

29th Annual Report of

**PACIFIC MARINE
FISHERIES COMMISSION**

FOR THE YEAR 1976

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

29th Annual Report of

PACIFIC MARINE FISHERIES COMMISSION

FOR THE YEAR 1976

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,
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29th Annual Report - 1976

The Pacific Marine Fisheries Commission held its 29th Annual Meeting on November 17 and 18, 1976 at Renton, Washington near the Seattle-Tacoma International Airport. Ancillary meetings on the 15th and 16th preceded the business and plenary sessions on the 17th and 18th. Details of the proceedings at Renton will be presented in pertinent sections of this report.

The general review of fishery activities in 1976 will be presented under the headings "International," "National," and "PMFC and Local Events," but will be restricted primarily to activities of direct concern to PMFC and Pacific Coast fisheries. The biggest fishery event in 1976 was the enactment of the "Fishery Conservation and Management Act of 1976" into Public Law 94-265 on April 13. This Act has international, national and local implications. Progress in its implementation was a matter of great concern at PMFC's annual meeting.

The Act ordered establishment of eight Regional Fishery Management Councils within 120 days. The members of these Councils were appointed by August 11, 1976. The composition and area of jurisdiction of each of the three regional Councils in PMFC's area of concern are given in the "PMFC and Local Events" section of this report. A 200-nautical mile Fishery Conservation Zone was established off the coasts of the United States and its territories effective March 1, 1977. Each Council is required to develop a management plan, acceptable to the Secretary of Commerce, for each of the fisheries within its area of jurisdiction except for highly migratory species which the Act defines as tuna. If a Council fails to develop an acceptable plan for a fishery, the Secretary of Commerce may develop one. If two Councils cannot agree on a plan for a fishery common to both, the Secretary of Commerce may designate which Council shall develop the plan.

If the United States ratifies a comprehensive United Nations Law of the Sea treaty that includes provisions with respect to fishery conservation and management jurisdiction, then regulations promulgated under this Act may be amended as necessary and appropriate to conform to provisions of such treaty. Additional details of the Act were given on pages 3-5 of the *28th Annual Report of the Pacific Marine Fisheries Commission for the Year 1975*.

International

The Third United Nations Conference on the Law of the Sea held its fourth session (LOS-4) in New York, March 15 — May 7, 1976. The subject of the session was the Single Negotiating Text prepared by the Chairmen of the three main committees and the President of the Conference, following the third session which ended on May 10, 1975. Progress was made

during the fourth session (LOS-4), but a fifth session (LOS-5) was convened in New York from August 2 to September 17 in an attempt to resolve important outstanding issues and to produce a draft of an overall treaty.

LOS-5 adjourned on September 17, 1976 without an agreement on the Law of the Sea, but without changes to the Revised Single Negotiating Text of LOS-4. Sea-bed issues beyond the continental shelf constitute a remaining major stumbling block. There are some unsettled fishery issues, such as a difference over tuna. Ecuador with the support of other South American countries urges that tuna be treated like coastal species. A sixth session LOS-6 is scheduled for May 23 — July 8, 1977 in New York. President Carter has nominated former Secretary of Commerce Elliot L. Richardson as ambassador-at-large and his special representative to the Law of the Sea Conference.

Other coastal nations in addition to the United States have felt for some years that proper management of marine fishery resources beyond the territorial sea limits and previous narrow fishing limits could no longer wait for a Law of the Sea agreement. Consequently, many have extended their exclusive fishery management to 200 miles off their coasts.

Canada's 200-mile economic (fisheries) zone became effective on January 1, 1977; and on November 1, 1976 Canada announced proposed geographical coordinates, delineating its zone. The U.S. State Department responded in the November 4 *Federal Register* with its version of maritime boundaries between the United States and Canada. Four boundaries are in dispute: the Gulf of Maine, the Strait of Juan de Fuca (separates British Columbia and Washington), the Dixon Entrance (separates British Columbia and Alaska), and the Beaufort Sea (abuts the Arctic coast of Alaska and the Yukon Territory). Negotiations of the boundary dispute parallel fishery negotiations between the two countries: a first round began September 1 and a second round began November 15, 1976. Petroleum and natural gas as well as fishery reserves are involved; successful fishery negotiations would aid agreement on boundaries. Both Canada and the United States withdrew from the 18-nation International Commission for the Northwest Atlantic Fisheries in order to avoid possible constraints on their management of fisheries within their 200-mile zones. The U.S. withdrawal was effective December 31, 1976 and was finalized by passage of the (U.S.) Fishery Conservation Zone Transition Act (P.L. 95-6) on February 21, 1977 which, among other things, repealed the (U.S.) Northwest Atlantic Fisheries Act of 1950.

Canada and the United States signed a reciprocal fisheries agreement on February 24, 1977. Each country will permit the

other's fishermen to fish in its zone "in accordance with existing patterns. . ." On the Pacific Coast the agreement does not cover clams, scallop, crab or herring. Fishing by U.S. nationals in the Canadian zone on rockfish and blackcod (sablefish) will cease when certain aggregate catches by both American and Canadian fishermen have been reached; the same principle will apply to Canadians in the U.S. zone for rockfish, including Pacific ocean perch and blackcod. Fishing for Pacific halibut will continue under rules of the International Pacific Halibut Commission. Shrimp fishing by American fishermen in the Canadian zone will be limited in scope to that comparable with fishing in previous years.

No fishing for Pacific salmon will take place in the zone of the other country, except under specified conditions. Limitations on salmon fishing in each other's zone will be reciprocal. The agreement deals extensively with specific salmon fisheries. Each country recognizes the other's domestic laws and agrees to be guided by certain principles, including in the case of salmon, "the interest of the state of origin in salmon spawned in its rivers."

In areas where there are boundary disputes between the two countries, enforcement will be by the flag state; neither will authorize fishing by third nations, and either may enforce against third nations. Recreational fishing will continue, and each will waive the other's permit and license requirements. Tuna fishing will continue under agreed international recommendations. The Subcommittee on Fisheries and Wildlife Conservation and Environment of the House of Representatives' Merchant Marine and Fisheries Committee was scheduled to hold hearings on March 17, 1977 to give Congressional approval to the Reciprocal Fisheries Agreement between Canada and the United States. The agreement is not considered to be the "Governing International Fishery Agreement" (GIFA) as defined by P.L. 94-265, and its approval will be for 1977 only. Another agreement, perhaps in more compliance with P.L. 94-265, will be necessary for 1978. Congressman Robert L. Leggett is Chairman of the Subcommittee.

Mexico's 200-mile exclusive economic zone became effective on August 1, 1976. Mexico and the United States in late November completed an agreement which provides reasonable terms of access by U.S. fishermen to the 12- to 200-mile portion of Mexico's zone; except that off the Pacific Coast of Baja, California, U.S. fishermen will be allowed to fish inside of 12 miles. Management of tuna will remain with the Inter-American Tropical Tuna Commission, but U.S. tuna vessels must have a \$20 certificate in order to fish within the 12- to 200-mile portion of Mexico's zone.

Related to implementation of its 200-mile zone, Mexico elevated its fishery agency to cabinet rank, and took a number of fishery enhancement actions dating back at least to 1971. In 1971, Mexico established a goal to increase its annual fishery landings to 500,000 metric tons (m.t.) by 1976 and to develop fisheries for underutilized species, such as anchovy and hake. Landings increased from 254,000 m.t. in 1970 to 330,000 m.t. in 1973, a 30% increase; by 1975 they were 499,300 m.t. Landings for 1976 are still unavailable.

The Mexican Government financed the purchase of 500 shrimp trawlers, by cooperative fishermen, to be built in Mexican shipyards. It is believed that most of these trawlers were completed by the end of 1976. A second vessel-building program is being partly financed by the Inter-American Development Bank (IDB). Vessels have been ordered from shipyards in Mexico, Peru and the United States. Plans to construct 85 additional shrimp trawlers, for cooperative fishermen, to be financed by the IDB program are under discussion. A shipyard in Mazatlan, Mexico is constructing 60 trawlers, each 22-m long, for trawling for finfish. Desco Marine, a U.S. company, has already completed 100 fiberglass, 14.6-meter, vessels for the red snapper fishery. Metal Empresa, a Peruvian shipyard, has completed the first 2 of 39 anchovy and sardine seiners on order; each is 25-m long. Cuba has delivered 13 of the 20 ferro-cement vessels, each 16-m long, that were ordered in 1975 for use by Mexico's fishery schools. In addition a significant number of new and used vessels, primarily, shrimp trawlers, have been imported from the United States.

Six 53-m tuna purse seiners designed by Marine Construction and Design Company of Seattle and ordered in 1973 from Gdansk Shipyards, Poland, were delivered to Mexican cooperatives and were being used off the Pacific Coast in 1976. Mexico's tuna catches increased from 10,500 m.t. in 1970 to over 24,000 m.t. in 1975, a 130% increase. The new vessels are expected to increase the catch further in 1976.

Shrimp although only 1.5% by weight of Mexico's total catch is by far its most valuable fishery, contributing nearly 50% of the total value. However, the nearly 60% increase in shrimp trawlers from 1,404 in 1970 to 2,234 in 1975 did not result in a comparable increase in catch. The annual catch declined from 69,100 tons in 1970 to 68,700 tons in 1975, but preliminary reports indicate that shrimp fishing improved substantially in 1976. About 60% of the Mexican shrimp catch is from the Pacific Coast, primarily from the Gulf of California, where in addition to too many vessels the fishery is beset with social and economic problems.

Plans for coordinated development of the Baja California anchovy fishery were announced and a feasibility study was made in 1974. A \$52 million program (\$14 million Mexican Government and \$38 million private funds) was initiated in 1976. It involves expansion of the anchovy fleet, construction of reduction plants, and promotion of canned sardines and anchovies. Mexican, Peruvian and American experts are cooperating in development of the fishery. American participation is being coordinated by the California Cooperative Oceanic Fisheries Investigation.

Mexico in 1974 concluded an agreement with the Federal Republic of Germany to conduct exploratory fishing off Mexico's Pacific Coast for hake. Two German factory trawlers in 1975 caught only limited amounts of hake and the program was cancelled.

The value of Mexico's fishery exports increased 60% from \$71.5 million in 1970 to \$114.9 million in 1973, but declined to \$104.1 million in 1974. Indications are that the value of exports continued to decline in 1975 and 1976. Frozen shrimp is the most valuable export fishery item, amounting to \$83.2

million in 1974, nearly 80% of the value of all fishery exports which go almost exclusively to the United States. The value of Mexico's fishery imports compared to exports is modest and anchovy oil and meal are the principal imports.

Guatemala declared a 200-mile exclusive economic zone, effective July 1, 1976, and reaffirmed Guatemala's 12-mile territorial sea. Permits for fishing and other activities of exploration and exploitation in those two areas will be required. Management within the zone may be applied to highly migratory species such as tuna.

Some other countries in 1976 that announced economic zones or extensions of fishing limits to 200 miles were: the Union of Soviet Socialist Republics in December; Norway effective January 1, 1977; Denmark, including Greenland and Faeroe Islands, effective date to be at the discretion of the Prime Minister; and the European Community, effective date January 1, 1977, but applicable only to the North Sea and North Atlantic.

Much of the preceding information on Mexican fisheries was extracted from an article in the *Pacific Packers Report 1977* supplement to the *National Fisherman* by Dennis M. Weidner, Foreign Affairs Specialist, National Marine Fisheries Service, Office of International Fisheries. Similarly much of the following information on Japanese, Korean and Russian fisheries was extracted from articles by NMFS Foreign Affairs Specialists Michael Benefiel and Richard S. Green, in the *Pacific Packers Report 1977*.

Japan's marine fisheries catch in 1975 was 9,570,000 m.t., the largest catch in the world. This was a decrease of about 180,000 m.t. from its 1974 catch. Alaska pollock contributed 2,677,000 m.t. in 1975, a decrease of 179,000 m.t. from 1974 and 358,000 m.t. from the 1972 high of 3,035,000 m.t. This decline was the single most important decline in the 1975 catch. Japan's salmon catch in 1975 totalled 166,301 m.t. about a 22% increase. Chum, pink and cherry salmon increased, but chinook salmon decreased materially. Preliminary reports for 1976 indicate major decreases for salmon and need for special efforts to obtain spawning salmon for Hokkaido hatcheries.

Japan in 1971 became a net importer of fish products. Japan imports from all over the world but imports from Republic of Korea, Taiwan, Indonesia and other Asian countries are particularly important. In value, Japanese exports of fishery products to the United States are decreasing, but Japan still exports more fishery products to the United States than she imports from the United States. Salmon roe, crab, and herring in that order were the most valuable imports from the United States. Sea urchin was also a valuable import, amounting to \$2.8 million in the first 10 months of 1976.

The U.S.S.R. is second to Japan as a world fishing nation. Fish are a major contributor to the Soviet food supply and employment. In the past 50 years, the Soviets have invested over \$1.6 billion (1.2 billion rubles) in fisheries. Following World War II the rate of investment accelerated greatly and during the tenth 5-Year Plan (1976-1980) an average annual investment of \$1.3 billion (1 billion rubles) is planned. This is 20%

more than the annual investment rate in the previous 5 years (1971-1975). The investments involve vessels, ports, cold storage and processing plants, and retail fish stores.

About 25% of the total Soviet consumption of animal protein is from fish. The per capita consumption in 1975 of fish was 16.9 kilograms (kg), 37.2 pounds (lb) in the Soviet Union compared to 5.5 kg (12.1 lb) in the United States. The Soviet goal is 18.2 kg (40.0 lb) per capita as recommended by the Soviet Academy of Sciences.

Ninety percent of the Soviet fish harvest is from the high seas. However, fishing off Latin America has been insignificant since most countries there have claimed for sometime either a 200-mile exclusive fishing zone or territorial sea. Worldwide proliferation of 200-mile zones will affect severely Soviet fishing operations in 1977. In the important fisheries off Canada and the United States, Soviet fishing will be according to respective Canadian and American fishery management plans. Consequently, the Soviets are striving to increase production from freshwater and coastal fisheries and plan to invest \$18.5 million (1.4 million rubles) by 1980 in construction of fish hatcheries.

Soviet foreign trade in fishery products is an insignificant portion (less than 0.3% in 1974) of total Soviet trade. Nevertheless fisheries are an important source of foreign exchange and in 1975 they provided a surplus of \$171.9 (\$196.7 exports less \$24.8 imports). A trend of exports exceeding imports of fishery products has existed since 1959 and it became especially pronounced by 1972.

The Republic of Korea (ROK) in 1975 ranked 8th among fishing nations of the world. In 1960, the total ROK catch was 455,000 m.t., but by 1975 the total was over 2.1 million m.t. The goal for 1976 was 2.4 million m.t. Fish are used to satisfy domestic protein demand and to acquire foreign exchange. In 1975, ROK fishery exports were valued at \$428.7 million.

Off the Pacific Coast of North America an important target of ROK fishing effort is sablefish (blackcod). This effort off Alaska was 2 vessels in 1972 and was 17 vessels in 1975 (13 longline and 4 pot vessels). In 1976, the planned effort was 23 vessels and at least 12 longline vessels were observed off Alaska with an estimated catch of 2,800 m.t. Off California, Oregon and Washington, ROK vessels in 1976 caught an estimated 8,044 m.t. of sablefish. Longline vessels caught 5,505 m.t. at a rate of about 3.7 m.t. per vessel day, and pot vessels caught 2,535 m.t. at a rate of about 2.9 m.t. per vessel day. Some of the ROK sablefish vessels are registered in Panama and many are ex tuna longliners that left the crowded tuna fishery in 1974.

For further observations on foreign fishing activity off the Pacific Coast of the United States in 1976 see Appendix 3 of this report.

