	19,917		
-Pacific Salmon Treaty	11,084			North Pacific Fishery Management Council			
-Marine Recreational Survey	221			-Support of PacFIN	10,171		
-Marine Resource Program	126			Northwest Power Planning Council -Subbasins above			
Due from California Department of Fish and Game				Bonneville Dam	60,756		
-Recreational Fishery	31,159			Total liabilities	169,096		619
Due from Bonneville Power Administration				<b>FUND BALANCES</b>	<u>314,247</u>	<u>677,926</u>	<u>7,842</u>
-Smolt Monitoring	624			Total liabilities and fund balances	<u>\$483,343</u>	<u>\$677,926</u>	<u>\$8,461</u>
-Water Budget Manager	4,395						
-Coded Wire Tag	5,080						
-NWPPC Tech Work	15,921						
Due from U.S. Fish and Wildlife Service							
-Interstate Fishery Management	10,409						
Due from National Oceanic and Atmospheric Administration/ Pacific Marine Fisheries Commission							
-Fish Passage Center	4,597						
Due from Pacific Fishery Management Council/North Pacific Fishery Management Council							
-Regional Council Support	7,289						
Due from Federal and State Agencies							
-RMPC Enhancements	55,912						
<b>FIXED ASSETS</b>							
Investment in furniture and equipment			\$677,926				
Total assets	<u>\$483,343</u>	<u>\$677,926</u>	<u>\$ 8,461</u>				

# 1988 BUDGET REPORTS

EXPENDITURES	Total Actual Expenditures for Fiscal Year Ending 6/30/88	Approved Budget for 1988-89 Fiscal Year	Proposed Budget for 1989-90 Fiscal Year	Estimated External Contract Expenditures For The Period July 1, 1988 - June 30, 1989			
				Expenditures (Direct Costs)	Indirect Cost Chgs	Total	
Salaries & Wages	\$ 117,736	\$ 160,672	\$ 491,775	Admin. Support of SFFMP	\$ 8,000	\$ 2,000	\$ 10,000
Fringe Benefits	27,481	38,698	141,401	Albacore Logbook & Port Sampling	36,850	5,150	42,000
General Operation & Maintenance	98,105	105,195	318,599	Council Support	21,060	2,940	24,000
Annual Meeting	20,856	39,011	33,279	ODFW Council Support	13,000	1,625	14,625
Pre-Mtg In-State	11,024	6,250	6,500	Washington Salmon Sampling	75,867	10,615	86,482
Issue Committee Meetings	10,138	10,000	10,000	Regional Mark Processing Center	124,320	16,005	140,325
Publications	5,994	6,000	10,300	W/C Data Collection & Analysis	296,174	21,864	318,038
Cooperative Research				Columbia Basin Fish & Wildlife	96,726	12,090	108,816
Otolith Reader-25% Match	17,552	18,984	14,500	BPA-Smolt Coordination (FPC)	569,447	55,823	625,270
Mark Center-33% Match	32,600	33,400	33,500	Fish Marking Coordinator	20,040	2,806	22,846
Marine Mammal	6,000	0	0	BPA-Columbia River Coded Wire Tag	581,446	16,566	598,012
RMPC Enhancement	60,000	0	0	BPA-Technical Work Group Coord.	149,566	11,812	161,378
Miscellaneous	0	8,000	5,000	NWPPC-Columbia Basin System	919,619	11,948	931,567
Capital Outlay	589	4,500	1,500	Freshwater Trapping & Data Summ.	3,013	422	3,435
<b>TOTAL</b>	<b>\$408,075</b>	<b>\$430,710</b>	<b>\$1,066,354</b>	Coastal Freshwater Stock Assmt.	1,892	265	2,157
				ODFW-Pacific Salmon Treaty	38,956	5,454	44,410
				Electrophoretic Sampling	58,250	8,155	66,405
				Coho Trapping & Tagging	5,100	668	5,768
				CA-Sportfish Sampling Studies	228,509	31,991	260,500
				Cooperative Interstate Fishery Mgmt.	56,782	6,041	62,823
				N. CA-Marine Rec. Survey	91,219	12,771	103,990
				CA-Gill Net Alternative Study	68,424	9,579	78,003
				CA-Drift Longline Fishery	30,946	4,332	35,278
				Pittag Data Base	28,367	3,411	31,778
				CA-Sea Urchin Fishery	24,964	3,495	28,459
				CA-Age Composition Study	56,140	7,860	64,000
				CA-Artificial Reef Study	60,853	8,519	69,372
				CA-Marine Resource Inventory	36,455	5,104	41,559
				OCS Fishery Resource Data	421,868	8,426	430,294
				West Coast Marine Debris Program	102,282	14,319	116,601
				Interjurisdictional Fish. Prog.	103,815	5,518	109,333
				Coordinated Info System	166,737	3,743	170,480
				White Sturgeon Resource	13,032	1,824	14,856
				BPA-Mainstem Fish. Pass. Research Project	267,800	2,678	270,478
				<b>TOTAL</b>	<b>\$4,777,519</b>	<b>\$315,819</b>	<b>\$5,093,338</b>

REVENUE	Actual Revenue for Fiscal Year Ending 6/30/87	Estimated Revenue for 1987-1988 Fiscal Year	Estimated Revenue for 1988-1989 Fiscal Year
Interest Income	\$ 13,375	\$ 10,000	\$ 10,000
Ext. Contracts	0	0	635,965
Indirect Costs	263,389	315,819	270,048
State Contributions			
Alaska	31,000	31,000	31,000
California	25,200	25,200	25,200
Idaho	5,300	5,300	5,300
Oregon	22,000	22,000	22,000
Washington	22,500	22,500	22,500
State Contribution Subtotal	\$106,000	\$106,000	\$ 106,000
Total Revenue	\$382,764	\$431,819	\$1,022,013
Balance Avail./Previous Year	81,006	55,695	73,434
Total Available	\$463,770	\$487,514	\$1,095,447
Less Expenditures	408,075	430,710	1,066,354
Revolving Fund Set Aside	\$ 0	\$ 0	\$ 0
Balance-Carried Forward to Next Year	\$ 55,695	\$ 56,804	\$ 29,093

# APPENDIX II-PACIFIC COAST FISHERY REVIEW REPORTS

## ALBACORE FISHERY IN 1988

Commercial albacore landings were higher in 1988 than in 1987, because of catches in Oregon and Washington. Pacific coast landings totaled 10,626,135 pounds, an increase of 63% over 1987 landings.

### California

The 1988 season, like the 1987 season, developed slowly in July with the widespread search for albacore off southern California. The scant appearance of fish at cortex and 60-mile Banks dissuaded sportboats, while commercial boats turned to other fisheries or looked elsewhere for the elusive albacore. The few fish landed ranged in weight from 12 to 25 pounds. One vessel landed approximately 20,000 pounds of albacore caught at the Midway Islands. Total landings for July were 67,880 pounds.

By August, the majority of the albacore fleet had moved northward into Oregon and Washington waters. There was limited activity off Morro Bay at the 1500 Fathom spot, and at Davidson and Pioneer Seamounts. Jig boats working the area reported catches of 7 to 50 fish/day with average fish weight at 13 pounds. A few 25 to 35 pound fish were brought in. The largest portion of albacore caught off central California were taken incidentally by drift gill net (DGN) boats, while all albacore landed in Crescent City, Eureka and Fort Bragg were caught by vessels fishing north of Cape Blanco, Oregon. The landings at the three northern California ports comprised 57% of the monthly landings. The total landings for August were 230,290 pounds.

During September, jig boats reported spotty activity 250 miles west of Cape Mendocino; however most fishing activity occurred 50 to 130 miles west of Morro Bay. The 1500 Fathom spot and Davidson Seamount were still producing small amounts of fish (2 fish/day for DGN and 10 fish/day for Jig boats). Albacore average weight increased from 13 to 15 pounds in September. Several 35 to 55 pound fish were caught near Davidson Seamount. Sportboat activity picked up with scores of 1 to 12 fish/angler being reported. Total landings for September were 1,246,900 pounds.

Although the weather continued to be good in October, the fishing slowed to a trickle with most boats giving up for the season. Sport boats persevered through the month with scores of 2 to 5 albacore per angler. They fished the waters west of Point Sur to Davidson Seamount. Total landings for October were 566,650 pounds.

The 1988 landings totaled 2.6 million pounds, far below the 25-year average of 18 million pounds. While there were limited catches of albacore in California, the high availability of both salmon and albacore further north restricted effort in this state.