National

A number of changes occurred in the Executive and Legislative Branches of the federal government in 1976 that are important to persons interested in fisheries. Frederick Irving, who was recently U.S. Ambassador to Iceland, was confirmed by the Senate on March 24, 1976 as Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs,

a post that Washington's Governor Dr. Dixy Lee Ray had vacated in 1975.

The national elections on November 2 resulted in the succession of President Gerald R. Ford, a Republican, by President-Elect Jimmy Carter, a Democrat and former Governor of the State of Georgia. Included in President Carter's Cabinet appointments to date are the following of immediate importance to fisheries:

Juanita Kreps, Secretary of Commerce, January 1977, succeeding Elliot L. Richardson;

Cecil Andrus, Secretary of the Interior, succeeding Thomas S. Kleppe; (Cecil D. Andrus was Governor of the State of Idaho).

Cyrus Vance, Secretary of State, succeeding Henry Kissinger.

The elections also reinforced the Democratic majority that existed in the 94th Congress (1975-1976) which adjourned on October 1, 1976. Because of the retirement of Representatives and Senators and the failure of some incumbents to be reelected, the 95th Congress (1977-1978) convened on January 4, 1977 with a number of new members and changes in committee assignments. Changes in the two committees that are responsible for initiation of fishery legislation were:

Representative Leonor Sullivan (D-Mo.) resigned in October from the House of Representatives and as Chairman of its Committee on Merchant Marine and Fisheries. Her successor as Chairman is John M. Murphy (D-N.Y.). New members on the Committee are William J. Hughes (D-N.J.), Barbara A. Mikulski (D-Md.), David E. Bonior (D-Mich.), Daniel K. Akaka (D-Ha.), Robert K. Dornan (R-Calif.), Thomas B. Evans, Jr. (R-Del.), and Paul S. Trible, Jr. (R-Va.). Representative Robert L. Leggett (D-Calif.) continues as Chairman on the Subcommittee on Fisheries and Wildlife Conservation and the Environment.

Senator John O. Pastore (D-R.I.), who was a member of the Senate Committee on Commerce, retired from the Senate at the end of the 94th Congress. New members of the Committee, which was renamed the Committee on Commerce, Science and Transportation during reorganization of Senate Committees in the 95th Congress, are Edward Zorinsky (D-Neb.), Donald W. Riegle, Jr. (D-Mich.), John Melcher (D-Mont.), Barry Goldwater (R-Ariz.), Robert Packwood (R-Oreg.), Harrison H. Schmitt (R-N.Mex.), and John C. Danforth (R-Mo.).

The 94th Congress passed "The Toxic Substances Control Act," which became P.L. 94-469 on October 11, 1976. The purpose of the Act is to control chemicals potentially hazardous to human health and the environment. Some hazardous substances are vinyl chloride, arsenic, asbestos, mercury, lead, polychlorinated biphenyls (PCBs), fluorocarbons, and sulfuric acid. Senator Warren G. Magnuson (D-Wash.) and Representative Bob Eckhardt (D-Tex.) were leaders in passage of the Act which climaxed a 5-year struggle in Congress. In the words of Senator Magnuson the legislation seeks "to provide a means of preventing suffering, death and environmental damage rather than merely reacting to it."

A change in the federal fiscal year from July 1-June 30 to October 1-September 30 to be effective in 1977 was provided

for by passage of a national budget in 1976 for the fiscal year ending September 30, 1977. Another item of interest was announcement by the Commerce Department that U.S. fishermen caught more fish in 1976 than in any year since 1962. The total catch was 5.4 Billion pounds valued at \$1,353 billion.

Of national interest is a provocative article, "Marsh Scientist Warns Against Widespread Mariculture" by Dr. W. H. Werke, beginning on page 6B of the September 1976 issue of *National Fisherman*. Dr. Werke, defines mariculture as the raising of marine organisms under controlled conditions, and points out that overstatement of benefits from mariculture may not always be in the public's best interest and mariculture may not increase the world's food supply. He stresses the importance of estuaries in the production of a myriad of different fish and other organisms in year-around succession, and the error in using an estuary for the culture of a single species to the exclusion of many wild species.

He mentions that some proponents of mariculture have derogatorily stated that whereas man has learned to increase productivity tremendously from the land through modern farming practices, he is still in the primitive "hunter" stage in harvesting products from the sea. This overlooks many things, but he chooses to mention only these two.

"First, farming as currently practiced in the United States results in an input of much more energy (in the production and use of machinery, fuel, fertilizers, pesticides, etc.) than it does in an output of energy (calories) in terms of food. The highly-praised efficiency of American agriculture is probably extremely inefficient in comparison with that in more backward countries if one bases the comparison on energy expended for energy produced." (This takes on added importance now that energy conservation is a major concern. — Editor)

"Second, modern fishing bears little resemblance to primitive hunting methods," . . . "There is a tremendous difference between today's use of sophisticated electronic and mechanical gear and the aborigine's dependence on his personal senses and spear or bow and arrow. Rather than being inefficient, fishing, with the aid of modern technology, has become so efficient that we are in danger of overfishing a number of species into extinction."

A National Conference for the Eastland Fishery Survey was held at Arlington, Virginia, November 29-December 1, to synthesize and summarize in a report to Congress the results from 18 months of information gathering at the "grass roots" level by the Atlantic States Marine Fisheries Commission, the Gulf States Marine Fisheries Commission and the Pacific Marine Fisheries Commission, beginning in July 1975. The report stems from Senate Concurrent Resolution 11, which was introduced by Senator James O. Eastland in February and unanimously passed by Congress in December 1973. The Resolution proclaimed, "it is the policy of the Congress that our fishing industry be afforded all support necessary to have it strengthened, and all steps be taken to provide adequate protection for our coastal fisheries against excessive foreign fishing," . . . "The Congress also recognizes, encourages, and intends to support the key responsibilities of the several States for conservation and scientific

management of fisheries resources within United States territorial waters; in this context Congress particularly commends Federal programs designed to improve coordinated protection, enhancement, and scientific management of all United States fisheries, including coastal, anadromous and highly migratory species," . . .

The Resolution named the three interstate fisheries commissions as agents of Congress to conduct the Survey in the respective jurisdiction of each. In 1975, Congress appropriated \$500,000 to reimburse the commissions for their costs. In order to include the Great Lakes area in the Survey, each of the three commissions made part of its allocated funds available for a survey of the commercial and recreational fisheries of that area, with the Atlantic States Marine Fisheries Commission acting as coordinator for the area. Details of information gathering by the Pacific Marine Fisheries Commission will be presented in the "ACTIONS AT THE ANNUAL MEETING" section of this annual report (see page 23).

The final report to Congress on the Survey probably will be published and delivered in May 1977. Copies will be available to the public upon request from any of the three interstate marine fisheries commissions. The report will not be a broad-scale request for federal subsidies and support programs. Instead it will recommend priorities for governmental assistance and will vigorously address problems of fisheries development and utilization. It will address institutional arrangements and will recommend consolidation of all federal fisheries-related activities within a single cabinet-level department, containing a fishery agency whose director shall report at the highest departmental level. The report will emphasize development of effective management programs to conserve fishery stocks and fishery habitats. It will call for consolidation and expansion of information and education programs, with particular emphasis on those which will increase utilization of quality fishery products by the American consumer. It will address specific needs of the commercial fisheries and will recommend Congressional action with respect to financial assistance programs, insurance, tariffs, safety, vessel construction, fish processing and marketing, and aquaculture. It will call particular attention to benefits of marine recreational fisheries in contributing to the nation's food supply, in providing recreational opportunities for millions of Americans, and in supporting an estimated \$2.7 billion industry.

Two other matters of national importance were the Fourth National Fisheries Policy Conference in Washington, D.C., on December 2-3 and the publication of a General Accounting Office report on fisheries. The Policy Conference was sponsored by the National Fisheries Institute, the National Cannery Association, the Shellfish Institute of North America, and the National Federation of Fishermen. Regional as well as national organizations participated in the discussions which concerned water quality, extended jurisdiction, aquaculture, marine mammals, tariffs on twine and netting, fishery development measures, and establishment of a Department of Environment and Oceans.

The GAO report, "The U.S. Commercial Fishing Industry — Present Condition and Future of Marine Fisheries," (#CED-76-130, Dec. 23, 1976) is available from the U.S. General Ac-

counting Office, Distribution Section, P.O. Box 1020, Washington, D.C. 20013 for a \$2.00 fee. This 600-page report, which is in two volumes, was commissioned by the House Merchant Marine and Fisheries Committee on November 19, 1975. The report discusses the Fishery Conservation and Management Act of 1976, federal involvement in marine fisheries, characteristics of the industry, common property aspect of fishery resources, fragmented jurisdiction, lack of precise data, environmental problems, fragmented industry, jurisdictional actions taken by foreign countries, costs associated with harvesting, underutilized species, etc. Subsequently, some members of the House Committee on Merchant Marine and Fisheries have criticized the report as inadequate as a guide for future fisheries legislation.

PMFC and Local Events

Secretary of Commerce Elliot Richardson in compliance with the Fishery Conservation and Management Act of 1976 appointed members to the eight Regional Fishery Management Councils effective August 11, 1976. On the following pages are the members of each of the three Councils in PMFC's area of concern together with home station, term of office, and voting status of each member. The name of the Executive Director and the headquarters site of each of the three Councils are also included.

A National Conference for Regional Fishery Management Councils was convened on September 13 to 17 at Arlington, Virginia by the National Oceanic and Atmospheric Administration (NOAA) and its National Marine Fisheries Service (NMFS) to orient the newly appointed members of the eight Councils. Following this the Councils lost no time in organizing staffs and attacking problems at hand.

The North Pacific Fishery Management Council held two meetings in 1976: the first on October 5-8 in Juneau and the second on December 2-4 in Anchorage. Elmer Rasmuson was elected Chairman and Harold E. Lokken was elected Vice Chairman on October 5. Anchorage was selected as the Council's headquarters, but meetings will be rotated between Anchorage and other Alaska communities. A Scientific and Statistical Committee was established on November 24 and the Committee held its first official meeting, November 29 to December 1. An Advisory Panel was established on December 1 and it held its first meeting on December 2-5. Council asked it to expedite development of trawl fish and tanner crab fishery management plans. Council did not complete any plans in 1976.

The North Pacific Fishery Management Council in December asked the Secretary of Commerce to assign it joint planning responsibility with the Pacific Fishery Management Council in preparing a fishery management plan for troll salmon. Subsequently, the North Pacific and Pacific Councils agreed that the most expeditious way to achieve joint planning would be through inclusion of representatives from the entire coast in the planning rather than through any official mandate for joint plan development. Alaskan representatives are included on the Salmon Management Plan Development Team and on the Salmon Advisory Panel of the Pacific Fishery Management Council. International involvement and the extensive migratory habit of salmon make liaison necessary between the two Councils.

The Pacific Marine Fisheries Commission is a substantial mechanism for this liaison. Its membership is composed of the five States within the areas of responsibility of the two Councils. Its Executive Director is a member of both Councils, as are the Directors of the state fishery agencies of Washington and Oregon. Its Salmon-Steelhead Committee includes scientists that also serve on council Salmon Management Planning Teams, and its Advisory Committee includes representatives from the commercial and recreational fisheries of its members States. Alaska's

Director of International Fisheries and External Affairs in its Governor's Office is a member of PMFC's Advisory Committee and is also a member of both Councils.

The Pacific Fishery Management Council held three meetings in 1976: the first on October 1-2-5 in Seattle; the second on November 22-23 in San Francisco; and the third on December 14-16 in Portland. John W. McKean was elected Chairman and E. Charles Fullerton was elected Vice Chairman on October 12. Portland was selected as the Council's headquarters.

NORTH PACIFIC FISHERY MANAGEMENT COUNCIL — Alaska area

<u>Member</u>	<u>Home or agency</u>	<u>Term in years</u>	<u>Voting</u>	<u>Non- voting</u>
Douglas B. Eaton	Kodiak, AK	3	X	
Elmer Rasmuson	Anchorage, AK	3	X	
Charles H. Meacham	Office of International Fisheries & External Affairs, Juneau, AK	2	X	
Henry F. Eaton	Kodiak, AK	1	X	
Clem Tillion	Halibut Cove, AK	1	X	
Donald L. McKernan	Seattle, WA	3	X	
Harold E. Lokken	Seattle, WA	2	X	
James W. Brooks	Alaska Dept., Fish & Game	Ex officio	X	
Frank Haw ¹	Washington Dept., Fisheries	Ex officio	X	
John R. Donaldson	Oregon Dept., Fish & Wildlife	Ex officio	X	
Harry L. Rietze	National Marine Fisheries Service	Ex officio	X	
Jan E. Riffe	U.S. Fish & Wildlife Service	Ex officio		X
R. Adm. J. B. Hayes	U.S. Coast Guard - 17th Dist.	Ex officio		X
James C. (Carl) Price ²	U.S. Department of State	Ex officio		X
John P. Harville	Pacific Marine Fisheries Commission	Ex officio		X

(Executive Director is James Branson — Anchorage, AK)

PACIFIC FISHERY MANAGEMENT COUNCIL — Washington, Oregon, Idaho and California area

<u>Member</u>	<u>Home or agency</u>	<u>Term in years</u>	<u>Voting</u>	<u>Non- voting</u>
Gilbert A. Hunter	Eureka, CA	3	X	
John A. Martinis	Everett, WA	3	X	
John W. McKean	Portland, OR	3	X	
John J. Royal	San Pedro, CA	3	X	
James A. Crutchfield	Seattle, WA	2	X	
George J. Easley	Coos Bay, OR	2	X	
Herman J. McDevitt	Pocatello, ID	1	X	
Vernon J. Smith	San Jose, CA	1	X	
John R. Donaldson	Oregon Dept., Fish & Wildlife	Ex officio	X	
E. Charles Fullerton	California Dept., Fish & Game	Ex officio	X	
Joseph C. Greenley	Idaho Dept., Fish & Game	Ex officio	X	
Frank Haw ¹	Washington Dept., Fisheries	Ex officio	X	
Donald R. Johnson	National Marine Fisheries Service	Ex officio	X	
Charles H. Meacham	Office of International Fisheries & External Affairs, Juneau, AK	Ex officio		X
William Davoren	U.S. Fish & Wildlife Service	Ex officio		X
V. Adm. A. C. Wagner	U.S. Coast Guard — Pacific Area	Ex officio		X
Kathryn Clark-Bourne	U.S. Department of State	Ex officio		X
John P. Harville	Pacific Marine Fisheries Commission	Ex officio		X

(Executive Director is Lorry M. Nakatsu — Portland, OR)

<u>Member</u>	<u>Home or agency</u>	<u>Term in years</u>	<u>Voting</u>	<u>Non voting</u>
Paul J. Bordallo	Agana, Guam	3	X	
Wadsworth Y. H. Yee	Honolulu, HI	3	X	
Peter E. Reid	Pago Pago, American Samoa	3	X	
Frank K. Gotto	Honolulu, HI	2	X	
Isaac I. Ikehara	Agana, Guam	2	X	
Louis K. Agard, Jr.	Honolulu, HI	1	X	
Peter S. Fithian	Honolulu, HI	1	X	
Richard C. Wass	Pago Pago, American Samoa	Ex officio	X	
Francisco B. Aguon	Guam Dept., Agriculture	Ex officio	X	
Michio Takata	Hawaii Div., Fish & Game	Ex officio	X	
Gerald V. Howard	National Marine Fisheries Service	Ex officio	X	
Eugene Kridler	U.S. Fish & Wildlife Service	Ex officio		X
R. Adm. J. W. Moreau	U.S. Coast Guard — 14th Dist.	Ex officio		X
	U.S. Department of State	Ex officio		X

(Executive Director is Wilvan G. Van Campen, Honolulu HI)

¹Frank Haw. Acting Director, Washington Department of Fisheries succeeded Donald W. Moos, effective January 14, 1977 as that Department's member on the North and Pacific Fishery Management Councils.

²James C. (Carl) Price succeeded Lorry M. Nakatsu as the U.S. Department of State's member on the North Pacific Fishery Management Council when the latter resigned from the State Department to become Executive Director of the Pacific Fishery Management Council in December 1976.

³Who will succeed Lorry M. Nakatsu as the U.S. Department of State's member on the Western Pacific Fishery Management Council is presently unknown.

A Scientific and Statistical Committee, a Salmon Advisory Panel, a Salmon Management Plan Development Team, and an Anchovy Advisory Panel which will also consider management of jack mackerel have been established. The Salmon Advisory Panel met on December 14 in Portland and considered a draft environmental impact statement and a preliminary management plan for the troll salmon fishery. The Council has considered establishment of a Trawl and Sablefish Advisory Panel and has designated groundfish, sablefish, Dungeness crab and pink shrimp as fishery management units. First priority has been assigned to development of fishery management plans for salmon, anchovy and groundfish.

The Western Fishery Management Council held two meetings in 1976, both in Honolulu on October 19-21 and December 15 and 16. Wadsworth Y. H. Yee was elected Chairman and Paul J. Bordallo and Peter E. Reid were elected Vice Chairmen at the first meeting. Honolulu was selected as the Council's headquarters. Joaquin P. Villagomez of Saipan attended both meetings as an official observer from the Northern Mariana Islands in anticipation of a change in official status of those Islands. In December, the Council filed a charter for its Scientific and Statistical Committee but did not name members to the Committee. No Advisory Panels were established in 1976.

A summary of the symposium "Regional Fishery Management Councils — A New Regime for Conservation and Management of Marine Fisheries" which was held at PMFC's annual meeting in 1976 will be presented now, rather than subsequently under the heading "ACTIONS AT THE ANNUAL MEETING." PMFC's Chairman Donald W. Moos, as Moderator, described the symposium's organization and introduced the panelists.

The first speaker on Panel A "The New Regime in Management of Marine Fisheries" was Dr. Donald E. Bevan, Acting Dean of the College of Fisheries, University of Washington; and member of the Scientific and Statistical Committees of the North and Pacific Fishery Management Councils. He remarked that the Councils are required to have Scientific and Statistical Committees, and that the University's role as a represented agency on such committees is that of advisor and critic. He next quoted from Secretary of Commerce Elliot Richardson's address at the National Conference for Regional Fishery Management Councils in September 1976.

"I am fully confident that the regional fishery management plans will reflect the very best available scientific information. For this you have two major sources: the National Marine Fisheries Service, and the Scientific and Statistical Committee which each Council is required to establish and maintain. This committee will be invaluable to you. I wish to emphasize the importance of guarding the integrity of the scientific process and of keeping it entirely free of political interference. No plan can stand the test of the Secretary's review, of court challenges, of international cooperation, unless it can be shown to be based on reliable perspectives from scientific information."

Next, Dr. Bevan commented on each of the seven National Standards provided by Section 301 of the Fishery Conservation and Management Act of 1976 and simultaneously on related sections of the interim regulations (Operations Manual) developed by the NMFS to guide the Councils.

"(1) Conservation and Management measures shall prevent overfishing while achieving, on a continuing basis, the optimum

yield from each fishery." This standard does not define overfishing, but the interim regulations do. "Overfishing: overfishing occurs when the harvest level of a given stock reduces population abundance to the point where the stock (cannot) produce maximum yield on a sustained basis." However, there are situations in which groups of stocks are fished, and in obtaining optimum yield from a mixed group an individual stock could be overfished. This is a semantical problem, but if conservation is defined as best use of the resource (group of stocks) the problem with words should be minor.

"(2) Conservation and management measures shall be based upon the best scientific information available." Some wording in the interim regulations may cause trouble; the regulations stress the need for standardizing information. A Council may be unable to standardize all the information it gets from various sources, however, on this coast the Pacific Marine Fisheries Commission has been especially active in standardizing data in useable form.

"(3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination." As a biologist I cannot quarrel with that, but I would stress the phrase, "to the extent practicable." Some wording in the interim regulations could cause problems (e.g., Where stocks are discontinuous, plans by more than one Council will be necessary. Where a stock's range extends into the neighboring country, whose contiguous zone is recognized by the United States, the Secretaries of Commerce and of State will assume responsibility for development of a joint management regime with the neighboring country.) The regulations also say biological units should be managed to take greatest advantage of the biomass. That is fine, but we really do not know how to do that, so we are faced with managing "to the extent practical."

Dr. Bevan replied in response to a question from PMFC Advisor Ted Bugas about the meaning of the parts that talk about leaving management inside the 3-mile territorial limit to the States, e.g., management of fisheries in the Columbia River: The law seems quite clear, a Council does not manage inside of three miles unless the resource is being harvested predominantly outside of three miles and there are conflicts between a States management and a Council's plan.

"(4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges." This seems to say, without mentioning the words "Limited Entry", what limited entry should and should not be. Strangely, the interim regulations do not amplify the anti-monopoly provision, but they say, "The (right of) entry of new participants shall be protected wherever feasible." This seems counter to Standard 4 but it may be in the spirit of encouraging American fishermen to enter fisheries that until now have been left to foreigners.

"(5) Conservation and management measures shall, where

practicable, promote efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose." Again, limited entry seems to be a possibility.

"(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches." This seems to tell biologists or managers to maintain flexibility so management plans or regulations can be changed as conditions warrant. However, the interim regulations caution managers to error on the side of conservation. Now as an artillery man from World War II, I believe it is important in a fishery to get a "bracket". A lot of time can be spent on shooting short (underfishing) of the target without ever knowing how close the effort is coming. Much time and money might be saved by deliberately increasing fishing effort until the effort needed to get a desired yield is known.

"(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication." This seems to repeat Standard 5 unnecessarily. Dr. Bevan in closing said he would not comment on "optimum yield" because of insufficient time, but would stress that the law does not make reference to optimum *sustainable* yield.

The Moderator announced that there would be a discussion or question period after the panelists had spoken. He then introduced the second speaker, the Honorable John A. Martinis, Member of the Washington State House of Representatives and of the Pacific Marine Fisheries Commission, and also a member of the Pacific Fishery Management Council. Mr. Martinis reported on Council's actions at its October meeting at which John W. McKean, former Director of the Oregon Department of Fish and Wildlife, and E. Charles Fullerton, Director of the California Department of Fish and Game were elected, respectively, Chairman and Vice Chairman.

Mr. Martinis said the Pacific Council's strategy for its advisory committee differs somewhat from that of the North Pacific Council. The Pacific Council will choose an Advisory Panel for each management plan and upon adoption of a plan by Council the pertinent Panel will be terminated. The North Pacific Council plans to establish one Advisory Panel which will advise on all management plans.

The Pacific Council designated ocean salmon management as its first priority and one that required immediate establishment of the Scientific and Statistical Committee. An Advisory Panel will be established at the November 22-24 meeting in San Francisco. All interested groups (charter-boat operators, consumers, gillnetters, Indians, ocean anglers, processors, seiners, and trollers including Alaskan trollers, etc.) have been asked to suggest persons for panel membership. The Council has chosen an interim salmon management team to supply Council with objectives and timeframe that can be used for a salmon management plan.

Anchovy are the Council's second priority. The anchovy fishery is of great public interest in California. Groundfish, including underutilized species, are Council's third priority for development of a management plan.

The Pacific Council is making an important request that where bilateral agreements are being negotiated that affect fisheries within the Council's area of jurisdiction that the Federal Government actually involves the Council in the negotiations. Many of us understood that the Councils would actually adopt or hold hearings on preliminary management plans, involving foreign fishing on resources within the 200-mile zone. We feel that Councils should handle the preliminary plans instead of having nothing to say except to advise on them. The Pacific Council has deferred endorsement of the preliminary management plans until the November 22-24 meeting. California is especially concerned about the plan for anchovy.

Moderator Moos asked James Brooks, Commissioner of the Alaska Department of Fish and Game, to substitute for panelist Harold E. Lokken who was ill. Both Brooks and Lokken are members of the North Pacific Fishery Management Council and also of the Pacific Marine Fisheries Commission.

Commissioner Brooks said he did not have a prepared presentation because of this last minute substitution, but that he would try to review the North Pacific Council's actions at its October 5-8 meeting. Elmer Rasmuson and Harold Lokken were elected Chairman and Vice Chairman, respectively, and Anchorage was selected as the Council's headquarters site. A Scientific and Statistical Committee with good representation from the disciplines important to fisheries was appointed.

A long list of nominees to an Advisory Panel was compiled and the nominees were contacted. The North Pacific Council now has a 23-member Advisory Panel. The Council chose a single panel to represent the entire spectrum of Council's concern rather a number of subpanels, each representing a special concern. However, as the Panel proceeds it may form subpanels to concentrate on specific fisheries.

An Executive Director is being recruited and hopefully one will be appointed at the next Council meeting on December 2-5 in Anchorage. In addition to taking care of organizational matters, Council has done a lot in a short time. Management plans are a matter of urgency, as fisheries are so important in Alaska. Fishing is the second largest industry in the State, with art ex-vessel value exceeding \$300 million annually. There are year-round fisheries and some 88 distinct fisheries are being managed. The preliminary management plans developed for foreign fisheries by the National Marine Fisheries Service have been reviewed and Council has endorsed many of them after modifying the original "bottom line" (total allowable catch). For example the allowable catch of sablefish seemed excessive in some areas; the total allowable catch of tanner crabs may be excessive also. Council immediately sent its recommendation to the Secretary of Commerce.

The Scientific and Statistical Committee and the Advisory Panel were instructed to prepare management plans for presentation to Council at the December meeting. Alaska's existing regulations should be used as a base to build on, but not to rubber stamp the State's management program. This seems to be the only possible course of action, if emergency regulations are to be in effect by March 1, 1977. State and federal scientists

agree with this course of action and Council recognizes that management plans will require revision as experience dictates.

The Alaska Department of Fish and Game (ADFG) has made a large number of its senior scientists and NMFS via the Alaskan laboratories of its Northwest Fisheries Center has made many of its scientists available to work on plans. The Scientific and Statistical Committee has established working groups or teams. Bottomfish management planning is under the leadership of NMFS personnel; domestic fishery planning in general is under the leadership of ADFG personnel; excellent progress is being made. The required procedures and translation of draft plans into approved plans and regulations are time consuming. The Secretary may be asked to take emergency action which he has authority to do for a period of 45 days and can extend for another 45 days. Ninety days should allow time for the normal public hearing process and adoption of permanent regulations. Environmental impact statements are being drafted along with the plans and hopefully hearings on the statements and plans can be concurrent.

Moderator Moos began the 15-minute question and answer period by asking Don Bevan a series of introductory questions regarding terminology.

1) What is a management unit?

Ans. — Pacific hake plus other fish that are caught incidentally with hake are an example of a unit.

2) What is a management plan?

Ans. — It is a plan, based on biological information on the species composing the unit, to effectively manage the unit.

3) What is maximum sustained yield (MSY)?

Ans. — It is an estimate of the average maximum annual harvest that can be taken without causing subsequent decreases in annual yield. Data on population size, age composition, growth rate, mortality rate, and recruitment rate are used to model a species' population dynamics to estimate its MSY. It is an estimate and not an inviolate, exact number.

4) What is the total allowable catch (TAC) and how are the domestic and foreign portions determined?

Ans. — It is the size of the total catch which will not drive MSY down in the future or it may be smaller than the current MSY for purposes of allowing the stock to increase so it can support a larger MSY in the future. TAC is dependent on the biological dynamics of the population.

We have another requirement, "optimum yield." It is dependent on economic, social, political, etc., factors. To obtain it, may require modification of TAC for nonbiological reasons. Let's say that TAC for Pacific hake is 150,000 metric tons, but it might be desirable to temporarily reduce TAC to increase the catch per unit of effort in order to attract domestic fishermen into the fishery. Council has to determine the optimum yield, then it has to determine whether domestic fishermen will take 100% of the optimum yield. If they will, then a foreign

catch would be prohibited; but if they will not, the difference between the domestic catch and the optimum yield would be surplus for negotiated allocations to foreign countries. Since two foreign countries, that take about 80% of the hake catch, have not indicated to date that they will recognize the U.S. 200-mile zone, the hake management plan will need to be carefully drawn.

Someone from the floor asked, what happens if optimum yield is less than maximum sustained yield or total allowable catch and domestic fishermen fail to catch the optimum yield, are we obligated to let foreign fishermen catch the difference? Commissioner Brooks answered, we must expect that foreign fishermen will be allowed to catch whatever portion of the optimum yield the domestic fishermen fail to catch.

Moderator Moos announced that Panel B would be "Institutional Interactions in Council Operations" and called upon Dr. T. E. Kruse to speak first.

Panelist Kruse: All the interactions or procedures under the Fishery Management and Conservation Act have not and will not be clearly defined until experience with this new law has been gained. Nevertheless, certain federal responsibilities regarding fishery management and interaction with the Councils can be identified. The first responsibility is administrative: Regional Fishery Management Councils are neither federal nor state entities. They are new governing systems for fishery management. Council employees are not federal employees; they can be hired or replaced without following civil service procedures. Positions and salaries comparable to those in federal service have been established. Federal agencies are authorized to detail personnel to Councils on a reimbursable basis. The Secretary of Commerce is required to provide necessary administrative and technical support services to the Councils. The Northwest and Southwest Regional offices of NMFS and Northwest Administrative Operations Division of NOAA are presently doing this for the Councils in the Pacific area until they get their own staffs and are ready to carry on. The federal agencies will be most pleased when the Councils can perform some of the administration, however, the federal agencies are required to do it if requested.

The second responsibility is fishery management. The Act indicates that development of fishery management plans is the responsibility of Councils, but the executive agencies of the federal government share responsibility in developing those plans by providing technical support. The Fishery Centers of NMFS will provide all available information on a fishery resource upon request from a Council. Monitoring the resources and research are responsibilities of the Secretary of Commerce. Domestic data are collected in cooperation with the States and foreign data are collected in cooperation with the Coast Guard. The Secretary of State is represented on each Council as a non-voting member. This provides Council with input to and information on international negotiations, fishery agreements, boundary definitions, etc.

Briefly, the Secretary of Commerce's responsibilities are: 1) Cooperation with the Secretary of State in determining 12

the allocation among other nations of those portions of the total allowable catches that will not be taken by U.S. nationals;

2) Preparation of preliminary management plans for fisheries, for which applications from other nations for permission to fish are expected, and for which he determines management plans will not be prepared by Council prior to March 1, 1977, or for which a Council fails to develop a plan within a reasonable time when conservation measures are needed;

3) Review, judgment, and establishment of conditions and restrictions on permit applications;

4) Establishment of guidelines, based on the National Standards, to assist in development of fishery management plans; (This has been done.)

5) Review and approval of Council developed management plans; (If a Council fails to comply with the Secretary's suggestions for revision of a plan, he may prepare the plan.)

6) Establishment of domestic fishery needs (catch), and consultation with the Secretary of State in establishment of fees to cover administrative costs for monitoring foreign fishing;

7) Establishment of geographical boundaries of authority between adjacent Councils, and decisions regarding which Council shall prepare a management plan for a fishery that spans more than one Council's jurisdiction or that the Councils jointly shall prepare a plan;

8) Promulgation of regulations for implementation of management plans;

9) Reporting annually to Congress and the President on Commerce Department and Council actions relative to their responsibilities and assignments;

10) Preemption of management of a fishery within a State's area of jurisdiction other than its internal waters, if the fishery exists predominantly within the conservation zone (outside 3 miles), is covered by a management plan, and the State has taken or failed to take action which adversely affects execution of the management plan; and

1) Cooperation with the Secretary of the Department that is responsible for operation of the Coast Guard in the enforcement of fishing regulations.