The high price per ton moderately compensated for the general lack of fish. The canneries offered \$1700 per ton for fish greater than 9 pounds and \$1200 per ton for fish 9 pounds and under. This is a 15% increase over last year and is 41% higher than the price paid in 1986.

### Oregon

The fishery got started about mid-July with catches of 50 to 200 fish per day about 150 to 200 miles off the Southern Oregon coast. Fishing improved to 100 to 300 fish per day and extended Northward to about 120 to 200 miles off Newport. The fish averaged about 12 pounds. Landings in July were 4,860 pounds.

In August the successful fishing improved all along the Oregon coast and extended to central Washington. The best fishing during the month was centered off Newport where consistent catches of 200 to 400 fish per day were made, with high scores over 600 fish per day. Fishing off Coos Bay and the Columbia River averaged somewhat lower in the 100 to 300 fish per day range. Buyers all along the coast were paying the cannery price of \$1700 per ton for fish over 9 pounds. Landings in August totaled 3,093,799 pounds.

Fishing success in September dropped off after the first week and rough weather caused many of the boats to quit. When boats did get back out the fish were more scattered and although many fishermen reported seeing many jumping and "breezing schools" they were unsuccessful in getting them to bite a jig. Some bait boats were very successful during the last half of September with one report of a bait boat catching 1700 fish in one day. Rough weather at the end of the month encouraged more boats to quit for the season. Landings in September were 747,948 pounds.

Fishing in October dropped off rapidly as boats quit for the season or headed back to California. Landings in October were 105,846 pounds, and the total for the season amounted to 3,952,453 pounds.

### Washington

Landings of albacore at Washington ports began in early August from jig boats working the area 150 to 200 miles off Newport, Oregon, with some fishing effort shifting to the north and shoreward off the Columbia River by mid month. Daily catches averaged from 100 to 200 fish with high scores in excess of 600 fish per day. Fish averaged about 12 pounds. August landing totals were 1,943,696 pounds.

Good catches continued into September with fishing effort extending from Oregon to Cape Flattery, Washington between 50 to 200 miles off shore. Sport boats out of Washington and northern Oregon ports reported good catches as close as 30 miles offshore. Sport vessels experienced their most productive albacore fishery since the late 1970's. There was even a report of a brief period of jig boat catches off the Dellwood Knolls north of Vancouver Island. Bait boats fishing off Washington reported daily catches averaging 400 to 700 fish per day with high scores up to 1700 fish per day of fish ranging from 18 to 20 pounds. Although there still appeared to be a fair concentration of fish in the area toward the end of the month, many jig boats reported difficulty in inducing fish to bite and effort greatly diminished during the latter part of September. Washington landing totals for the month of September were 1,949,448 pounds.

A few bait boats and jig boats continued to work Pacific northwest waters in October and landed 180,538 pounds of albacore. This brought Washington landing totals to 4,073,682 pounds which was more than three times last year's landing total and closely approaches the level of the 25-year average. This is the highest landing total for Washington since 1978.

Compiled by Russell Porter —Pacific States Marine Fisheries Commission

### Other Contributors

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

Year	California	Oregon	Washington	Total
1960	35,113	4,563	526	40,202
61	29,123	3,250	456	32,829
62	36,622	8,949	365	45,936
63	48,860	11,400	527	60,787
64	42,551	4,452	1,055	48,058
65	23,218	12,122	2,048	37,388
66	18,189	18,041	1,101	37,331
67	17,858	29,243	1,240	48,341
68	15,077	37,752	3,050	55,879
69	14,722	29,828	1,240	45,790
1970	29,932	21,782	4,390	56,104
71	36,117	8,420	5,250	49,787
72	21,001	23,056	16,238	60,295
73	8,641	16,350	14,446	39,437
74	11,806	25,225	17,983	55,014
75	15,413	17,166	16,297	48,876
76	27,754	5,934	7,202	40,890
77	15,905	4,420	4,948	25,273
78	21,549	11,285	5,008	37,842
79	8,508	3,107	830	12,445
1980	11,958	3,505	1,299	16,762
81	20,584	7,727	1,928	30,239
82	9,439	1,913	572	11,924
83	16,732	3,410	1,168	21,310
84	26,520	1,631	142	28,293
85	14,410	1,525	377	16,312
86	7,018	2,461	1,862	11,341
87	3,090	2,279	1,156	6,524
25-year average	18,874	12,161	4,454	36,090
1988*	2,600	3,952	4,074	10,626

\*Preliminary

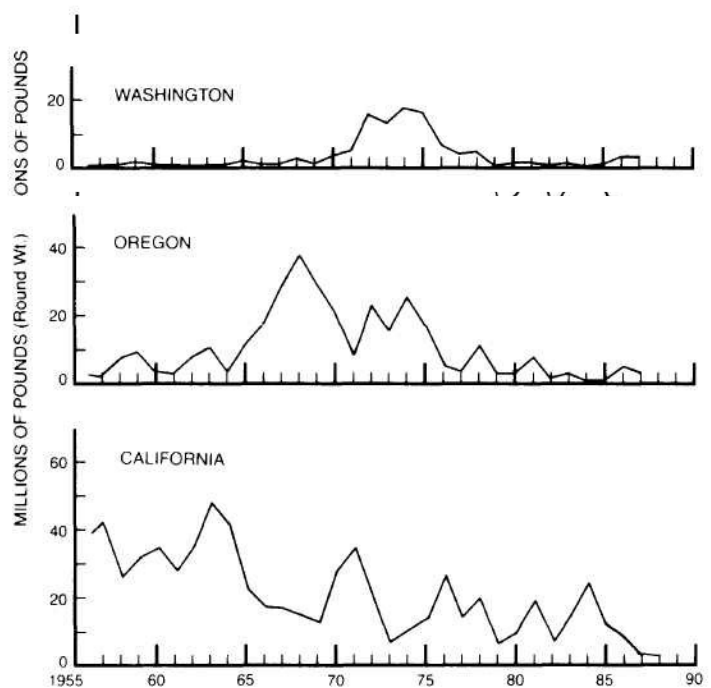


Figure 1. Combined annual landings of albacore in California, Oregon and Washington, 1956-1988.

Figure 2. Annual albacore landings by State, 1956-1988.

## PACIFIC HALIBUT FISHERY IN 1988

### Commercial Fishery

Commercial halibut fishing in 1988 continued a recent trend of coast wide high catches (Table 1). Preliminary landings and number of fishing days by management area for 1988 are presented in Table 2. The fishery landed 74.2 million pounds dressed weight (44,800 mt round weight), just slightly over the 73.9 million pound (44,600 mt) catch limit set by the International Pacific Halibut Commission. The 1988 catch is the second highest on record, surpassed only by the 74.9 million pounds (45,200 mt) landed in 1962. Largest abundance and the majority of the catch occurred in the Gulf of Alaska (Alaska Peninsula through Southeast Alaska). Total exploitable biomass of the halibut population in 1988 decreased by about 6 percent to 213.1 million pounds (128,600 mt) for all areas combined. It appears the stock has peaked and is beginning a period of slow decline.

Five management problems identified by the IPHC in recent years continued in 1988: high daily catch rates that jeopardize managing at the catch limit; illegal fishing; dead-loss wastage; poor quality of the landed fish; and safety prob-

lem. Trip limits were again used to hold down the catch when approaching the catch limit. Trip limit criteria was developed by the IPHC in cooperation with a subgroup appointed by the Industry Conference Board. Overall vessel length and historic fishing performance was included in the methodology for assigning quotas to eight different vessel classes. Daily catch rates, although still high, were lower than anticipated as some fishermen chose to participate in alternative fisheries such as herring, salmon, and crab. These two factors resulted in more fishing periods in Area 2C, 3, and 4 in 1988 and in 1987.

High prices, short seasons and large profits are apparently the cause of increased fishing before and after legal openings or in closed areas. In addition to other difficulties, a high level of illegal fishing activity compromises CPUE data.

Efforts by fishermen to increase efficiency continue to cause incidental mortality. During short openings, some fishermen set more gear than can be hauled to be sure that maximum fishing occurs. In such cases, fishing occurs up to the end of the season, and all unretrieved gear is abandoned

the close of the season rather than bleeding and dressing the fish at sea. Bad weather also forces gear to be left. Incidental halibut mortality also occurs when fishermen improperly release undersized halibut; short intense seasons reduce the incentive of fishermen to exercise full care in releasing undersized fish. The amount of halibut killed incidentally in the directed longline fishery is estimated at approximately 2.0 million pounds in 1988.

Maximizing production sometimes leads to compromising quality standards; some fishermen catch fish faster than dressing and icing can occur. Safety is also a concern as fishermen feel compelled to fish in marginal weather during short openings.