At this time all of these responsibilities have not had to be dealt with. Therefore, the procedures for fulfilling some of them at the local level have not been established yet, or they are being attended at the national level with input from the field.

The Moderator introduced William T. Davoren, who is the U.S. Fish and Wildlife Service's representative on the Pacific Fishery Management Council.

Panelist Davoren: I will talk about the Fish and Wildlife Service and its interactions with the Regional Fishery Management Councils. The Service's potential contribution to the success of the Councils is recognized by the organic act giving FWS Regional Directors one of the four federal seats on each of the eight Councils.

The degree of FWS direct involvement in each Council's work will vary from Region to Region, depending upon the scope

and history of FWS' work on fishery problems, particularly anadromous fish, in each Region. However, many other FWS activities — ranging from enforcing marine mammal protection laws to protecting or developing fish and wildlife resources affected by federal construction projects or licenses — also relate to the Council's mission. In many respects the Service can serve as a Council's federal link to public and private actions in the inshore, estuarine and inland areas that have a direct impact upon fish and wildlife resources.

The following comments apply specifically to the FWS' interests and involvements in the work of the Pacific Fishery Management Council (Washington, Oregon, Idaho and California). FWS activities of direct support or interest to the Council are scientific staff support, and data, available from: Fishery Assistance staff; Fish Hatcheries staff; and Co-op Research Fishery Unit staffs at University of Washington, Oregon State University, University of Idaho, and Humboldt State University. Other activities of direct support or interest are: Indian fisheries coordination, grants and technical assistance; law enforcement on anadromous fish, marine mammals, endangered species; anadromous fisheries aid grants to States; anadromous fish hatcheries (National Fish Hatcheries); and Dingell-Johnson grants to States.

FWS activities of indirect support or interest to the Council occur within the Division of Ecological Services (Corps of Engineers' permit review, Federal project and license review, land and water resources planning, including liaison with state coastal zone management programs) and the Office of Biological Services (Coastal ecosystems research, Wetlands/estuarine inventory, Power plant siting, Stream alteration and Outer continental shelf projects).

Since the FWS is a Department of Interior agency, these interests of the Department are mentioned.

7. Indian Trust Responsibility: The FWS assists the Secretary of Interior in carrying out his trust responsibilities for the reservation Indians of the United States. In this capacity the FWS has provided treaty Indians of the Pacific Northwest with technical assistance on fisheries problems, particularly salmon, and FWS technical and research personnel engaged in this work are available as scientists to the Council. However, it is important to note that the FWS does not represent the interests of treaty and non-treaty Indians on matters that come before the Council. The Indians themselves, and their organizations, with the assistance of the Bureau of Indian Affairs, represent Indian fishery issues before the Council.

2. Outer Continental Shelf Development: Development of the oil, gas, and mineral resources of the seabed — the Outer Continental Shelf — is also a responsibility of the Secretary of Interior. The FWS representatives on the Councils have been requested to inform the regional OCS office of the Bureau of Land Management (Los Angeles) and the Secretary's Field Representatives (San Francisco and Portland) of any potential conflicts that may surface in the review of management plans prepared by the Council. However, as in the Indian fisheries matter, the FWS representative does not represent the Outer

Continental Shelf interests of the Department of the Interior in the Council's deliberations or actions.

The Moderator called on E. Charles Fullerton next, who is Director of the California Department of Fish and Game, a member of PMFC, and also a member of the Pacific Fishery Management Council.

Panelist Fullerton: We have heard the previous speakers talk about federal responsibilities and council responsibilities, now I am going to talk about the responsibilities of the States that are members of the Pacific Fishery Management Council. The States have a lot of work to do to meet the Council's requirements long before the Council can probably consider the majority of plans dealing with species along our coast. These are the species that inhabit what we call the inside/outside zone since they are both inside and outside of three miles. The State has responsibility to develop management plans for fisheries inside and Council has responsibility to develop plans for fisheries outside on the same species. Because probably 90% of the fishes in our commercial fisheries are the inside/outside variety, we in California saw that we had a lot of work to do to avoid disruption of our fisheries. We explained this to California's Legislature and told it what actions were needed within state government by March 1. The Legislature directed the California Department of Fish and Game to immediately start developing plans at state expense for all the inside/outside species. We now have completed 13 plans for inside/outside species. The plans are going through the state review process now; we hope to submit them about January 1 to Council for adoption for the area outside three miles. If they are adopted by Council and approved by the Secretary of Commerce by at least July 1, 1977, California would have 90% of its fisheries under Council-State management.

I think the other States should consider the same action. If not the States are going to be so far behind in development of plans that deal with the majority of our fisheries, that we will be about two years without cooperative management plans with Council that are workable and will not disrupt our fisheries. We realize that those fisheries outside, such as salmon, billfish, and some others, require plans developed by Council on a regional basis. But for those fisheries that do not leave state jurisdiction, and do not interact between States, the States should take what action they can at their expense to get plans established as soon as possible.

California has foreseen another problem, what good are the management plans if there is no enforcement on the domestic fishery outside three miles? Admiral Wagner expressed his concern, that due to budgetary restrictions and other federal problems, the Coast Guard would not have any of its equipment and personnel on the line before 12 to 18 months, and then only available mostly for foreign fisheries enforcement. Domestic enforcement in addition would be difficult. We in California, with the permission of the Legislature, contacted the federal services to contract for them to do the domestic enforcement outside of three miles. We think it is very necessary to adopt all the plans needed, but if there is no enforcement of them, what good

are they? We see the roles of the States not being preempted by the Council, but we must work hard so the Council and States will manage fisheries jointly.

The Moderator called on Dr. John R. Donaldson, who is Director of the Oregon Department of Fish and Wildlife, a member of PMFC, and a member of both the Pacific and North Pacific Fishery Management Councils.

Panelist Donaldson: Being last after three able speakers does not leave much for me to say. However, after a very vigorous three months as Director of a state fishery agency, I can sympathize with Director Don Moos from the State of Washington. I have become better acquainted with the inside of a U.S. Federal Court than I have of my own office. Of late, over two-thirds of my time has been involved in Indian related fishing issues involving federal courts. That is a very disproportionate use of a Director's time. So I remind you that I do not have all the answers on Councils although my staff briefs me on my inadequacies. Don Moos and I are both members of the two Councils, which encompass a lot of ocean real estate off this coast. A quick estimate is 1 .3 million square miles of ocean from the southern boundary of California around, but excluding Canada, to the tip of Alaska. This is something like 1 5 times the acreage in the State of Oregon. This is an immense responsibility to the States, and I use that example when my Commissioners ask me where I have been and what have I been doing. The State of Oregon has only one vote on the North Pacific Council, but it is an important one.

The States have an opportunity to plan management of important fisheries and I look forward to development of a salmon management plan. Initially it was called an ocean salmon management plan. Dropping the word,jscean is rather significant. It does not mean that the Councils are going to assume authority within three miles; it means a really effective plan must manage salmon from freshwater headwaters to ocean feeding grounds. In the case of Columbia River salmon this means from the headwaters of the Snake River in Idaho and of the Columbia River in Washington to the ocean feeding grounds in the North Pacific. If we do not develop plans that we can live with irtside three miles, then we face the threat of regulation by higher authority.

There are a lot of misunderstajpdings about the Act. Generally, fishermen along the coast are saying: now we have the Act let's get the foreign fleets off the ocean; we have the power to do it; the Japanese say they are not going to move, so let's shoot them out of the water. That is not going to be very popular with the Coast Guard or with various segments of the economy. We have some explaining to do to a lot of communities along this coast. That to me is apparent in Oregon and Washington, and I imagine the same need exists in Alaska and California. The Act is popular with our fishermen; they think it gives them power; they hate the foreign fleets; they want them out of our waters right now. Many do not understand MSY, TAC, and OY. Many of us do not fully comprehend them either, including me. How do you explain these things to the fishing communities along the coast? They have faith in what we are doing.

Oregon's fishery staff is excited to be able to work with

other scientists on this coast to develop a truly regional approach to¹ fisheries management. It is very brave of the Pacific Council to make salmon management its first order of business. I hope the progress is good so we will be ready for the salmon season in 1977.

Discussion Period: Commissioner Brooks, in response to a question about fishing on mixed stocks, said many of the problems involve principally foreign fleets whose goal is maximum tonnage from mixed stocks. In the Bering Sea for example this has led to the decimation of halibut, some other flounders, sablefish, and Pacific ocean perch stocks. In our domestic fisheries for salmon as an example we target on strong stocks and minimize effort on weak stocks. In the case of ocean groundfisheries we will have to do the same. We cannot change the way foreign fleets fish, but we may change the gear type, area, and time of fishing so fishing will be aimed at a few species rather than a maximum tonnage from a mixture of a lot of species. The latter has proven in the Bering Sea and the Gulf of Alaska to be an extremely poor way to manage fishery resources.

PMFC Advisor Bob Hudson: The future role of PMFC is uncertain. State and federal speakers have described in glowing terms their policies and the services they offer. I would like to dispel this glow by pointing to the reason for establishment of Councils. It is because of past failures. This is a last ditch stand. We have little reason to pat ourselves on the back now that we are confronted with changing or restricting fisheries in which our fishermen have invested their lives and capital. Panelist Bevan responded that things were not all that bad: we have the Act in spite of opposition from some regarding its unilateral nature; the stocks are not too bad off biologically; but there are tremendous problems in allocation. We had lots of coho salmon in the State of Washington in 1976, but many are unhappy with the harvests from those coho. Director Don Moos added there were lots of coho; the gillnetters did not catch many; but that was not the fault of the Directors.

PMFC Advisor Ted Bugas addressed this question to the Oregon and Washington fishery agency directors. Will the salmon management plan when it is filed, be something similar, in regard to Columbia River fall chinook, to the one you jointly recommended early this year? Don Moos replied he could not answer that precisely. He doubted that it was possible to draft a comprehensive plan for salmon, as elaborate as Council wishes, not only for the ocean fishery but for all salmon fisheries, in time to get it approved and promulgated before the 1977 season. If the same persons, that worked on last year's recommendations, work on the plan, similarity could be expected. However, because of time constraints we could be faced in 1 977 with continuing chaos in making allocations and conforming to court rulings.

Roger Adkins, a fisherman from Eureka, and a member of the Humboldt Fishermen's Marketing Association commented that better communications with the fishermen were needed. We are fishing and working our boats long hours and cannot afford to attend a lot of meetings. Yet when I hear mention of "limited entry" I fear that it could somehow end my livelihood. We would be most appreciative of better information on

what is being planned for us. Director Donaldson replied that in the Oregon area the Sea Grant Marine Advisors, the Oregon Department of Fish and Wildlife's field biologists, and the annual series of Town Hall fishery meetings which are held along the Oregon coast, about the second week of December, are helpful. At those meetings, federal and state agency representatives explain the programs and stay as long as necessary to answer questions or to be briefed on problems.

PMFC Advisor Art Paquet asked, why did the Council choose such a knotty problem as the salmon fishery instead of a less complex fishery for its first planning effort? Director Moos responded that it was his belief that the foreign fishing problem would be taken care of by March 1, 1977 because there are preliminary management plans in place for groundfish, etc., and there are GIFA's (Governing International Fishery Agreements) with a number of foreign countries. A crisis existed in the salmon fisheries even before emergence of the Indian problem and court intervention. If we can draft an acceptable salmon management plan, the drafting of other plans will be easier.

PMFC Advisor Charles Collins commented that Proposal No. 1 to evaluate the effects of limited entry, which was being considered for adoption as a Resolution by PMFC, called for the States to undertake the study. He suggested that the state fishery agencies were being worked to their limit and that an agency like Resources for the Future, which is funded by the Ford Foundation and has experience in resource management studies, would be a good candidate for the proposed chore. The response to his suggestion was that it was good, and that there were also other agencies that might be considered; perhaps the Proposal should be less restrictive about who should do the study. This should be kept in mind when the Proposal comes up for adoption.

PMFC Advisor John Gilchrist asked what a section from the environmental impact statement on salmon meant? Some panelists agreed the section was confusing and should have stated its point differently. Panelist Kruse said the gist of the section was that in a fishery on mixed stocks, like the ocean salmon fishery where there is a mixture of stocks with varying rates of productivity and different stream origins, it is impossible to manage the stocks individually like they should be. It seems that the author has not stated that [taint to everyone's satisfaction].

Moderator Don Moos thanked the participants and terminated the symposium. The following are some additional matters or events in 1976 that are of PMFC and local interest.

Alaska: On November 2, Alaskans, by a vote of 24,510 against and 13,248 for, defeated a referendum to repeal the State's 1973 limited entry Act. Alaska's salmon fishermen were especially active in support of the limited entry program. The voters selected Willow, about 70 miles northwest of Anchorage, as the site on which to begin building of Alaska's new capitol no later than October 1 1980. Byron Mallott, 33-year-old Chairman of Sealaska, the richest of Alaska's 12 regional native corporations, and President of the Yakutat village corporation Yak-Tat-Kwaan, was elected President of the Alaska Federation of Natives

on December 10. He was to assume that office on February 1, 1977.

Idaho: Lieutenant Governor John V. Evans became Idaho's Governor when Governor Cecil D. Andrus resigned to become Secretary of the Interior in January 1977.

Oregon: There were a number of top level personnel changes in the Oregon Department of Fish and Wildlife (ODFW) in 1976. Dr. T. E. Kruse resigned as Deputy Director, on March 1, 1976, to accept a position with the National Marine Fisheries Service as Director of Coastal Zone and Estuarine Studies Division of the Northwest Fisheries Center in Seattle. Later in the year, he became Deputy Director of NMFS' Northwest Region. Robert U. Mace, a 30-year veteran in game management and Chief of the Wildlife Division, became Deputy Director of ODFW.

John W. McKean, Director of the ODFW, retired from the Department after 38 years of service. He was succeeded, effective August 1, by Dr. John R. Donaldson, former Oregon State University Professor and President of Oregon Aqua-Seafoods, Inc. John McKean on August 1 1 was appointed a member of the Pacific Fishery Management Council for a 3-year term and was subsequently elected Chairman of that body.

Washington: On November 2, 1976 Dr. Dixy Lee Ray was elected Governor of the State of Washington, succeeding Governor Daniel J. Evans who had served for a number of terms and did not run for reelection. Governor Ray appointed Frank Haw, to the position of Acting Director of the Washington Department of Fisheries, effective January 14, 1977, succeeding Donald W. Moos who had resigned as Director. Ralph W. Larson succeeded Carl M. Crouse who retired as Director of the Washington Department of Game on February 1, 1976.

California: PMFC was sorry to lose two longtime participants in 1976. Retired fishery scientist Donald H. Fry, Jr., died in his sleep on March 4, and Advisor Paul McKeehan died following a stroke in March. Adoption by the California Fish and Game Commission of a management plan for California's anchovy fishery and evidence of improvement in the Pacific mackerel stock were more cheerful notes. Details will be given subsequently.

Albacore and other tuna: According to the *Pacific Packers Report 1977*, the international tropical tuna fleet that fishes in the eastern Pacific caught 432,686 tons of tuna and other fish in 1976, an increase of 54,086 tons over 1975's total. The 1976 total contained: 202,068 tons of yellowfin and 137,055 tons of skipjack from the Inter-American Tropical Tuna Commission's regulatory or quota area for yellowfin in the eastern Pacific; 2,414 tons of yellowfin and 3,314 tons of skipjack from the Atlantic; 9,513 tons of bigeye, 11,576 tons of bluefin, 4,776 tons of bonito, 3,515 tons of black skipjack, 1,149 tons of albacore, and 1,243 tons of other fish from unspecified areas. If the 339,123 tons of yellowfin and skipjack from the regulatory area, the 5,728 tons of yellowfin and skipjack from the Atlantic, and the 31,772 tons of other fish from unspecified areas are subtracted from the 432,686-ton total, the remainder (56,063 tons) can be inferred to be yellowfin and skipjack caught in the Pacific outside the yellowfin regulatory area.

U. S. tuna vessels caught 70.6% of the yellowfin and 69.8%

of the skipjack taken in the regulatory area in 1976, but the future of the U.S. fleet is clouded by restrictions stemming from the Marine Mammal Protection Act of 1972. Yellowfin tuna frequently associate with schools of porpoise and fishermen know that those leaping mammals indicate the possible presence of yellowfin. Consequently, tuna fishermen set their seines around schools of porpoise. In 1976, an estimated 70% of the yellowfin catch was made by surrounding porpoise. In the past many of the porpoise have died in the seines despite the expenditure of much effort and large sums of money by fishermen and canners, via the Porpoise Rescue Foundation and also via contracts with the federal government, in an effort to develop new nets and seining methods that would reduce porpoise deaths. Industry spokesmen estimate that a prohibition against setting seines around porpoise schools could reduce the U.S. fleet's efficiency by 50%. The prohibition would not apply to foreign fleets, therefore, the porpoise still would be in jeopardy. Several U.S. vessels in 1976 changed registry to foreign flags to avoid this prohibition and bankruptcy. A number of foreign countries are increasing the size of their fleets in the eastern Pacific tuna fishery. (See page 4 regarding recent additions to Mexico's fleet.)

The Marine Mammal Protection Act of 1972 affects other fisheries and ecosystems in addition to the yellowfin fishery and porpoise. The PMFC at its annual meeting in 1976 adopted Resolution No. 10, "Amend the Marine Mammal Protection Act of 1972," (see page 27). A "Review of the 1976 Pacific Coast Albacore Fishery" which is a hook and line fishery was summarized and distributed at the annual PMFC meeting. The review has been updated; it appears in Appendix 2 (page 43-45) of this report.

Anchovy: The California Department of Fish and Game (CDFG) developed an anchovy management plan in 1976 that was approved with revisions by the California Fish and Game Commission (CFGC) on January 14, 1977. The approved plan provides for rational utilization of the resource, consistent with recreational and forage needs. A model, based on fitting egg and larva population estimates to a logistic curve, indicates an estimated maximum sustainable yield of 450,000 short tons (t) or 408,234 metric tons (m.t.) from an optimum spawning biomass of 2,000,000 t (1,814,372 m.t.). However, the plan calls for maintenance of an average spawning biomass of 2,310,000 t which should provide an optimum yield of 439,000 t.

This plan involves the so called central stock of northern anchovy which is harvested by a Mexican fleet based at Ensenada and an American fleet based primarily at San Pedro. In 1975, approximately 61,000 t, presumably from the central stock, were landed in Ensenada; and as mentioned earlier under the heading "International" Mexico is striving to increase its harvest of this resource. An estimated Mexican goal is 200,000 t eventually from this stock. Negotiations between Mexico and the United States are in progress for the shared use of the resource, and the Pacific Fishery Management Council has assigned high priority to development of a fishery management plan for anchovy. The Peruvian anchovy fishery, although on a different stock, because of its magnitude and large fluctuations has a

strong "supply and demand" influence on other anchovy fisheries. Anchovy account for about 20% of Peru's export income. In 1976, Peru exported an estimated 80% of about 750,000 t of fishmeal and most of 101,000 t of fish oil produced. The exports exceeded \$320 million.

The CFGC via its CDFG manages the California fishery for anchovy for reduction purposes by a 100,000-t quota for a southern permit area and a 15,000-t quota for a northern permit area during a season from September 15 in the southern area and August 1 in the northern area to May 15 unless the quotas are caught sooner. In March 1977, the seasons landings from the southern area totalled 91,600 t and the CFGC on April 1 increased the quota for that area to 120,000 t. The quota for the northern area had not been approached and there was no request to increase it.

Groundfish: A preliminary "Review of the 1976 Pacific Coast Groundfish Fishery" was distributed and was summarized verbally at PMFC's annual meeting. See Appendix 2 of this report for an updated Review and also for a "Review of the Pacific Halibut Fishery." The following are some additional information on dogfish (*Squalus acanthias*), Pacific hake (*Merluccius productus*), and sablefish or blackcod [*Anoplopoma fimbria*].

Foreign markets in 1976 for dogfish stimulated a substantial fishery in the State of Washington for this underutilized species. Trade publications contained advertisements that buyers (processors) wanted dogfish. Two fish processors and approximately 57 set-net fishermen participated in harvesting approximately 5 million pounds of dogfish from Puget Sound. The fishermen received 5 to 7 cents per pound (round weight). The fish were filleted and quick frozen for export to Germany, England and Sweden, where they were used for human consumption.

Monitoring the fishery revealed that coarse-web, nylon nets are highly selective to dogfish. Incidentally caught species included Pacific cod, lingcod, rockfishes, flatfishes, and an occasional salmon. The incidental catch was less than 5% of the total, landings of dogfish. The set nets were selective to size; this was important due to the 32-inch minimum-size limit for dogfish imposed by the processors. Nets with 6V2- to 7Vi-inch meshes were used; these successfully selected large dogfish. As a result, large females composed 95% of the harvest. This experimental fishery was managed by a permit system which specified gear and area openings. Permanent regulations, based on biological and logbook data, have been established effective January 1, 1977.

A small fishery for Pacific hake, extending from late fall to early spring, has occurred each year in central Puget Sound since November 1965. See "Current Status of Pacific Hake Fisheries" by Alan E. Millikan in combined Annual Reports of PMFC for 1966 and 1967, p. 45-47. The catches from this fishery generally range from about 3 million to 5 million pounds each season, but in the 1966-67 season they totalled almost 10.7 million pounds. The catches are used almost entirely for animal food and reduction. Earlier in this report, under the heading International, mention was made of Mexico's effort to develop a hake fishery off its Pacific Coast. The Pacific Fishery Management Council is studying a joint-venture arrangement

between a Bellingham, Washington cold storage company and the USSR to process and distribute hake caught by U.S. fishermen off the Pacific Northwest. See PMFC Newsletter No. 25, October 1976, p. 11 for an item on the joint-venture.

Mention is made, under the heading International, of South Korea (ROK) increasing interest in harvesting sablefish. Canadian and American catches of sablefish are given in the Review of the 1976 Pacific Coast Groundfish Fishery, in Appendix 2 of this report. For a more comprehensive measure of the magnitude of this resource, the reader is referred to "Final Environmental Impact Statement/Preliminary Fishery Management Plan, Sablefish of the Bering Sea and the Northeastern Pacific Ocean," prepared and distributed by the Northwest Regional (Seattle) Office of the NMFS in January 1977. According to this latter source the combined annual catch by fishermen from U.S., Canada, Japan, USSR, and ROK from the Northeastern Pacific Ocean, Bering Sea and Aleutians areas totalled 3,001 m.t. in 1958, increased to 65,432 m.t. in 1972, and decreased to 44,281 m.t. in 1974. The U.S. portion of those combined catches has increased from 2,586 m.t. in 1958, to 5,530 m.t. in 1972, and to 6,982 m.t. in 1974. The present maximum sustainable yield for the Bering Sea to California stock is estimated to be from 42,600 to 46,500 m.t.

Pacific mackerel: This resource off California has been depressed for many years and fishing has been prohibited since 1972 when that State's Legislature passed a fishery management bill. All evidence indicates that the 1976-year-class of mackerel will be good and may increase the stock considerably. The new year-class appears to be the most successful in 15 years. Young-of-the-year fish (1976) were found from Cedros Island, Baja California to Oxnard, California.

Indian treaty fishing: A discussion of Salmon and steelhead trout fisheries in 1976 would be incomplete without a discussion of Indian fishing, especially in the States of Oregon and Washington. U.S. District Court Judge George H. Boldt on February 12, 1974, exacerbated a serious, festering social problem of long standing when he ruled that treaties signed by the Federal Government in the mid-1800's allowed certain tribes to take up to 50% of the harvestable runs of salmon and steelhead returning to the rivers of the State of Washington. This ruling was expanded to the State of Oregon when U.S. District Court Judge Robert C. Belloni on August 29, 1975 ruled that the Oregon and Washington fishery agencies must manage the fisheries so upriver Indian fisheries in the Columbia River were assured of 50% of the harvestable salmon, including those Chinook and coho salmon landed in Oregon and Washington from ocean fisheries.

As 1976 ended, 46 ocean trollers and salmon buyers from the State of Washington faced contempt charges for alleged violations of a court ordered ban by Judge Belloni on ocean trolling during the last 9 days of June. The ban was for the purpose of allowing enough salmon to enter the Columbia River so 4 treaty Indian tribes would have a chance to catch half of the salmon destined for hatcheries and spawning grounds above Bonneville Dam. The results of the ban plus restrictions on non-Indian gillnetting in the River were large surpluses of salmon

at the hatcheries and criticism by non-Indian fishermen of management by the state fishery agencies.

Fortunately some calm heads on all sides (Indian fishermen, non-Indian commercial and sport fishermen, and Idaho, Oregon and Washington fishery agencies) of the Columbia River fishery problem refused to become discouraged by the problem's complexity. They continued to search for a solution and by the end of 1976 they had negotiated a tentative agreement for allocation of Columbia River salmon and steelhead to the various "user" groups. The agreement was culminated on February 28, 1977 when Judge Belloni approved its comprehensive plan. On March 4, 1977, U.S. Attorney Sidney Lezak moved for dismissal of the contempt charges against the 46 ocean trollers and salmon buyers.

However, drafting of the agreement on allocation almost failed in the fall of 1976 when the Bonneville Power Administration (BPA) entered into a separate agreement with the four Indian Tribes (Nez Perce, Umatilla, Yakima, and Confederated Warm Springs) regarding restoration and enhancement of salmon and steelhead runs in the Columbia River. The Governors of Idaho, Oregon and Washington objected to their omission and the omission of the Pacific Northwest Regional Commission (PNRC) from the BPA agreement, and charged that the bilateral agreement threatened the fishery management authority of the States and the consummation of the multilateral agreement on allocation. PNRC is composed of the three Governors plus a federal member. Subsequently, on November 28, the BPA agreement was amended by a Memorandum of Understanding between BPA, the Indian Tribes, the Governors, and the PNRC. This corrected the original omission and facilitated resumption of the successful negotiations between the States and Tribes for the out-of-court settlement on allocation of fish to various user groups. The Memorandum of Understanding will free \$500,000 in BPA funds to begin a program of fish propagation and protection. PNRC will administer the program. Inclusion of PNRC in the agreement will protect the rights of the States to manage the Columbia River fish runs.

There was no apparent progress in settlement of the very complicated Indian Treaty fishery problems affecting the ocean coast, Strait of Juan de Fuca, and Puget Sound areas of the State of Washington. The salmon and steelhead fisheries in those areas, north and west of the Columbia River, were in a state of insurrection and extreme confusion in 1976. As 1977 begins, two resolutions regarding Indian matters have been introduced in the 95th Congress.

Representative Lloyd Meeds on January 4, 1977 introduced House Joint Resolution 1 for himself and five other Representatives (Don Bonker, Norman D. Dicks, Thomas S. Foley, Mike McCormack, and Joel Pritchard) from the State of Washington. The Resolution would establish a commission to explore the impact of the February 12, 1974 Boldt decision on the Northwest and how best to remedy the present "near chaos" in fishery management, especially in salmon and steelhead fisheries. The commission would be required to report to Congress within one year after the Resolution became law and the commission would be dissolved 90 days after submission

of its report. The Resolution was assigned to the House Committees on Interior and Insular Affairs, and Merchant Marine and Fisheries.

Senator James Abourezk from the State of South Dakota, who is Chairman of the American Indian Policy Review Commission, on January 14, 1977 introduced Senate Joint Resolution 10. It would extend to May 18, 1977 the date required by P.L. 93-580 for the Commission to submit its final report to Congress, but would not change the June 30, 1977 date for dissolution of the Commission.

A short listing of some incidents that occurred in northwestern Washington during 1976 indicates how conservative Representative Meeds was when he said, "the management of the fishery is near chaos. Under the Boldt ruling, 30 Indian tribes and Government agencies potentially have the right to set regulations, seasons, limits, and other rules regarding catches." (*Congressional Record*, January 4, 1977, p. E5)

The Supreme Court of the State of Washington on April 8, 1976 in response to an appeal of the Puyallup II decision issued a series of findings regarding the rights of the Puyallup Indian Tribe to harvest steelhead commercially. The following is a summary of the findings that appeared in the Sport Fishing Institutes *SFI Bulletin* No. 275, June 1976, under the title "Puyallup III Decision."

1. Fish — Indians — State Conservation Rules — Jurisdiction — In General: The State has jurisdiction to determine the extent to which it may regulate resources for conservation purposes, and the extent to which treaty rights may exempt Indians from such conservation regulations.

2. Courts — Jurisdiction — Federal Issue — Remand: A remand from the United States Supreme Court to the (State) Supreme Court for determination of a federal issue confers jurisdiction upon the (State) Supreme Court for such purposes.

3. Fish — Indians — State Conservation Rules — Jurisdiction — On-Reservation Controls: The jurisdictional scope of the State's powers to enforce fish resource conservation regulations is unaffected by the boundaries of an Indian reservation. When required to meaningfully control the conservation of a species of fish, both on-reservation and off-reservation areas may be regulated by the State. «

4. Courts — Jurisdiction — Comity — Later Federal Action: The mere happenstance of a later-commenced federal court action treating a similar subject matter does not affect the jurisdiction of the State to continue seeking a determination in a prior matter in the State's courts.

5. Fish — Indians — State Conservation Rules — Net Fishery — Requirement: There is no requirement, under the Treaty of Medicine Creek, that the Department of Game create regulations permitting an Indian net fishery for steelhead trout.

6. Indians — Treaties — Construction — Intent of Parties — In General: While Indian treaties are generally to be construed to reflect the Indians' understanding when in conflict with technical meanings, and to favor the Indians and resolve ambiguities in their favor, such construction rules do not require that

the Indians' understanding must prevail, nor may the clear terms of a treaty be altered or construed to mean other than what they state even though other results may be considered desirable.

7. Fish — Indians — State Conservation Rules — "In Common With": The right of the Indians under the Treaty of Medicine Creek to fish "in common with" others merely means that fishing conservation regulations must accord equal treatment to both Indian and non-Indian fishermen.

8. Fish — Indians — State Conservation Rules — "Usual and Accustomed" Places: The right of Indians under the Treaty of Medicine Creek to have access to their usual and accustomed fishing grounds may not be contravened by the State.

9. Fish — Indians — State Conservation Rules — Method of Fishing: Fish conservation regulations dealing with the methods by which a particular species is taken must, under both the federal equal protection mandate and the Treaty of Medicine Creek, apply equally to both Indians and non-Indian fishermen.

10. Fish — Indians — Treaties — Natural and Artificial Runs — Application: Any rights accorded Indians by the Treaty of Medicine Creek to a net fishery are only applicable to natural fish runs. Artificial-source fish runs are beyond the scope of the Treaty.

11. Appeal and Error — Review — Discretionary Matter: A matter subject to the equitable discretion of the trial court will not be disturbed on review in the absence of a manifest abuse of such discretion.