#### Sport Fishery

Continuing a decade long trend of increasing catches, the recreational harvest of halibut will be slightly above four million pounds in 1988. The sport fishery harvest is summarized by regulatory area for 1984-1988 in Table 3. Most of the catch is harvested along the Kenai Peninsula and in Southeast Alaska. The sport fishery in Oregon and Washington required significant restrictions to hold the harvest within catch limits in 1988.

Compiled by Calvin L. Blood and Robert J. Trumble,  
International Pacific Halibut Commission.

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

Year	Canadian	U.S.	Total
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	56.7
86	11.0	58.0	69.0
87	12.2	57.3	69.5
88*	12.9	61.3	74.2

\*Preliminary

Table 2. Preliminary catch summary of the 1988 Pacific Halibut fishery.

Regulatory Area	Catch Limit (millions lbs.)	Fishing Days	Catch (millions lbs.)
2A	0.48	5	0.39
	*	245	.10
2B	12.5	14	12.87
2C	11.5	4	11.46
3A	36.0	4	37.77
3B	8.0	4	6.96
4A	1.9	6	1.93
4B	2.0	16	1.59
4C	0.7	17	.71
4D	0.7	12	.45
4E	0.1	102	0.01
TOTAL	73.88		74.24

\*150,000 pounds of the Area 2A catch limit was allocated by the United States Government to eleven Northwest Indian treaty tribes.

Table 3. Pacific coast recreational halibut landings by regulatory area, 1984-1988 (millions of pounds, dressed weight).

Area	1984	1985	1986	1987	1988*
2A	.10	.18	.26	.47	.26
2B	.12	.53	.56	.70	.80
2C	.62	.68	.73	.78	.83
3A	1.04	1.23	1.92	2.05	2.15
4	—	.01	.01	.02	.02
Total	1.88	2.63	3.48	4.02	4.06

\*Preliminary estimates

# GROUND FISH FISHERY IN 1988

The preliminary estimate of 1988 groundfish landings by North American fishermen fishing the northeast Pacific Ocean is 2,492,814t, a 19% increase over 1987. Recreational catch estimates for 1988 are incomplete and are not available in metric tons (t) 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 59% (1,481,530t) of the total commercial groundfish harvest. Trawl fisheries dominated the domestic catch accounting for 93% (937,171t) of the aggregate catch followed by longline (6% or 55,847t), "other gear" (1% or 12,179t) and pot (0.8% or 8,525t).

U.S. domestic groundfish landings increased 86% over 1987 landings. This was a result of increases in Alaska landings of 103% and a 42% increase in California landings. Landings in Oregon and Washington remained similar to 1987 with a 2% increase in Oregon and a 5% decrease in Washington landings. Canadian landings were down 6% as compared with 1987. U.S. and Canadian landings combined showed a 75% increase over 1987 (Table 2.)

## Alaska

Alaska trawl landings were up 92% over 1987 landings. This was primarily a result of a 131% increase in pollock landings, a 28% increase in sablefish landings, a 74% increase in Pacific cod landings and a 543% increase in Rock sole landings (Table 3.)

## Washington

Washington trawl landings in 1988 increased a modest 1% from 1987. More species showed declines in landings than showed increases. Dover sole, Pacific ocean perch and

Pacific cod had the greatest percentage increase. Longline landings fell 30% from 1987 to 1988. There was a 15% decline in longline landed sablefish, presumably as a result of declining quotas.

## Oregon

Oregon trawl landings rose 9% over 1987. Most all species showed an increase over landings in 1987 with the exception of sablefish and english sole. Lingcod and Pacific cod landings increased 52% and 55% respectively, while Pacific ocean perch landings rose 27% and "other rockfish" landings rose 5%. Longline, pot and miscellaneous gear landings all declined in 1988 (Table 5-7).

## California

California 1988 trawl landings increased 58% over 1987. This was a result of a 476% increase in Pacific whiting landings in 1988. Sablefish and rockfish landings were also up, but all other species showed a decline over 1987 landings.

## British Columbia

Canadian landings of groundfish (excluding halibut) were 64,775t in 1988, a decrease of 6% from 1987 levels. Trawlers landed 55,388t, 86% of the total Canadian catch and 8% below 1987 catch levels. Major species in the trawl landings were other rockfish (35%), Pacific cod (20%), Pacific ocean perch (13%) and Pacific (whiting) hake (11%).

Canadian landings of groundfish caught by gear other than trawl totalled 9,524t. Trap gear accounted for 3,693t (99.7% sablefish); longline accounted for 4,873t (60% dogfish, 16% rockfish and 15% sablefish); and troll/handline gear accounted for 958t (54% rockfish and 45% lingcod).

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Table 1. Total commercial groundfish landings in metric tons (t) by region for 1987 and 1988 with percent change.

Region	1987 t	1988 t	Percent Change
Alaska	407,910	827,833	+103
Washington	24,937	23,783	- 5
Oregon	30,615	31,320	+ 2
California	44,813	63,573	+ 42
Joint Venture	1,494,054	1,430,732	- 2
Total U.S.	2,002,329	2,377,241	+ 19
Canada (B.C.)	69,165	64,775	- 6
Canada Joint Venture	48,863	50,798	+ 4
Total Canada	118,028	115,573	- 2
Total U.S.-Canada	2,120,357	2,492,814	+ 18

Table 2. Domestic groundfish landings in metric tons (t) by region for 1987 and 1988 with percent change.

Region	Trawl		Longline		Pot		Other Gear		Total		Percent Change
	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	
Alaska	362,964	783,147	42,362	41,740	2,307	2,668	277	277	407,910	827,833	+103
Washington	18,751	18,880	4,822	3,387	0	180	1,364	1,336	24,937	23,783	- 5
Oregon	25,950	28,204	1,448 <sup>1/</sup>	833 <sup>1/</sup>	1,704	1,253	1,513	1,030	30,615	31,320	+ 2
California	37,571	51,665	2,863	2,575	364	755	4,015	8,578	44,813	63,573	+ 42
Total U.S.	445,236	881,896	51,495	48,535	4,375	4,856	7,169	11,221	508,275	946,509	+ 86
Canada (B.C.)	60,518	55,275	4,352	4,873	3,089	3,669	1,206	958	69,165	64,775	- 6
Total U.S. & Canada	505,754	937,171	55,847	53,408	7,464	8,525	8,376	12,179	577,440	1,011,284	+ 75

<sup>1/</sup>excludes halibut (1988-247 mt) (1987-128 mt)



Table 3. Domestic trawl landings in metric tons (t) for food, 1987 & 1988 (preliminary) & 10-year mean (1978-1987) 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	1987	0	523	852	747	2,122	445	2,567
	1988	0	451	862	682	1,995	784	2,779
	% change	0	-14	1	-9	-6	76	8
	10-yr mean	0	514	923	863	2,300	336	2,636
English sole	1987	0	924	594	1,118	2,636	754	3,390
	1988	0	905	572	894	2,371	875	3,246
	% change	0	-2	-4	-20	-10	16	-4
	10-yr mean	0	1,000	712	1,468	3,180	842	4,022
Dover sole	1987	0	1,603	6,017	10,462	18,082	633	18,715
	1988	0	2,246	7,364	7,967	17,577	1,293	18,870
	% change	0	40	22	-24	-3	104	1
	10-yr mean	0	2,271	6,102	9,878	18,251	980	19,231
Rock sole	1987	3,610	33	1	4	3,648	887	4,535
	1988	23,195	28	5	3	23,231	1,956	25,187
	% change	543	-15	400	-25	536	121	455
	10-yr mean	-	110	7	4	121	980	1,101
Pacific cod	1987	63,741	2,292	641	77	66,751	13,896	80,647
	1988	110,637	2,770	993	17	113,917	11,067	124,984
	% change	74	21	55	-78	71	-20	549
	10-yr mean	-	6,518	226	-	6,744	6,413	13,157
Lingcod	1987	2	867	558	568	1,995	2,401	4,396
	1988	TR	625	847	484	1,956	2,499	4,455
	% change	-	-28	52	-15	-2	4	1
	10-yr mean	-	1,087	881	843	2,811	2,414	5,225
P. ocean perch	1987	6,728	458	544	98	7,828	6,334	14,162
	1988	2,909	571	690	31	4,201	6,988	11,189
	% change	-57	25	27	-68	-46	10	-21
	10-yr mean	-	NA	762	31	793	5,373	6,166
Other rockfish	1987	14,852	7,527	12,476	10,524	45,379	16,515	61,894
	1988	17,352	7,751	13,153	10,718	48,974	18,814	67,788
	% change	17	3	5	2	8	14	9
	10-yr mean	-	10,576 <sup>1/</sup>	14,035	12,427	37,038	8,429	45,467
Sablefish	1987	5,247	832	2,520	1,671	10,270	407	10,677
	1988	6,728	676	2,120	2,630	12,154	629	12,783
	% change	28	-19	-16	57	18	55	20
	10-yr mean	-	1,020	2,298	3,014	6,332	286	6,618
Pacific whiting	1987	0	400	176	4,613	5,189	13,275	18,464
	1988	0	352	246	26,568	27,166	6,354	33,520
	% change	0	-12	40	476	424	-52	82
	10-yr mean	0	1,999	254	1,475	3,728	4,379	8,107
Walleye pollock	1987	255,245	61	0	0	255,306	1,270	256,576
	1988	589,291	31	0	0	589,322	721	590,043
	% change	131	-49	0	0	131	-43	130
	10-yr mean	-	566	0	0	-	1,578	-
Total above Species	1987	349,425	15,520	24,379	29,882	419,206	56,817	476,023
	1988	750,112	16,406	26,852	49,994	843,364	51,980	895,344
Total all species	1987	407,910	18,751	25,950	32,707	485,318	60,518	545,836
	1988	783,147	18,880	28,204	51,664	881,895	55,275	937,170
	% change	92	1	9	58	82	-9	72

<sup>1/</sup>Washington reported 10 year mean of rockfish landed catch includes Pacific ocean perch. Alaska flatfish landed catch reported in total of all species. <sup>2/</sup>Average for all rockfish including Pacific Ocean Perch.

Table 4. Catch in metric tons (t) by species group and region of joint venture fisheries in 1988 with 1987 totals.

Species	Bering Sea	Gulf of Alaska	Total Alaska	Calif., Oregon Washington	Total U.S. 125,776	Canada (B.C.)	Total
Pacific whiting	NA	NA	NA	125,776		50,354	176,130
Pollock	785,211	152	826,565	—	826,565	300	826,865
Yellowfinsole	213,322	—	213,323	—	213,323	0	213,323
Other flatfish	114,958	1,781	116,824	1	116,825	0	116,825
Pacific cod	106,592	1,661	111,552	—	111,552	0	111,552
Atka mackerel	43	—	19,620	—	19,620	0	19,620
P. ocean perch	—	—	—	TR	TR	0	TR
Other rockfish	63	4	2,092	87	2,184	144	2,328
Sablefish	9	37	51	9	60	0	60
Otherfish	14,360	129	14,802	31	14,833	0	14,833
Total 1987	1,284,070	32,526	1,387,959	106,095	1,494,054	48,863	1,542,917
Total 1988	1,234,556 -	3,764 -	1,304,829 -	125,903	1,430,732 -	50,798 4	1,481,530
% Change	4	88	6	19	4		- 4

Table 5. Longline landings in metric tons (t) by major species and region in 1987 and 1988.

Sablefish	Lingcod		Rockfish		Pacific Cod		Other		Total Region		1987	
	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988		
Alaska	27,060	30,095	142	173	2,002	1,976	9,371	6,502	196	2,994	38,771	41,740
Washington	2,536	2,159	73	17	486	237	36	20	1,691	954	4,822	3,387
Oregon <sup>1/</sup>	1,002	658	41	25	394	141	2	1	9	8	1,448	833
California	913	420	176	212	1,590	1,824	1	-	144	76	2,824	2,632
Total U.S.	31,511	27,698	432	427	4,472	4,178	9,410	6,523	2,040	4,032	47,865	48,592
Canada (B.C.)	1,133	728	455	383	871	793	9	10	1,884	2,959	4,352	4,873
Total U.S. & Canada	32,644	28,426	887	810	5,343	4,971	9,419	6,533	3,924	6,991	53,465	52,217

<sup>1/</sup>Does not include halibut.

Table 6. Pot landings in metric tons (t) by major species and region in 1987 and 1988.

Region	Sablefish		Lingcod		Rockfish		Other		Total	
	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988
Alaska	1,348	872	0	TR	3	10	916	1,786	2,267	2,668
Washington	0	180	0	0	0	0	0	0	0	180
Oregon	1,689	1,230	TR	2	13	11	2	10	1,704	1,253
California	488	611	1	3	22	77	18	64	529	755
Total U.S.	3,525	2,893	1	5	38	98	936	1,860	4,500	4,856
Canada (B.C.)	3,043	3,658	1	0	45	11	0	0	3,089	3,669
Total U.S. & Canada	6,568	6,551	2	5	83	109	936	1,860	7,589	8,525

Table 7. Landings in metric tons (t) from miscellaneous gears by major species and region in 1987 and 1988.

Region	Sablefish		Lingcod		Rockfish		Pacific Cod		Other		Total	
	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988
Alaska	265	—	80	125	61	85	396	58	6,751	9	7,553	277
Washington	24	5	173	157	705	823	15	30	447	321	1,364	1,336
Oregon	29	32	119	105	1,278	838	16	13	71	115	1,513	1,103
California	347	336	255	287	4,601	4,232	3	1	1,496	2,785	6,702	7,641
Total U.S.	665	373	627	674	6,645	5,978	430		8,765	3,230	17,132	10,357
Canada (B.C.)	56	3	626	429	503	521	8	1	13	4	1,206	958
Total U.S. & Canada	721	376	1,253	1,103	7,148	6,499	438	103	8,778	3,234	18,338	11,315

Table 8. Estimated recreational landings in metric tons (t) by major species and region in 1987 and 1988.

Region	Rockfish		Lingcod		Flatfish		Pacific Cod		Other		Total	
	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988
Alaska <sup>1</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Washington <sup>2</sup>	740	487	156	59	42	6	110	3	141	8	1,189	563
Oregon	252	302	57	62	39	35	0	0	15	19	363	418
California	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total U.S.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canada (B.C.) <sup>3</sup>	136,270	194,735	65,789	65,929	0	0	0	065,553	71,045	267,612	331,709	
Total U.S. & Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

<sup>2</sup>/1987 includes Puget Sound and coastal data. 1988 is coastal data only. <sup>3</sup> Canada catches are reported in numbers of fish

## DUNGENESS CRAB FISHERY IN 1987-1988

Pacific Coast Dungeness crab landings totaled 47.9 million pounds, about 17.9 million more than 1986-87 and about 10.7 million pounds above the long term average. Production from northern California, Oregon and coastal Washington was 30.5 million, about 15.8 million pounds higher than last season and 4 million pounds above the long term average. Ex-vessel prices at season opening were \$1.25/lb and declined to \$1.00 in Oregon and Washington later in the season.

### ALASKA

Landings for CY 1988 totals 10.1 million pounds, an increase of 1.1 million pounds over 1987. Production from the five leading management areas was: Southeast Alaska — 3.0 million; Yakutat—3.5 million; Kodiak — 2.1 million; Cook Inlet —0.7 million and Prince William Sound —0.6 million.

### BRITISH COLUMBIA

British Columbia landings for 1988 were 2.6 million pounds, down 38% from 1987.

### WASHINGTON

The coastal fishery produced 16.25 million pounds, the third highest mark since 1950, and far above the 1986-87 seasonal landings of 3.2 million pounds. Fleet size was 144 boats. The Puget Sound fishery produced 1,676,000 pounds, slightly above average.

### OREGON

Oregon landings totaled 8.6 million pounds, an increase of 3.9 million pounds from the 1986-87 season, but still below the long term average of 10 million pounds. There were 309 boats in the fishery.

### CALIFORNIA

California landings totaled 8.7 million pounds, a slight increase over 1986-87 landings of 8.4 million pounds. The ports of Crescent City, Trinidad, Eureka and Fort Bragg received 2.84, 0.69, 1.41 and 0.68 million pounds for a total of 4.94 million pounds, about 1.85 million pounds below the previous season.

The San Francisco region produced 3.1 million pounds, the best catch since the 1959-60 season when 4.8 million pounds were landed, and almost double the 1986-87 production.