12. Fish — Indians — State Conservation Rules — Steelhead Trout — Allocation: The Department of Game is the proper agency to allocate steelhead trout runs between Indian and non-Indian fishermen under the department's conservation regulations.

One might infer that Puyallup III settled the question of Indian commercial fishing for steelhead and the question of management of naturally and artificially propagated stocks, and that some of the findings were applicable to salmon fishing and management as well. But such is apparently not so, for on November 29, 1976, the U.S. Supreme Court agreed to review the 13-year-old dispute between Puyallup Indians and the State of Washington over fishing rights on the Puyallup River near Tacoma. The Puyallups contend that because of tribal immunity the Washington Supreme Court does not have the right to set guidelines for fishing rights of the Puyallup Tribe and non-tribal members on their small reservation. The U.S. Supreme Court has ruled twice before on the dispute. In 1968, it decided the State could prohibit net fishing by Indians on their reservation only as "a reasonable and necessary" conservation measure for salmon and other fish returning to fresh water to spawn. In 1973, it remanded to the state courts the question, could the State regulate Puyallup Indian catches of steelhead, a fish intensively propagated by state hatcheries. The Puyallups argue that the state courts severely impact, "not only upon the Puyallup fishery essential to sustenance of tribal members but on tribal self-regulation and integrity of control over other on-reservation tribal affairs."

By late 1976, enforcement of state fishing laws in Washing-

ton seemed to have gotten out of hand. Somewhere throughout the year there is an Indian fishing season open, this plus the high prices for salmon provides opportunity and incentive for illegal fishing by non-Indians. Present laws are not sufficiently severe to deter illegal fishing when salmon are so valuable; fishermen cited for illegal fishing can retain their licenses by forfeiting bail. The Washington Department of Fisheries plans to ask the Legislature to review and increase the penalties.

One night a gillnetter drove the bow of his boat over the transom of a state patrol boat until the patrol boat began to fill with water. The gillnetter backed his boat off when a patrolman reached for a shotgun. Reports, on what may have been the same incident, say that on October 6, the arrest of one fisherman sparked a seaborne riot. More than 20 fishing boats ganged up on 2 state patrol vessels, nearly sinking one and damaging both. A Coast Guard cutter called to the scene was rammed also, and 12 fishermen were arrested. Violence continued to flare and by about mid-October, a reinforced patrol had arrested 37 fishermen.

Governor Evans on October 21 after learning that the U.S. Department of Justice had ordered the FBI to immediately investigate the long-simmering conflict over scarce salmon stocks responded that the FBI cannot accomplish any more than the State in the "Fish War." "The FBI can't do any more than we can unless they have bigger boats or more cannons or some other darn thing that we don't have, and they certainly, in my view, are not going to be involved in that kind of enforcement." A Washington Department of Fisheries spokesman said the agency had made over 40 arrests in the last 3 weeks. The FBI will not be able to force any greater compliance by non-Indians. The State has closed Puget Sound to fishing except for limited areas open to Indians. A Deputy U.S. Attorney said the FBI would not be a peacekeeping force on Puget Sound. An Indian leader told newsmen, "If we don't get the kind of protection we need, I guess we'll see riots. We don't want that. No fish is worth anyone's life." We have documented many incidents of whites shooting at Indians and vandalizing Indian fishing boats. That a fight is misplaced. The FBI said it would investigate to see if there is a provable case against the whites.

On the night of October 24, William Carlson, a 24-year-old gillnetter was shot and seriously wounded by a Washington Department of Fisheries patrolman near Foulweather Bluff in Hood Canal. Patrolmen say Carlson intended to ram the patrol boat, a second version is that Carlson was interfering with the arrest of other fishermen. However, gillnetters dispute those allegations and say the shooting was unprovoked. President Ford, while in Seattle the next day on his unsuccessful campaign for reelection, was greeted by about 50 fishing vessels (some festooned with black flags) which closed ranks after the President's boat had passed. The fishermen sounded horns and whistles, but the President made his address minutes later without mention of the demonstration.

The Coast Guard in response to a request from Governor Evans announced on November 3 that its vessels would transport unarmed fishery agents into areas of illegal fishing to prevent further violence. The Director of the Washington Department

of Fisheries said he would recommend to the Governor and the Legislature that the Washington State (highway) Patrol assume the responsibility of enforcing state fishing regulations.

On the ocean coast, the Washington Department of Fisheries in October turned the Grays Harbor-Chehalis River salmon fishery entirely over to Indian net fishermen, except for sport fishing and one day per week for non-Indian commercial fishing, in an effort to guarantee Indians 50% of the years salmon catch to which Judge Boldt ruled they are entitled. This resulted in the arrest of 14 non-Indian gillnetters during 3 days of defiance during the week ending October 23 for fishing while the season was closed to them. On October 28, the Grays Harbor Gillnetters Association voted to join Puget Sound gillnetters in removing all firearms from their boats, if Governor Evans would order the fisheries patrol officers to do the same. The Grays Harbor gillnetters also voted not to fish illegally, at least not until the 14 arrested gillnetters were tried by the Grays Harbor District Court, which had not set the trial date.

The Washington Department of Fisheries granted the Grays Harbor gillnetters an extra day of fishing, beginning on Sunday, October 31. The Quinault Tribe, which maintains it is not subject to Washington Department of Fisheries regulations, offered in November to cease fishing two days per week so non-Indians could fish. However, the Grays Harbor Gillnetters Association rejected the offer on the basis that only the Fisheries Department has authority to set seasons. Subsequently, the Department opened the season on November 1 to non-Indian fishermen for two days per week and the Association's fishermen went fishing. The Quinaults in the meantime withdrew their offer to cease fishing two days per week, so for the three weeks prior to December 10 Indians and non-Indian fishermen fished together on Thursdays and Fridays. On Friday night, December 10, the 1976 fishing season on Grays Harbor and the Chehalis River closed after three months of confusing "off-again, on-again" fishing restrictions against non-Indians.

On December 23, Judge Boldt's Court announced that he had signed a summary judgment which negates for Indians a "buy back" provision of the State of Washington's "limited entry" program. The provision stipulates that persons buying "buy-back" vessels and gear at state auctions may not use the vessels and gear in the State's commercial salmon fisheries. The Federal Government provided about \$3.5 million to the State to buy back vessels and gear from fishermen who were willing to leave the salmon fisheries. Some 154 "buy-back" vessels were sold by the State at 3 auctions to persons who pledged they would not use them for commercial salmon fishing. The judgment permits three Indians, who bought vessels at the auctions, to use them in commercial fishing (including salmon fishing). Other Indians who buy "buy-back" vessels at future auctions also may use them for commercial fishing.

Problems associated with Indian treaties impinge upon more than just fish. Washington State Assistant Attorney General James M. Johnson asked Judge Boldt by letter to disqualify himself from hearing Phase 2 of the Indian treaty rights dispute. Phase 2 involves control over most Western Washington rivers and streams regarding industrial, commercial and other uses of

them. A ruling favorable to the Indians would give them a major voice in stream uses. Johnson argued that there have been problems with public acceptance of the Judges decision on Phase 1, involving fishing, therefore, acceptance of a ruling by him on Phase 2 was likely to be poor. In addition, it would be difficult for the Judge to Exercise jurisdiction over developments stemming from Phase 1 while presiding over Phase 2. In November 1976 Judge Boldt said he would not disqualify himself. He said he had distributed copies of Johnson's letter to other lawyers for comment and all those who responded disagreed with Johnson. A trial date of January 9, 1978 in Seattle has been set tentatively. Interrogatories and responses from the United States and the State of Washington are due in March 1977, and depositions will be taken in early June 1977.

The Idaho Supreme Court upheld the conviction of Dianne Coffee, a Kootenai Indian, for killing a deer out of season and with the aid of an artificial light on private land. The Court ruled that the 1855 Hellgate Treaty restricts the right of Northern Idaho's Kootenai Indians to hunt and fish as they please. The Treaty allows Indians unlimited right to hunt and fish only on "open and unclaimed" land.

In Oregon, the Klamath Indian Tribe on December 4, 1976 approved an \$18 million out-of-court settlement of a claim against the Federal Government for mismanagement of tribal assets between the years 1864 and 1961. The negotiated settlement still needs approval of the Secretary of the Interior and the Indian Claims Commission, and appropriation of funds by Congress. A second claim for mismanagement of the Tribe's forest assets is still unsettled.

The State of Washington is seeking to collect sales and cigarette taxes on sales to non-Indians on federally designated Indian reservations. An estimated \$5 million per year in uncollected taxes is at stake. The reservation Indians are resisting. A court case involving the Yakima Reservation might go to trial in April 1977. Other cases involving Colville, Makah, Quinault and other major reservations do not have estimated trial dates.

Salmon: The return of 15 million chum salmon to Japanese hatcheries in 1975, prompted the Alaska Department of fish and Game to send biologist Stan Moberly and engineer Robert Lium to Japan in April 1976 to learn how and why the Japanese salmon enhancement programs are so successful. The two Alaskans inspected 21 Japanese hatchery complexes. They noted that the Japanese had refined their fish-culture procedures to where the recent rates of return are over twice as good as they were in 1960. At that time 4 to 6 million salmon were returning per year, representing a survival of about 1% of the fry released. Now the rate is over twice as good, being 2.2% during the past 10 years, and in one area on Hokkaido Island a 5% survival occurred.

The Japanese initially incubate the fertilized eggs to the eyed stage in large central hatcheries. Then they are distributed to smaller hatcheries, where they are incubated in lateral, concrete raceways with a 1-inch depth of gravel and 6-inch depth of flowing water. Some hatcheries have 5 to 6 acres of raceways,

which are covered with boards to keep out snow and light. Most of the incubation water is a constant 8°C (46°F) from artesian wells. The alevins at that temperature become free swimming fry sooner than they would in a natural environment, but at a time when the ocean is still too cold and food is too limited for good survival. Therefore the fry are reared in the hatcheries for one to two months and are fed a standard dry fish food until ocean conditions have improved. A moist pellet food would be preferred but it is too expensive. A team of biologists monitors ocean conditions and relays the information to the hatchery staffs. Survival from eggs to fry averages 80% in Japan. It was estimated that the Japanese would release 800 million fry in 1976.

The Japanese stressed three factors in a successful hatchery program:

1. Good water and lots of it — artesian well water is desired for its constant temperature;
2. Well trained (experienced) personnel; and
3. Public support.

The knowledge gained from the Japanese will be incorporated into Alaska's enhancement program wherever possible.

In 1976, the combined U.S. and Canadian pack of canned Pacific salmon of all species totalled 3,771,924 cases (48-lb per case). The pack in cases by region was: Alaska 2,524,100; British Columbia 1,044,546; Washington 194,700; and Columbia River (mostly Oregon) 8,578. The combined annual packs in the previous 5 years and in 1941, the record year of the previous 35 years, were: 1975 — 1,869,633; 1974 — 3,334,790; 1973 - 3,036,896; 1972 - 3,063,260; 1971 - 4,797,361; and 1941 — 10,047,649. Pink salmon were the big contributors and sockeye were second in 1976 in Alaska and British Columbia. The Boldt decision and orders stemming from it threatened many Puget Sound non-Indian gillnetters with bankruptcy and loss of their vessels because of lack of opportunity to fish. (*Pacific Packers Report 1977*)

Canadians, interested in British Columbia's salmon and trout resources, in 1976 were soliciting approval of a \$300 million federally financed Salmonid Enhancement Program for B.C., which was announced in March 1975. The aim of the program is to double the stocks of B.C. salmon by the year 1990, so they will equal or exceed pre-1930 stocks. The program would utilize artificial propagation and restoration of waterways and habitat to accomplish that goal. Improvement of steelhead and other trout stocks is also included in the goal. The program announced in 1975 requires two years of planning and testing before approval of comprehensive plans by the federal cabinet in March 1977 to implement the program.

Results from preliminary tests have been encouraging. An experiment on Vancouver Island to enrich the water of Great Central Lake to enhance the food chain for juvenile sockeye by use of agricultural fertilizers during the years 1970 through 1973 resulted in the return of 760,000 adult sockeye to the lake system in 1976 compared to a prefertilization average return of 50,000. An incubation box experiment with pink salmon eggs at Bear Creek is yielding 10 fold increases in returning adult pink salmon.

Artificial spawning channels in Weaver Creek (Harrison Lake-lower Fraser River system) and incubation ponds on the upper Pitt River (Pitt Lake-lower Fraser River) are producing over 9 times as many adult sockeye as the natural streams ever did. The Weaver Creek and Pitt River installation are projects of the International Pacific Salmon Fisheries Commission. Results such as these are causing people in British Columbia to ask what are we waiting for?

The State of Washington is also considering a restoration or enhancement program for its salmon stocks. In September its Department of Fisheries was awarded \$225,950 in federal matching funds from the Anadromous Fish Conservation Act (P.L. 89-304) to complete the Humptulips Salmon Hatchery near Grays Harbor. Construction began in 1973 and completion and operation of the hatchery was scheduled for the fall of 1976. It is anticipated that the hatchery will add \$700,000 annually to the salmon fisheries of the State.

Oregon State Police reported at a fishery "town hall" meeting in December 1976 that a record number of citations, nearly 250, had been issued for snagging salmon in 10 counties in the northwest portion of Oregon, primarily in coastal and Willamette valley streams. The high price of salmon eggs, and the concentration of Chinook and coho salmon in pools downstream from hatcheries and spawning areas due to extreme low water levels, caused by the unusually dry weather, made the salmon very vulnerable.

The spring chinook run to the Willamette River in 1976 was small, as had been predicted; the run was also later than usual in arriving at and ascending the fishway at the falls at Oregon City. To enhance the escapement over the falls and to protect the spring chinook in the spawning tributaries the entire River and its tributaries, above the falls, were closed to angling for salmon from June 7 through July 14. And the annual closure which begins July 15 for salmon angling in tributaries above the falls was continued. The final sport catch of about 16,400 spring chinook was considered reasonably good; and the escapement of 22,000 over the falls, although less than the annual goal of 30,000, was considered fair.

The Weyerhaeuser Company, in 1976, continued its interest in aquaculture of salmon since its acquisition of Oregon Aqua-Seafoods on August 15, 1975. The Company appointed Dr. William J. McNeil as general manager of Oregon Aqua-Seafoods following Dr. John R. Donaldson's resignation to become Director of the Oregon Department of Fish and Wildlife. Weyerhaeuser plans construction of a warm-water salmon hatchery on the bank of the McKenzie River, a major Willamette tributary, in 1977. Warm water from Weyerhaeuser's Springfield mill on the opposite bank would be used to accelerate the hatching and growth of chinook and coho salmon. When the young salmon reach smolt size they will be transported to Oregon Aqua-Seafoods' ponds on Yaquina and Coos bays from which they will be released, after acclimation for 20 days to sea water, to range the North Pacific. A release of 25 million coho smolts is planned for December 1977. A 2% survival could result in the return of 500,000 adult coho to the bays. Chinook salmon eggs were

not available from the State Department of Fish and Wildlife in 1976, because of low water. When eggs are available chinook and chum salmon will be reared also at the Springfield hatchery. The price of salmon eggs when they are available from the State is \$10.00 per thousand.

The much maligned Columbia River salmon and steelhead runs while only a small fraction of their former numbers are still important to Pacific Coast fisheries. A new organization, the Columbia River Basin Fisheries Alliance, was formed in 1976 for the purpose of promoting restoration of the River's once vast fishery bounty. The Alliance's Executive Committee and Board of Directors are composed of Idaho, Oregon and Washington representatives from Indian tribes, commercial and sport fishery groups, guides and packers, etc. The next meeting of this diverse alliance is scheduled for January 7-8, 1977 in Vancouver, Washington.

It appears that the pressure to divert water from the Columbia River to the southwestern States has subsided. Representative Morris Udall (D-Ariz.), a longtime proponent of diversion, now says it would be a mistake. One reason is the shortage of energy in the Northwest. The Metropolitan Water District, for the southern portion of California, which serves 13 million persons and which had designs on Columbia River water, now lets it lobbyist say, diverting part of the Columbia south "is totally impractical, aside from the political problems" involved. However, despite this apparent change of attitude, the people of the Northwest are determined to continue their vigilance against diversion of Columbia water to the Southwest. This determination is reinforced by the unusually dry weather and low river flows that commenced in the fall of 1976 and are continuing into 1977. Representatives from Idaho, Oregon and Washington, on January 4, 1977 introduced H.R. 355; and Senator Henry M. Jackson, for himself and other cosponsoring Senators from Idaho, Oregon and Washington, on February 2, 1977 introduced S. 582. These companion bills would amend the Colorado River Basin project by extending the 1968 moratorium on reconnaissance studies of interbasin transfer of water. Both bills have been assigned to the respective House and Senate Committees on Interior and Insular Affairs in the 95th Congress.

PMFC's Newsletter No. 25 of October 1976, listed the publication *Columbia Basin Salmon and Steelhead Analysis, Summary Report* but did not mention the nearly 600-page volume, *Investigative Reports of Columbia River Fisheries Project*, published by the Pacific Northwest Regional Commission, July 1976. This volume's 22 investigative reports were the basis for the Summary Report. Dr. William G. Brown of Oregon State University contributed an economic report; the 21 other reports were prepared by members of a Work Group composed of the following:

Richard L. Allen, Washington Department of Fisheries
Kirk T. Beiningen, Oregon Department of Fish and Wildlife
Fred Cleaver, National Marine Fisheries Service
Dorien C. Lavier, Washington Department of Game
David W. Ortmann, Idaho Department of Fish and Game

Lloyd A. Phinney, Washington Department of Fisheries
Kenneth Thompson, Oregon Department of Fish and Wildlife
Fred Vincent, U. S. Fish and Wildlife Service Roy J. Wahle,
National Marine Fisheries Service.

A review of Columbia River fisheries in 1976 according to State or area discloses that spring and summer chinook runs to Idaho's waters were extremely poor, forcing complete closure of salmon angling in Idaho. There has been no angling for summer chinook since 1965. A severely restricted fishery was permitted for steelhead in the Salmon River and portions of the Snake River, as the 1976 run to Idaho was slightly better than those of 1974 and 1975, however, the 1976 run was still very poor. Passage by the 94th Congress in 1976 of a \$58.4 million authorization for the Lower Snake River Compensation Plan was heartening to Idaho. The Plan was the subject of PMFC Resolutions, No. 8 of 1974 and No. 9 of 1975 (see 28th Annual Report of PMFC for 1975, p. 18). Funds to implement the Plan in fiscal 1978 beginning October 1, 1977 still need to be appropriated. It is believed that the plan to construct eight hatcheries will more than triple the anadromous fish runs to the Snake, Salmon and Clearwater rivers.

The U.S. Supreme Court on December 7, 1976 considered a suit by the State of Idaho against the States of Oregon and Washington. The Court said Idaho may file an official complaint against Oregon and Washington for an equitable portion of the upriver anadromous fishery of the Columbia, but Idaho may not request voting membership in the 50-year-old Columbia River Compact in which Oregon and Washington are the voting members. In 1975 the Oregon Legislature passed a law inviting Idaho to join the Compact, but the law was unacceptable to Idaho. Washington would have to pass similar legislation and Congress would have to approve. New legislation is before the Oregon Legislature in 1977. The Governors of Idaho, Oregon and Washington in mid-December, 1976 created a tri-state Columbia River Fisheries Council to coordinate plans for conservation and harvest of salmon and steelhead in the Columbia River Basin and to advise the Governors. The Council will not interfere in fishing rights, under the Columbia River Compact, but it will serve as a vehicle to get all parties involved in discussion.

Arguments are continuing in the State of Washington over an accident at Priest Rapids Dam on the Columbia River which caused the death of more than an estimated one million incubating salmon eggs and fry, and over the need for increasing the required minimum flow from the dam. The Washington State Department of Fisheries is asking for \$1.65 million damages for the death of eggs and fry that were incubating in the gravel streambed below the dam when the Washington Public Power Supply System (WPPSS) had the river discharge at Priest Rapids Dam stopped to permit testing of a water intake mechanism for WPPSS nuclear energy plants Nos. 1 and 2. Failure to restore the discharge until sometime after the agreed upon time resulted in the fish kill. The State Energy Facilities Site Evaluation Council agreed on December 28 to hear the Department of Fisheries' case on the basis that WPPSS, in a section of the site-certification agreement, accepted responsibility for any damages that might

occur as a result of operation of its plants. However, the Council's hearing examiner ruled that the Council could not hear a claim filed by commercial fishermen for damages. The Department of Fisheries dropped its request for suspension of WPPSS' permits when WPPSS agreed to contribute \$180,000 for rearing ponds designed to mitigate the loss. WPPSS says the contribution is in the public interest and is not an admission of responsibility for the fish loss. Commercial fishermen in March 1977 filed a \$2.1 million suit in federal court against WPPSS, United Engineers and Constructors, Inc., and the State Department of Fisheries. The fishermen contend that the eggs and fry died through negligence of the defendants.

The Washington Department of Fisheries in a separate action is asking that the 36,000-cfs minimum discharge through Priest Rapids which is stipulated in the Grant County Public Utility District's U.S. Federal Power Commission license be increased to no less than 70,000 cfs. The present minimum flow results in the Columbia River below the dam being too shallow for satisfactory incubation of chinook salmon eggs. The 36,000-cfs during late fall, winter and early spring results in exposure, drying and desiccation of eggs buried in the gravel. The Department is asking for a minimum discharge of no less than 70,000 cfs during the period October 15 through April 30 each year. Final decision on the Department's complaint which was filed September 21, 1976 is up to the Federal Power Commission.

The State of California in the spring of 1976 passed a law requiring all commercial salmon trollers with vessels 26 feet long or longer to have the holds of their vessels inspected if they wished to land silver (coho) salmon in the area between the California-Oregon border and Pigeon Point between May 15 and 25. Vessels that have brining or freezing capabilities must be inspected at all times. The purpose is to prevent trolling for silver salmon off California between April 15 when the season for king (chinook) salmon opens and May 15 when the California season for silver salmon opens. Hold inspections begin May 13 and continue* until May 24 for those vessels without brining or freezing capabilities, but continue until the end of the season for those vessels that have such capabilities. See p. 26 of this report for Resolution 9, on fish hold inspections, that PMFC adopted at its 1976 annual meeting!

Review reports "of the 1976 Pacific Coast Troll Salmon Fishery" and "of the 1975 Salmon and Steelhead Sport Catches in the Pacific Coast States" were distributed and were summarized verbally at PMFC's annual meeting. These reports have been updated and included in Appendix 2 of this report.

Shellfish: The start of king crab (*Paralithodes camtschatica* and *P. platypus*) fishing seasons in various areas of Alaska did not get underway between August and September 1976 because of price disputes. But once fishing began, the U.S. fleet landed 106 million pounds compared to 98 million pounds in 1975. Foreign fleets did not harvest king crab off Alaska in 1975 and 1976. This was the result of bilateral agreements with the Soviet Union, Japan, and other nations. The U.S. king crab fleet has increased in recent years to over 400 vessels in 1976. King crab stocks in general are in good condition in all areas except

Adak; abundance in the Chignik-Alaska Peninsula and Kodiak regions will decline or remain low in 1977. Landings from Bering Sea in 1976 totalled 70 million pounds; they included 7 million pounds of blue king crab (*P. platypus*). Both red (*P. camtschatica*) and blue king crabs in Bering Sea are considered fully exploited. The previous record catch in Bering Sea was 59 million pounds in 1964, by foreign and U.S. fleets combined.

The 1976 harvest by the U.S. fleet of the two species of tanner or snow crabs (*Chionoecetes bairdi*, the larger; and *C. opilio*, the smaller) was a record 81 million pounds. Since 1974 the harvest has been from fishing specifically for the larger species rather than from incidental fishing for other crabs and fishes. Tanner crab stocks in the Gulf of Alaska are approaching full utilization, but those of the Bering Sea are still underutilized and stock levels of both species are high. Japan continued to harvest tanner crab in Bering Sea and obtained its quota of approximately 17 million pounds in 1976, as stipulated in the U.S.-Japan bilateral agreement.

Landings of scallop meats in Alaska in 1976 were 264,800 pounds, a decrease of about 140,000 pounds from 1975's landings.

The commercial fishery for geoduck clams (*Panope generosa*) in the State of Washington has increased in value and market demand. The harvest is approaching the maximum sustained yield which is dictated by existing laws. Limited-entry management of the fishery has worked reasonably well and is being evaluated, however, effective management requires considerable enforcement effort.

Dungeness crab landings during the 1975-76 seasons off California, Oregon and Washington were very good, but they continued to decline during the 1977 seasons (calendar year) off British Columbia and Alaska. California had its best season since the 1958-59 season. The sudden change from scarce to abundant was accompanied by price disputes and marketing problems, but in general the abundance was most welcome. See Appendix 2, page 45 of this report for "Review of the 1975-76 Pacific Coast Dungeness Crab Fishery"; a written preliminary review was distributed and was summarized verbally at PMFC's annual meeting.

ACTIONS AT THE ANNUAL MEETING

There were 152 registrants at PMFC's annual meeting at the Sheraton-Renton Inn near the Seattle-Tacoma International Airport, November 16-18. All registrants were sent minutes of the meeting. A summary of the first symposium at the meeting, "Regional Fishery Management Councils — A New Regime for Conservation and Management of Marine Fisheries," was presented earlier in this report (see page 9). The following is a summary of the second symposium at the annual meeting.

Eastland Fisheries Survey — The fisheries Constituency Takes Its Case to the Congress: Moderator Henry O. Wendler, Washington Department of Fisheries, introduced the panelists and called upon Lawrence D. Six, PMFC Staff Coordinator, to describe the background of the Eastland Fisheries Survey and

the organization and methods used by PMFC in the gathering of "grass-root" information for the Survey within PMFC's area of responsibility. (Since the background of the Survey is presented on page 6 of this report, the background will not be repeated here. — Editor)

Panelist Six: PMFC's survey efforts were divided into: 1) commercial marine fisheries; and 2) recreational marine fisheries and environmental concerns. Both of these divisions included fisheries for anadromous fish in fresh water, as well as in salt water. The commercial fisheries division was subdivided into harvesting, processing, marketing and consuming components. These components were subdivided further according to fishery since the problems or concerns frequently differ between fisheries.

A total of 15 hearings were held from March 8 through September 30, 1976. Seven of the hearings on commercial fisheries were in communities extending from Long Beach, CA to Kodiak, AK and seven on recreational fisheries and environmental concerns were in communities extending from San Diego, CA to Lewiston, ID and Anchorage, AK. The fifteenth hearing was in Honolulu, HI on both commercial fisheries and recreational fisheries-environmental concerns.

Approximately 800 participants attended the hearings which consisted of a general "town hall" type opening session for discussion of general problems. The general session was followed by fishery-by-fishery subgroup sessions. Discussion was stimulated by use of a worksheet which was issued to each participant. It listed supportive conditions or activities and related federal programs and provided space for evaluations, priorities, and remarks. Over 300 worksheets were completed and returned. Each session and subgroup session was chaired by a knowledgeable person, who stimulated and controlled the discussion. Another person took notes and tape recorded the discussion. After each hearing, a summary of the suggestions and comments, including those received via worksheets and letters, was developed and mailed to each participant with a request for corrections and additions.

From the accumulated input a West Coast summary was derived for each fishery by combining information from all geographical areas where that fishery was surveyed. Areas of consensus were identified and emphasized; where differing views existed, these alternative views were presented. The draft regional summaries were mailed to the participants for review.

Since the Pacific salmon fisheries are so complex and the input are so voluminous, a special coastwide workshop was convened, October 25-27 in Portland, to assist PMFC in development of a comprehensive but reasonably concise coastwide summary. Representatives from all sections of the coast and of the array of user groups participated. A similar workshop was held, November 3-5 in Portland, to summarize information on Pacific trawl fisheries. (PMFC in March 1977 published a 107-page *Summary of Pacific Area Input to the Eastland Fisheries Survey*. The large volume of material that was summarized has been retained in PMFC's archives. —Editor)

Six also described a National Conference for the Eastland

Fisheries Survey, which was held subsequently at Arlington, Virginia, November 29-December 2, with the cooperation of NMFS and NOAA. At that Conference the three interstate marine fisheries commissions consolidated the results of the surveys throughout the United States generally. Each commission was to sponsor 15 participants, representing the fisheries constituencies of the Atlantic, Gulf and Pacific areas. In addition, 5 participants from the Great Lakes area were to be sponsored. (The Conference and the consolidation efforts resulted in *A Report to the Congress: East and Fisheries Survey*, which is being printed in May 1977. Each interstate marine fisheries commission will mail additional copies to its respective constituency and in addition will supply copies upon request. —Editor)

Panelist Earl Carpenter (a Bodega Bay, CA, salmon troller and crab fisherman, and a PMFC Advisor) reviewed the concerns of Dungeness crab fishermen at the Eastland Fisheries Survey hearings. A major concern was loss of pot gear due to foreign trawling.

Panelist Don Christenson (a Newport, OR, charter boat operator, and a PMFC Advisor) discussed the contribution of recreational fishing and charter boats to the economy of coastal communities. The major concern of charter boat operators is need for recognition as a bona-fide commercial enterprise and to be referred to as "commercial passenger-carrying fishing vessels" instead of "party boats."

Panelist Les Clark (a Chinook, WA, gillnetter, Chairman of the Board of Columbia River Fishermen's Protective Union, and a PMFC Advisor) emphasized the conclusion, from the October workshop in Portland, that for salmon fisheries prime attention must be given to protection of habitat and enhancement of stocks and to improvement of fish passage at dams and other obstructions. All other issues are subordinate to these prime concerns. Allocation problems would be alleviated if sufficient quantities of fish were available for harvest by all user groups.

Panelist Charles S. Collins (Roseburg, OR; consultant, resource development; President, Oregon Division, Izaak Walton League; and a PMFC Advisor) re-emphasized Clark's concern and added a concern about the need to recognize anglers as "personal-use" fishermen rather than "recreational" fishermen since most anglers utilize game fish for food as well as for sport.

Panelist Arthur Paquet (Astoria, OR; a trawl fisherman; Director, Oregon Trawl Commission; and a PMFC Advisor) emphasized the need to: improve consumer acceptance of groundfish; expand inland markets; and increase processing capacity and demand for presently used species and for underutilized species of groundfish.

Moderator Wendler thanked the panelists and announced the subject was open for general discussion.

Scott Harrington (Gig Harbor, WA, and Sea Grant) commented that too little mitigation money (for damage to Columbia River salmon and steelhead stocks) gets down to production. Dr. F. C. Cleaver (Portland, OR; NMFS, Columbia Fisheries Program) replied that only 5% goes to administration in NMFS.

John P. Gilchrist (Sacramento, CA; Secretary/Manager, California Seafood Institute; and a PMFC Advisor) said Congress

has before it a proposed grant to determine the proper nomenclature (common names) of fishes. California faced this problem more than four years ago and through a committee that was appointed we adopted our own nomenclature. We are concerned about Congress preempting the rights of the States on this. There are other problems: mariculture, workman's compensation, water quality, and pure foods rulings (regarding mercury, PCB and other pollutants affecting fish). The Councils are not going to resolve these problems. There are no checks and balances in the Councils. However, the States in concert through PMFC can appeal in strength to Congress on these and similar matters. It is for that reason that I urge the continuance of PMFC.