Compiled by Ron W. Warner, California Department of Fish & Game

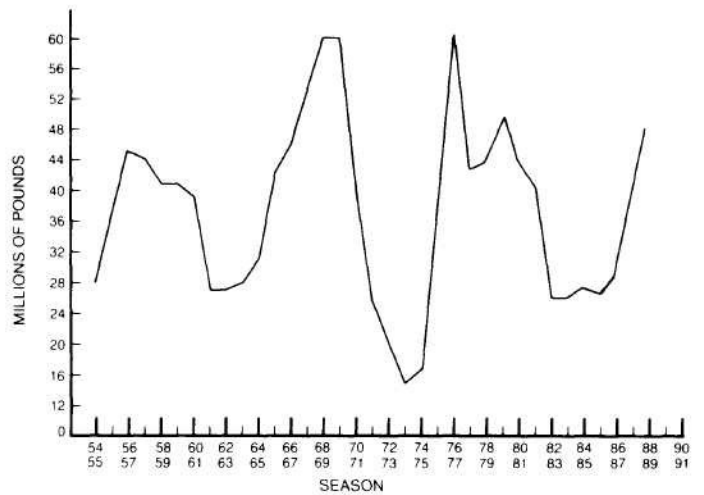


Figure 1. Pacific coast Dungeness crab landings by season including British Columbia, 1954-1988.

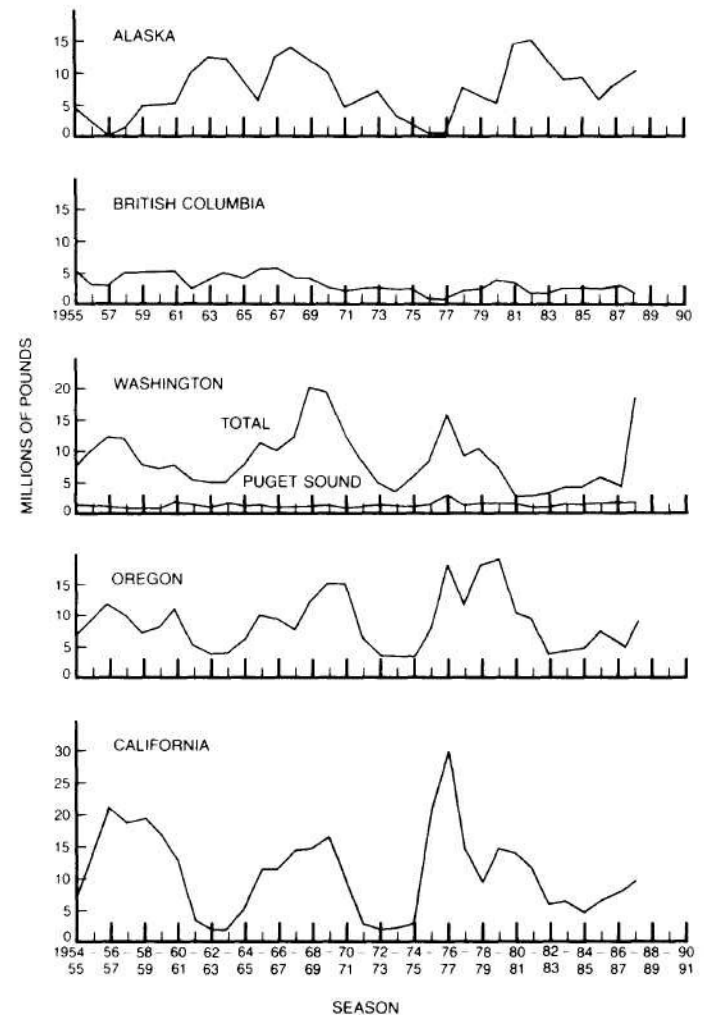


Figure 2. Dungeness crab landings by season 1954-55 through 1987-88, except Alaska and British Columbia seasons are all in the pertinent calendar years.

## TROLL SALMON FISHERY IN 1988

### ALASKA

Opening of the 1988 general summer troll season was delayed until July 1, or 11 days later than the June 20 opening in 1986 and 1987, to reduce the period of chinook non-retention. The chinook troll season was closed at midnight on July 12, when the inseason target catch level was reached. The 12-day summer troll chinook season was the shortest on record eclipsing the 23-day and 26-day seasons in 1987 and 1986, respectively.

Troll closures for coho conservation included two ten-day region-wide closures (July 26-August 4, August 15-24); a three-day closure (September 1-3); and closure of all central and southern portions of the region beginning September 1 and continuing for the remainder of the summer season.

In 1988, the Southeast Alaska summer troll fishery harvested an estimated 3.2 million pounds round of chinook, which is below the ten-year average of 4.9 million pounds round. This fishery also harvested 3.9 million pounds round of coho, which is also below the ten-year average of 10.3 million.

### WASHINGTON

Washington trollers targeted on chinook in a coast-wide, all species except coho fishery which was open May 1 through June 14, for a total of 45 days. There was no all-species troll fishery in Washington waters in 1988.

Landings from these fisheries, combined with those from the Treaty Indian commercial troll fishery produced 1.5 million pounds round of chinook and 0.3 million pounds round of coho. 1988 chinook catches were higher than both the 1987 level of 1.1 million pounds round and the 10-year mean of 1.1 million pounds round. Conversely, the coho catches were lower than both the 1987 level of 0.7 million pounds round and the ten-year mean of 1.7 million pounds round.

### OREGON

The area north of Cape Falcon had a chinook only season from May 1 through June 14. There was no coho season in this area in 1988. South of Cape Falcon to Orford Reef Red Buoy there was a chinook fishery from May 1 through October 31 with the exception of closures of July 14 and 15 from Cape Arago to Orford Reef Red Buoy.

The south coast had some limited fishing with a state waters chinook season May 1-4 between Sisters Rocks and Chetco Point, and all-species season June 5-7 between Orford Reef Red Buoy and the OR/CA border. There were also chinook only fisheries in state waters September 1-14 between Sisters Rocks and Mack Arch, October 1-31 from Orford Reef Red Buoy to Humbug Mountain and November 1-30 from Cape Blanco to Humbug Mountain.

The all-species season was open from July 1 through August 19 from Cape Falcon to Cape Arago with a coho ratio fishery in effect from Cascade Head to Cape Arago. After a 2 day closure on July 14 and 15, the all-species season reopened without any species restriction, including the area from Cape Arago to Orford Reef Red Buoy.

The 5.0 million pounds round weight of chinook landed was 17% below the 1987 record, but it was almost double the 1978-87 mean of 2.6 million pounds. The 1988 coho landings of 3.8 million pounds round weight was the highest since 1979, and was 47% above the 1978-87 mean of 2.4 million pounds.

### CALIFORNIA

The troll season north of Horse Mountain opened June 5 and closed June 8, paralleling the Oregon season south of Orford Reef Red Buoy. A special troll fishery inside six miles from Punta Gorda to Trinidad Head (centering on the Eel River mouth) opened September 1 and closed September 8. South of Horse Mountain to Cape Vizcaino the troll season was open from June 5 through September 30, except for a three-day closure in mid-July north of Point Arena. Between Horse Mountain and Point Arena, only Sunday through Wednesday fishing was permitted from June 5 through September 30. Minimum size limits statewide for chinook and coho were 26 and 22 inches total length, respectively, and barbless hooks were required.

California preliminary troll chinook landings were 16.5 million pounds round, 160% higher than the previous ten-year average, 60% higher than 1987, and higher than any previous year in California since 1916, when records were first kept. Preliminary landings of coho salmon were 376,000 pounds round, only 64% of the previous ten-year average.

Compiled by Rick Moore, Washington Department of Fisheries

#### Other Contributors:

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Table 1. Estimated landings of troll caught chinook and coho salmon in 1988 and 10-year (1978-1987) average (round weights in millions of pounds). All 1988 data are preliminary.

Species = Chinook		
Region	1988	Average
Alaska	3.2	4.9
British Columbia	11.2	10.4
Washington	1.5	1.1
Oregon	5.0	2.6
California	16.5	6.3
<b>TOTAL</b>	<b>37.4</b>	<b>25.3</b>
Species = Coho		
Region	1988	Average
Alaska	3.9	10.3
British Columbia	13.1	16.4
Washington	0.3	1.7
Oregon	3.8	2.4
California	0.4	0.6
<b>TOTAL</b>	<b>21.5</b>	<b>31.4</b>
Species = Chinook + Coho		
Region	1988	Average
Alaska	7.1	15.2
British Columbia	24.3	26.8
Washington	1.8	2.8
Oregon	8.8	0.5
California	16.9	6.9
<b>TOTAL</b>	<b>58.9</b>	<b>56.7</b>

Table 2. Pacific Coast commercial troll Chinook salmon landings in millions of pounds round, 1956-88. All 1988 data are preliminary.

Table 3. Pacific Coast commercial troll coho salmon landings in millions of pounds round, 1956-1988. All 1988 data are preliminary.

Year	British		Wash-		California	Total	Year	British		Wash-		California	Total
	Alaska	Columbia	ington	Oregon				Alaska	Columbia	ington	Oregon		
1956	3.9	9.8	4.0	4.4	11.3	33.4	1956	3.9	12.9	5.3	3.2	0.5	25.7
1957	5.1	9.7	4.8	3.0	5.3	27.9	1957	7.5	14.4	5.0	3.9	0.6	31.4
1958	5.7	9.1	3.3	1.8	4.1	24.0	1958	5.2	15.6	4.7	1.3	0.1	26.9
1959	6.7	8.7	2.7	0.5	7.5	26.1	1959	5.8	11.7	3.7	1.0	0.3	22.5
1960	4.8	6.4	1.7	1.5	7.0	21.4	1960	2.5	9.3	1.5	0.8	0.1	14.2
1961	2.9	6.0	2.5	1.4	9.3	22.1	1961	3.6	14.8	4.2	2.3	0.6	25.5
1962	3.9	5.9	2.4	0.7	7.2	20.1	1962	5.2	16.4	4.7	2.2	0.4	28.9
1963	4.1	6.8	2.8	1.6	7.9	23.2	1963	6.3	16.1	4.0	3.0	1.2	30.6
1964	6.0	8.5	2.1	0.7	8.7	26.0	1964	5.7	20.5	4.6	4.2	2.2	37.2
1965	5.1	8.8	1.3	0.7	9.3	25.2	1965	6.2	23.5	7.4	4.8	1.8	43.7
1966	4.8	11.4	2.0	0.9	6.9	26.0	1966	4.7	24.3	6.1	5.2	4.0	44.3
1967	4.3	10.4	1.7	1.3	4.4	22.1	1967	4.2	14.1	6.2	8.3	3.9	36.7
1968	5.8	10.8	1.9	1.1	5.3	24.9	1968	5.8	22.6	4.5	5.1	2.7	40.7
1969	5.1	10.8	2.3	1.4	5.6	25.2	1969	3.1	12.7	3.3	3.6	1.4	24.1
1970	5.1	9.9	2.5	1.9	6.1	25.5	1970	2.2	17.3	6.1	8.7	1.5	35.8
1971	4.9	15.2	3.1	1.2	5.7	30.1	1971	3.1	21.4	7.9	10.1	3.7	46.2
1972	3.3	14.1	2.6	1.5	6.2	27.7	1972	5.7	15.9	3.9	5.6	1.2	32.3
1973	5.0	12.7	3.8	4.0	8.7	34.2	1973	4.5	16.2	4.3	5.9	2.3	33.2
1974	5.1	13.5	4.3	2.6	5.8	31.3	1974	6.7	15.6	6.4	8.3	4.3	41.3
1975	4.4	12.6	3.3	3.0	6.6	29.9	1975	1.5	9.5	5.1	4.7	1.3	22.1
1976	3.5	13.8	4.4	2.2	5.7	29.6	1976	4.3	15.3	7.2	10.4	3.3	40.5
1977	4.7	12.1	3.3	4.0	6.6	30.7	1977	4.9	14.4	4.3	3.0	0.2	26.8
1978	6.8	13.2	2.4	2.2	6.0	30.6	1978	8.0	14.9	3.2	3.2	1.5	30.8
1979	6.0	11.1	2.0	3.0	7.9	30.0	1979	7.1	17.7	4.2	5.3	1.2	35.5
1980	5.6	11.6	1.9	2.5	6.4	28.0	1980	5.4	15.3	2.3	2.5	0.3	25.8
1981	4.9	10.2	1.4	1.8	6.8	25.1	1981	6.5	11.3	2.0	3.8	0.5	24.1
1982	4.7	11.9	1.9	2.7	8.5	29.7	1982	10.0	15.8	2.2	3.1	0.6	31.7
1983	5.0	6.5	0.8	0.8	2.4	15.5	1983	9.6	13.3	0.3	1.3	0.3	24.8
1984	4.2	9.8	0.2	0.6	2.3	17.1	1984	11.2	17.3	0.3	0.1	0.4	29.3
1985	3.8	9.8	0.6	2.3	5.2	21.7	1985	13.5	17.3	0.6	0.6	0.1	32.1
1986	3.7	8.6	0.7	3.9	7.6	24.5	1986	13.9	23.0	0.7	2.2	0.8	30.1
1987	4.9	11.6	1.1	6.0	9.5	33.1	1987	8.3	18.5	0.7	2.2	0.3	30.0
1978-87							1978-87						
Mean	4.9	10.9	1.3	2.6	6.3	26.0	Mean	9.3	15.9	1.6	2.4	0.5	29.7
1988	3.2	11.2	1.5	5.0	16.5	37.4	1988	3.9	13.1	0.3	3.8	0.4	21.5

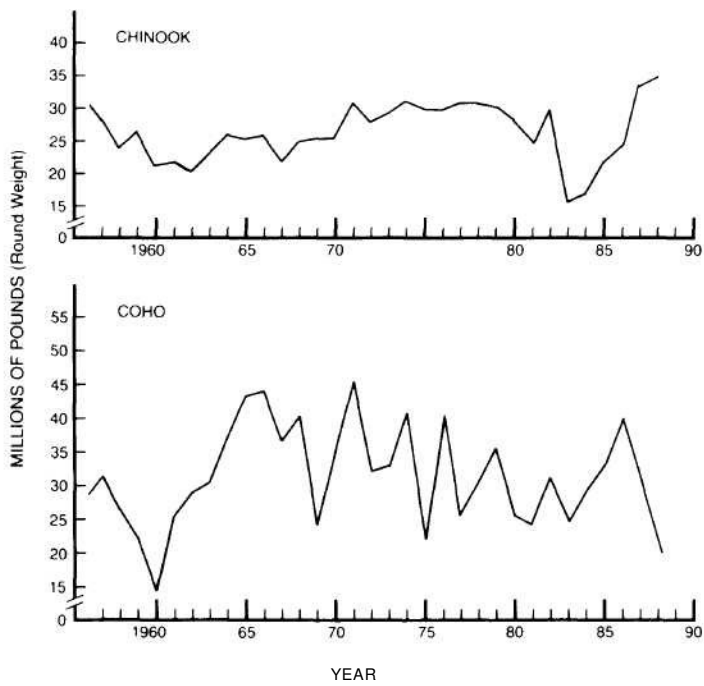


Figure 1. Pacific Coast annual landings of troll caught Chinook and coho salmon, 1956-1987 and preliminary 1988.

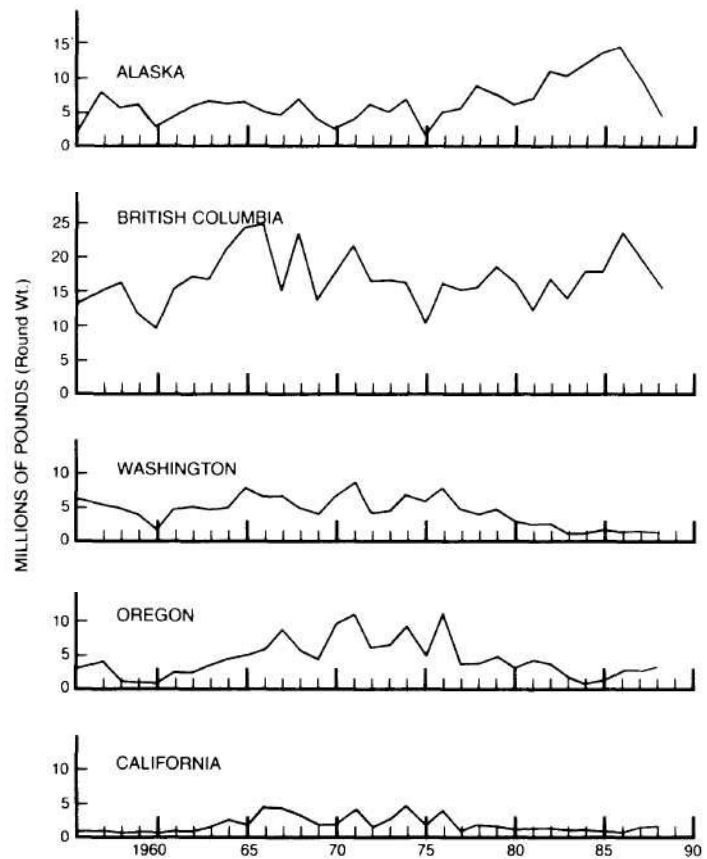


Figure 3. Annual troll coho salmon landings by area, 1956-1987 and preliminary 1988.

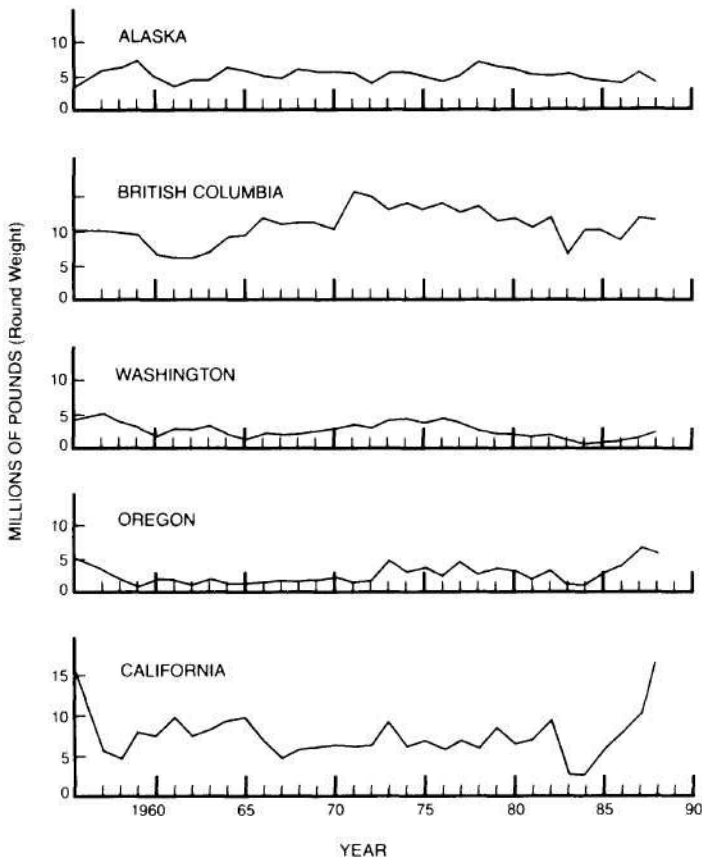


Figure 2. Annual troll Chinook salmon landings by area, 1956-1987 and preliminary 1988.

## SALMON AND STEELHEAD SPORT CATCHES IN 1987 IN THE PACIFIC COAST STATES

### ALASKA

Alaska anglers harvested 969,900 salmon and 5,914 steelhead in 1988 (Table 1). The salmon harvest was well above the record harvest of 1986 (720,500). The total harvest included 116,402 chinook salmon, 235,435 coho salmon, 478,243 sockeye salmon, 119,070 pink salmon and 20,787 chum salmon.

### CALIFORNIA

The 1987 ocean sport salmon catch, estimated at 239,000 fish, was up 49% from the 1986 harvest of 160,000 fish and was up 80% from the ten-year average. Coho salmon made up 19% of the ocean sport salmon catch in 1987. Steelhead catches are not estimated in California and no catch data is available.

### IDAHO

In 1987, spring chinook hatchery returns exceeded escapement needs. Sport fishing was permitted and resulted in anglers fishing 5,000 days to harvest 700 salmon in the terminal area of the Rapid River Hatchery fishery.

The 1987 steelhead run to Idaho declined relative to the 1986 record harvest. In 1987, anglers fished 205,965 angler days to harvest 19,000 steelhead.

### OREGON

Oregon recreational fishery effort for 1987 was 255,100 ocean salmon angler trips. The sport catch was 236,900 salmon and 162,500 steelhead. The salmon catch was made up of 58,600 chinooks and 177,400 coho salmon. The steelhead catch is 3% above the ten year average (1977-1986).

### WASHINGTON

The 1.5 million Washington recreational marine (Ocean and Puget Sound) salmon angler trips were slightly higher than the 1.2 million angler trips recorded in 1986.

Marine area chinook catches fell from the 1986 level of 201,531 to 192,745 and were below the ten-year average of 248,852 chinook. Coho catches were down from the 1986 level of 511,640 to 435,266 in 1987 and were below the ten-year average of 469,632 coho.

A total of 51,076 pink salmon were caught by marine sport anglers in 1987. This is 19.9% above the last five odd year average of 42,606.

A total of 134,495 steelhead were harvested by sport anglers in 1987. This is 3.4% above the ten-year average of 130,100.

### Contributors:

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Rick Moore, Washington Department of Fisheries

Table 1. Salmon and steelhead sport harvest, 1987.

State	Chinook	Coho	Pink	Other Salmon <sup>1</sup>	Steelhead	Total
Alaska	116,402	235,435	119,070	499,030	5,914	975,851
Wash.	232,662	455,431	51,036	4,593	134,495	878,257
Oregon	58,600 <sup>2</sup>	177,400 <sup>2</sup>	—	—	162,500	398,500
Idaho	700	—	—	—	19,000	19,700
Calif.	193,590	45,410	—	—	<sup>3</sup>	239,000
<b>Total</b>	<b>601,954</b>	<b>913,676</b>	<b>170,106</b>	<b>503,623</b>	<b>304,809</b>	<b>2,511,308</b>

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

<sup>2</sup>Marine catch only

<sup>3</sup>Unavailable

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

Alaska	California		Idaho		Oregon		Washington		Total Year	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	351.3	166.8	1,320.4	110.0	2,092.1	280.8	
1975	178.0	2.2	125.0		0.0	0.0	329.1	185.5	1,399.4	92.9	2,031.5	281.5	
1976	200.6	2.3	139.0	Steelhead	0.0	2.0	580.7	118.3	1,749.6	89.1	2,669.9	211.7	
1977	381.1	3.7	154.0	catches	3.5	13.0	260.7	145.1	1,191.4	100.0	1,990.7	261.8	
1978	525.4	4.3	128.0	are	7.0	11.5	282.6	200.6	1,107.9	163.1	2,050.9	379.5	
1979	361.2	3.0	138.7	not	closed	5.7	202.3	122.4	1,123.9	94.8	1,826.1	225.9	
1980	531.8	4.8	107.0	estimated	closed	9.1	344.9	203.7	852.9	151.1	1,836.6	368.7	
1981	379.5	3.3	93.4	in	closed	13.0	230.6	155.0	760.1	125.1	1,463.6	296.4	
1982	597.3	3.7	173.8	California	closed	20.5	213.9	135.1	736.9	104.2	1,721.9	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	561.4	149.5	1,435.1	379.5	
1985	619.2	4.7	175.8			2.5	34.5	246.1	188.4	686.3	1,727.4	393.9	
1986	720.5	5.8	150.5			4.0	40.0	234.0	149.5	830.6	1,939.6	363.8	
10-year average	300.8	501.9	4.1	140.4		1.6	18.4	232.7	148.2	872.0	130.1	1,748.6	
1987	969.9	5.9	239.0			0.7	19.0	236.0	162.5	743.7	134.5	2,206.9	304.8

<sup>1</sup> Excluding California catch

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



## SHRIMP FISHERY IN 1988

The 1988 Pacific coast pandalid shrimp landings in the United States and Canada totaled 78.9 million pounds (Table 1), a 4.3% increase over 1987 landings. The increase was a result of increased landings in British Columbia, California and Washington.

Table 1. Annual Pacific Coast pandalid shrimp landings (in 1000's of pounds) by State and Province, 1975-1988.

Year	Alaska	British Columbia	Washington	Oregon	California	Total
1975	98,535	1,728	10,167	23,893	4,993	139,316
1976	129,011	7,723	9,261	25,392	3,400	174,787
1977	116,011	6,176	11,803	48,580	15,633	199,083
1978	73,293	3,460	12,298	56,997	13,167	159,211
1979	50,916	1,578	12,135	29,579	4,992	99,130
1980	52,568	1,500	12,629	30,152	5,050	101,899
1981	28,029	1,841	10,055	25,918	3,670	69,513
1982	16,987	1,200	5,000	18,462	4,550	46,436
1983	7,458	1,200	5,656	6,547	1,132	21,995
1984	9,539	2,009	3,423	4,844	1,485	21,300
1985	4,204	2,969	9,118	14,848	3,293	34,432
1986	4,064	2,400	17,400	33,798	6,800	64,462
1987	2,457	4,700	15,900	44,800	7,800	75,657
Mean	45,621	2,960	10,373	27,985	5,843	92,863
1988	2,521	5,600	18,200	41,484	11,100	78,905

### CALIFORNIA

Statewide California ocean shrimp, *Pandalus jordani*, landings for the 1988 season are 11.1 million pounds, mostly from the northern part of the state.

#### PMFCAREA 92

Landings for the ports of Crescent City and Eureka totaled 10.29 million pounds. Of this total, 9.50 million pounds were from PMFC Area 92, 569 thousand pounds from Area 88 and 88 thousand pounds from Area 86.

Area 92's catch is approximately 1.8 times the 1987 catch and the third greatest ever. California landings from areas 88 and 86 are down from 1987.

An ex-vessel price of \$.50 per pound was agreed upon after a 15-day price strike. After the first landing the price dropped to \$.25 per pound for shrimp counts greater than 140. Another 2-week price strike took place during May and the ex-vessel price was changed to \$.40 per pound for legal shrimp.

#### PMFCAREA 94

Ft. Bragg reported landings of 378 thousand pounds for 1988, which is slightly more than half of the 650 thousand pounds landed last year. The ex-vessel price was the same as Area 92's.

#### PMFCAREA 96

No landings have been reported this season.

#### PMFCAREA 98

A total of 380 thousand pounds was landed in Morro Bay and Avila during the 1988 season. This represents 57% of the final 1987 season totals.

Fishing started during the middle of April after price negotiations reached an agreement at \$.50 per pound which remained stable for the rest of the season.

### ALASKA

The shrimp harvest for the State of Alaska in calendar year 1988 was 2.5 million pounds. This compares to 2.4 million pounds landed during calendar year 1987.

The statewide harvest (lbs) for 1987 and 1988 can be

AREA	1987	1988
Southeast Alaska	2,073,255	1,822,356
Prince William Sound	320,000	273,136
Cook Inlet	17,900	45,877
Kodiak	0	11,372
Chignik/S. Peninsula	0	0
Aleutians	0	837
Bering Sea	0	367,517
Total	2,411,155	2,521,095

The overall condition of the Alaska shrimp stocks would be considered depressed. The statewide harvest for several years during the 1970's exceeded 100 million pounds.

### WASHINGTON

Landings of pink shrimp into Washington this year totaled 18.2 million pounds, a new record. The previous record set in 1986 was 17.4 million pounds, followed in 1987 by 15.9 million pounds. Vessels landing at least one load of pink shrimp numbered 75, with 53 vessels making 5 or more landings. In 1986 and 1987 vessels making 5 or more landings numbered 65 and 56 respectively.

Ex-vessel prices for shrimp were well below prices of 1987. April and early May saw reduced fishing effort as fishermen tied up at the docks to protest low prices. A price of 45 cents/lb was agreed upon, soon followed by split pricing at 50 cents/lb for shrimp with a count at or below 140/lb, and 25 cents/lb for smaller shrimp. By July, the price dropped to 40 and 25 cents with some buyers offering 50 cents/lb for counts under 100 to the pound.

The split pricing this year has led to the introduction of shrimp sorters, or graders, aboard some of the shrimping vessels. The graders allow fishermen to reduce the count per pound of a load of small shrimp by running a portion of the catch through the graders to sort out some of the smaller shrimp. Graders can be used in a positive manner if their use is restricted to sorting the catch to maximize the proportion that will receive the higher price. However, sorters may pose a danger to the resource if they are mis-used by applying them to catches of small shrimp to bring the catch within the legal limit. Rather than move to another area to find bigger shrimp, a skipper may choose to continue fishing in an area with a large number of small shrimp. The issue of sorters will require monitoring in the future.

Regarding a second item of interest to fishery managers, the "Crystal Viking," a new shrimp catcher/processor, conducted a shakedown cruise off the coast of Washington in mid-September. Its intent was to locate and harvest pink shrimp in the Bering Sea and off Alaska. It met with only limited success and subsequently switched to codfish. The cruise off the Washington coast, however, highlights the need for a management strategy to address off-shore processing activity which may be directed at pink shrimp, Dungeness crab, or other species not covered by a federal Fisheries Management Plan. To address this need, Oregon's Dept. of Fish and Wildlife and Washington's Dept. of Fisheries are jointly developing a Memorandum of understanding between the two states, with the hope that Alaska and California will join them. This M.O.U. will encourage uniform management regulations among the states, and enforcement of the state's regulations off which the catch is made, regardless of where landed, enabling effective management of the resources beyond the 3 mile territorial waters.

## OREGON

During the 1988 season, 172 vessels landed approximately 41.5 million pounds of pink shrimp. The season total is the fourth highest on record, just behind 1987's third highest landing of 44.8 million pounds.

Two factors made the 1988 landings impressive. First, approximately five weeks of fishing time were lost during April and May due to price disagreements and poor weather. Second, the shrimp industry was actively trying to produce shrimp larger than 145 count-per-pound. The situation was dramatically different in 1987 when price settlements were made quickly and any legal shrimp were in high demand.

The price structure was also different during 1988. Shrimpers started the 1988 season by receiving \$.50/lb during late April but this soon changed to \$.25-\$.40/lb (depending on grade) by the end of May. Many processors offered \$.50/lb for shrimp larger than 100 ct/lb during early August and the percentage of this grade shrimp increased steadily

through the season's end. During 1987 the lowest ex-vessel price was \$.60/lb with a high of \$.85/lb.

## BRITISH COLUMBIA

Based on incomplete results, the estimated shrimp catch for British Columbia was approximately 5.6 million pounds. Trawl catches of ocean shrimp were about 4.6 million pounds, down 28% from 1987. Trap catches of spot shrimp (*Pandalus platyceros*) were about 1.0 million pounds, down about 30%.

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## FOREIGN FISHING ACTIVITIES OFF THE PACIFIC COAST IN 1988

### Washington, Oregon and California

In 1988, five foreign nations, the Soviet Union, Poland, Japan, the Republic of Korea, and the People's Republic of China, were involved in joint venture or foreign trawl fisheries for Pacific whiting (whiting or hake) off Washington, Oregon, and California. The joint venture fishery, in which U.S. vessels deliver their catch at sea to foreign processing vessels, is the largest groundfish fishery off Washington, Oregon and California in terms of tons landed and accounted for 54 percent of the groundfish landed in 1988. In contrast, the foreign trawl fishery, in which fish are caught and processed exclusively by foreign vessels, accounted for only 8 percent of the groundfish landed in 1988. Only Poland conducted both joint venture and foreign fishing operations.

At most, 33 foreign vessels (trawl, processing, and support vessels) operated at any one time off the coast, fewer than in 1987, but almost twice the number in 1982.

#### Maximum Number of Foreign Vessels in a Day

Year	1981	1982	1983	1984	1985	1986	1987	1988
No. of Vessels	41	18	21	25	24	36	39	33

#### Joint Venture Fishery

In 1988, joint venture operations involved Poland, the Soviet Union, Japan, the Republic of Korea, and the People's Republic of China. The Soviet Union has conducted joint ventures since 1978 and Poland has participated since 1984. The Republic of Korea and the People's Republic of China were new participants to the fishery in 1987 and continued their joint venture involvement in 1988. Japan was the only new participant to the fishery in 1988. Over 80 percent (135,781 metric tons) of the 165,000 metric tons of whiting available for joint venture processing was taken in 1988, a 28 percent increase in tonnage since 1987 and the highest amount on record. A total of 31 foreign processing vessels received whiting from 40 U.S. trawlers, also the highest numbers on record. The next highest year was 1987 when 30 foreign processing vessels received whiting from 30 U.S. trawlers.

Although 5,000 metric tons of shortbelly rockfish were available for joint venture processing in 1988, there was no interest in this fishery.

#### Foreign Trawl Fishery

Except for Japan, the foreign trawl fishery was available to all nations participating in joint venture fisheries in 1988. Japan did not receive a foreign allocation because it was certified for "undertaking activities that have diminished the effectiveness of the International Whaling Commission." The Soviet certification which denied foreign fishing allocations to that country since 1985 was lifted in 1988. However, the Soviet Union declined its foreign fishing allocation late in the year, as did the Republic of Korea. The People's Republic of China did not take any of its allocation. As a result, Poland was the only nation that conducted a foreign trawl fishery in 1988. Poland used a total of 18 trawlers (most of these vessels also participated in the joint venture fishery). Of the 49,000 metric tons of whiting available for foreign harvest in 1988, a total of 36,500 metric tons were allocated to Poland. By the end of the season, the Poles had harvested about half (18,041 metric tons) of their allocation.

As in 1987, 2,000 metric tons of shortbelly rockfish and 9,600 metric tons of jack mackerel were available for foreign fishing in 1988. There was no interest in these fisheries.

#### Enforcement Activities

The U.S. Coast Guard and special agents of the National Marine Fisheries Service spent a total of 206 patrol days to monitor compliance with the foreign fishing regulations in the 1988 fishery. About 50 boarding inspections of foreign vessels were conducted, resulting in 53 alleged violations. As of February 9, 1989, eight had been settled: two civil penalties paid, two written warnings, one verbal warning, and three dismissals.

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

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