Don Christenson added that during the Eastland Fisheries Survey meetings the upper most concern was to keep the federal agencies out of things that local agencies and groups can handle.

Capt. Herbert H. Mulvany (U.S. Coast Guard, San Francisco, CA) at the request of Moderator Wendler responded regarding Coast Guard preparedness in personnel, ships and equipment to respond to fishermen's concerns and the extension of fisheries jurisdiction to 200 miles. He said the Coast Guard was doing its best, but that experience after March 1, 1977 would reveal how large the task was and how well the Coast Guard was dealing with it.

John Gilchrist asked John Harville to secure copies of California's boat effluent law and to distribute the copies to other PMFC States so boat owners in those States would be aware of the type of legislation that they might be concerned with in the future.

Capt. R. S. Lucas (U.S. Coast Guard, Juneau, AK) commented on the shifting from AM Marine Radio Telephones to VHF and said that there was a move to accomplish this over a 5-year period. There is also concern about the change over from LORAN A to LORAN C. The Coast Guard's funds are not adequate for the operation of both LORAN A and C for a longer period than now planned, but if sufficient requests were made to Congress, it might provide the funds and the Coast Guard could then operate both systems past the approximately January 1 1979 date for termination of LORAN A. John Harville commended the Coast Guard for funding of a study of the transition from LORAN A to B.

Resolution Adopted and Actions to Date

Proposals on 14 subjects were presented to PMFC for consideration as resolutions. The Advisory Committee and Scientific and Management Staff conducted final reviews and made recommendations on each proposal before the Commission voted to adopt or reject individual proposals. The Commission adopted 10 proposals as Resolutions, rejected 2 and tabled 2. The adopted Resolutions were widely distributed by publication in *Pacific Marine Fisheries Commission Newsletter No. 26*, November 1976. This distribution included the 67 Congressional Delegates from PMFC's member States. Additional actions were taken on those Resolutions that required immediate consideration. Where pertinent each of the remaining Resolutions are being sent individually by letter to PMFC's Congressional Dele-

gates, and to chairmen and members of Congressional Committees as reorganization of the 95th Congress proceeds. Other federal officials; interstate marine fishery compacts; and national, regional and local fishery and wildlife or environmental organizations or groups are being advised in a similar manner of PMFC's concerns regarding specific Resolutions. The text of each Resolution plus additional action on each through March 21, 1977 follows. Missing numbers are due to proposals that were rejected (5 and 8) or tabled (6 and 7).

1. Evaluate Effects of Limited Entry

WHEREAS, the Fishery Conservation and Management Act of 1976 suggests the use of limited entry as a management tool; and

WHEREAS, the Act requires that one State in developing a limited entry plan not discriminate against another State's fishermen; and

WHEREAS, there have been statements that limited entry will result in more equitable distribution of benefits both to the fishermen and concerned public, and it has been expressed that limited entry is desirable to produce economic efficiency; and

WHEREAS, considerable apprehension and doubts exist as to the desirability of limited entry; and

WHEREAS, conflicting opinion exists as to the success of existing limited entry programs; and

WHEREAS, some States are considering limited entry for certain fisheries;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission requests that the federal government fund a study to be guided by the Pacific Marine Fisheries Commission and the Regional Fishery Management Councils to be undertaken by the States to determine the total effects of a limited entry fishery. The study should determine but not be limited to social gains or losses from decreased employment, potential for development of monopolies, resulting redeployment of fishing gear and fishermen and other factors that may have a bearing on the advisability of limiting entry to marine fisheries; and

BE IT FURTHER RESOLVED, that the results of the study be published and reviewed by the public.

Adopted unanimously by the five Compact States, Alaska, California, Idaho, Oregon, and Washington

Action: In addition to the previously mentioned wide distribution by Newsletter No. 26, the following action has occurred on this Resolution. The North Pacific Fishery Management Council acknowledged in January that evaluation of the effects of "Limited Entry" was very desirable but stated that the Council had no further comment at that time.

2. Control Relocation of Vessels Sold under Gear Reduction Programs

WHEREAS, the State of Washington Department of Fisheries is conducting a Gear Reduction Program by purchasing fishing vessels, their gear and equipment from their owners for

the purpose of taking these vessels out of the Washington fishery; and

WHEREAS, the State of Washington Department of Fisheries Gear Reduction Program is financed with federal funds; and

WHEREAS, the vessels purchased through the Gear Reduction Program are sold at public auction and may enter the fisheries of other States; and

WHEREAS, these vessels, because of their low cost at auction, have already entered the fisheries of other States and they may continue to do so; and

WHEREAS, there are a sufficient number of fishing vessels in the States of Alaska, Oregon and California to adequately harvest those fully utilized species of fish; and

WHEREAS, the fishing vessels bought and sold through a Gear Reduction Program are neither new nor modern, but typically are old and obsolete and thereby will not upgrade the fishing fleets of other States; and

WHEREAS, the States of Alaska, Oregon and California cannot specifically prohibit vessels sold as a result of a gear reduction program of another State from entering their fisheries;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission urges the Pacific and North Pacific Fishery Management Councils and /or the individual States to consider and where appropriate restrict the relocation of fishing vessels sold as a result of a gear reduction program.

Adopted unanimously by the five Compact States

Action: The North Pacific Fishery Management Council replied that this Resolution would be considered further, but that relocation of vessels sold under gear reduction programs is not as great a problem in its area of jurisdiction as it is in other areas. In Alaska there is a limited entry program, therefore, the source of vessels in a fishery is not particularly important since the total number of vessels is controlled.

3. Impose Duties to Offset Subsidies of Foreign Fisheries Products

WHEREAS, certain foreign governments are now and have been subsidizing fishermen and processors of fishery products; and

WHEREAS, these subsidies have caused fisheries products to be exported to the United States at prices which cannot be met by American processors; and

WHEREAS, increased production by American fishermen under the Fishery Conservation and Management Act of 1976 cannot be realized if the domestic market is to be taken over by foreign imports;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission urges the NMFS to investigate the extent of subsidies received by foreign fishermen and processors and the impact these subsidies have on American fishermen and to take all possible action urging the International Trade Commission to impose the countervailing duty provision in section 303 of the Tariff Act of 1930 as amended.

Adopted: the States of Alaska, Idaho, Oregon and Washington voting for, and California voting against

Action: Sometimes PMFC's Resolutions concern matters of nationwide interest on which government agencies and other groups are taking action or have recently taken action. Resolution 3 is an example. Prior to its adoption on November 18, the U.S. Treasury Department made a tentative ruling on October 7, 1976 that it would impose countervailing duties on imports of cod and flounder from Canada. The imposed duties would be equal to the bounty or grant paid by Canada to its fishermen and processors under its Groundfish Temporary Assistance Program. However, final decisions on imposition of the countervailing duties are not due until April 1, 1977. The Fisherman's Marketing Association of the State of Washington was an early petitioner in the October action.

4. Modify Impact of the Longshoremen's and Harborworkers' Act

WHEREAS, there is considerable national support to maintain and enhance a viable fishing industry in this country; and

WHEREAS, national concern has been expressed by legislation to aid the construction of commercial fishing vessels and by proposed legislation to provide both funds for commercial fishing vessel construction and on-shore commercial processing facilities; and

WHEREAS, the Department of Labor interpretations of the 1972 amendments to the Longshoremen's and Harborworkers' Act extend the coverage of that Act to persons engaged in marine activities not previously covered by the Longshoremen's and Harborworkers' Act; and

WHEREAS, this interpretation includes, but is not limited to, the activities of fish houses and boat yards servicing the fishing industry; and

WHEREAS, fish companies and boat yards are now forced to carry, in addition to State compensation insurance, Longshoremen's and Harborworkers' insurance coverage on their employees; and

WHEREAS, such coverage is often in excess of 120 percent of the amount paid for state compensation insurance; and

WHEREAS, the imposition of this coverage has created a severe hardship on fish companies and boat yards; and

WHEREAS, private insurance carriers have cancelled the insurance coverage for many fish houses and boat yards; and

WHEREAS, some boat yards have been forced out of business, not being able to insure employees, while others have been forced to pay extremely high rates to States for Longshoremen's and Harborworkers' coverage when private insurance was unavailable; and

WHEREAS, this increased cost of doing business will force boat yards to either go out of business, curtail their services or pass their increased costs to fishermen thereby making it exceedingly difficult to have fishing vessels constructed or repaired; and

WHEREAS, this increased cost of doing business will force fish companies to either go out of business, curtail their services or pass their increased costs on, thereby decreasing the price paid for fish to the fisherman and increasing the price of fish to the consumer;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission petition Congress to immediately amend the Longshoremen's and Harborworkers' Act, exempting from it those States which have adequate coverage; and

BE IT FURTHER RESOLVED, that Congress, failing to amend the Longshoremen's and Harborworkers' Act as requested, appropriate sufficient funds to pay for the Longshoremen's and Harborworkers' additional cost of insurance coverage that the fishing industry and its supporting industries may be required to carry.

Adopted: the States of Alaska, California, Oregon and Washington voting for, and Idaho abstaining

Action: In November prior to PMFC's annual meeting, the Executive Director, in anticipation of need for information on the subject matter of the Resolution and on the assumption that PMFC would adopt the Resolution, sent a copy of the proposed resolution to the U.S. Department of Labor, explaining fishing industry concern regarding the 1972 amendments to the Longshoremen's and Harborworkers' Compensation Act. The Department replied that it plans a contract study of the insurance problem relating to administration of the amended Act. This may lead to legislative initiative for insuring that proper coverage is available to all employers. The Department also said it had been asked to comment on legislation being prepared for introduction in 1977 in the Legislature of the State of Washington, and that the Washington Department of Labor and Industries should be contacted for further information on that State's legislation.

Subsequently, PMFC learned in December that legislative changes in Oregon's workmen's compensation insurance would be introduced in Oregon's 1977 Legislature. It also learned in mid-March 1977 from Capt. Frank B. Bohannon, Executive Director of Alaska Fisheries Safety Advisory Council, that the Council is developing an insurance program (Alaska Fisherman's Safety Incentive Program) with a target date of June 1, 1977 for implementation. He says the program has the potential of reducing loss of life, personal injury, vessel casualty and insurance premiums while simultaneously giving the fishing industry a strong say in coming mandatory Federal Standards.

9. Fish Hold Inspection and Validation Prior to Season Opening

WHEREAS, some fish and shellfish from the four Pacific Coast States and the Province of British Columbia recognize no boundaries; and

WHEREAS, season opening dates, and size regulations, vessel capability, and programs of fish hold inspection and validation differ between the various management jurisdictions; and

WHEREAS, some fishermen use these differences unfairly and illegally to take fish and shellfish prior to their State's or

Province's legal opening date for these species, causing an economic loss of the resource and a direct loss to ethical fishermen;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission calls upon the appropriate Regional Fishery Management Councils, and the responsible fishery agencies of the four Pacific Coast States to bring about a unified, workable, and enforceable fish hold inspection and validation program which will not unfairly encumber honest commercial fishermen, but will bring a halt to the rapidly increasing preseason fishing; and

BE IT FURTHER RESOLVED, that the Pacific Marine Fisheries Commission requests the United States government to enter into discussions with the Canadian government regarding possible like regulations in that country.

Adopted: the States of Alaska, California, Idaho and Washington voting for, and Oregon voting against

Action: The North Pacific Fishery Management Council in late January 1977 replied in regard to this Resolution that "fishhold inspection and validation prior to season openings will be considered during the development of Fishery Management Plans where such regulations are pertinent." The Pacific Fishery Management Council on March 18, 1977 included in its management plan for ocean salmon fishing a provision for fishhold inspection and validation on May 13 in California prior to the opening of its coho salmon trolling season on May 15, and in Washington and Oregon north of Tillamook Head 48 hours prior to the resumption of the chinook and the opening of the coho salmon trolling season on July 1 in those areas.

10. Amend the Marine Mammal Protection Act of 1972

WHEREAS, the Marine Mammal Protection Act of 1972 was enacted because of Congressional concern for marine mammals; and

WHEREAS, it was not Congressional intent that implementation of the Act should unnecessarily impede rational management of marine resources by the States; and

WHEREAS, protection of all marine mammals under the Act has caused a redistribution of some species to the detriment of other resources; and

WHEREAS, adequate biologic, sociologic, and economic data do not exist to properly evaluate the effect of implementation of the Marine Mammal Protection Act upon fishery resources; and

WHEREAS, the National Marine Fisheries Service is interpreting the Act to mean nearly total protection for marine mammal species; and

WHEREAS, this strict interpretation of the Act has been extended to cover even basic biologic and ecologic research on many important marine mammals, thus making it difficult for responsible agencies to conduct the studies required for improved management of the affected ecosystems;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine

Fisheries Commission strongly reaffirms its recommendations in 1975 Resolution 11 that the Marine Mammal Protection Act be amended to redefine terms and definitions to permit an ecosystem approach to marine resource management; and to return management responsibilities to the States where requested as quickly as possible; and

BE IT FURTHER RESOLVED, that the Act be revised and interpreted to encourage the States and other competent research entities to conduct biologic, ecologic, and economic studies to evaluate the impacts of the Act upon the ecosystems affected and upon the conservation and utilization of the total resources of those ecosystems; and

BE IT FURTHER RESOLVED, that Congress appropriate adequate funds to contract for these studies through the appropriate management body.

Adopted unanimously by the five Compact States

Action: This Resolution was the third adopted during the past three years by PMFC on the Marine Mammal Protection Act of 1972 (MMPA). The 1974 Resolution, No. 4, supported a 2-year extension of a moratorium to allow the incidental taking of marine mammals during commercial fishing. It also urged repeal of MMPA and cooperation with coastal States in protecting marine mammals through provisions of the Endangered Species Act of 1973. The 1975 Resolution, No. 11, urged amendment of MMPA to encourage the return of management responsibilities to the States, and to revise definitions so state and federal agencies may manage all animals in the marine ecosystem.

In soliciting actions in support of these Resolutions, PMFC stressed the logic of managing ecosystems on a scientific basis rather than totally protecting selected predators (marine mammals) while intensively harvesting their prey (fish and shellfish).

Representatives of PMFC on December 2, 1976 participated in a National Fisheries Policy Conference in Washington, D. C. The Conference endorsed the following Policy Statement:

"The Marine Mammal Protection Act of 1972 as presently written, and as has been interpreted by the court, presents great difficulty and concern to the United States fisheries. The policy and principle upon which the Act is based appear to be in conflict with the sound policies of resource management and maintenance of the health and stability of the marine ecosystem which were recognized by Congress in the enactment of the Fishery Conservation and Management Act of 1976.

"The National Fisheries Policy Conference sees the possibility of growing conflict between marine mammals, fishery stocks, and man, with the ecosystem and, therefore, suggests that a sound, comprehensive resource management program must exist which gives equal and balanced consideration to all components of the ecosystem including fishery resources, marine mammal populations, and the socio-economic factors affecting this system. The increasing food requirements of the human population necessitate an enhanced use of the ocean as a source of protein for man and, thus, substantiate the need to manage the entire ecosystem in a rational and efficient manner.

"Participants of the National Fisheries Policy Conference endorse the need for amendatory legislation to bring the concept of conservation, development and utilization of fishery resources within the framework of the objectives of the Marine Mammal Protection Act. Efforts to this end have the support of the Conference. "

Based upon this policy statement the Fishery Affairs Office of the National Cannery Association along with other representatives of the fishing industry in 1977 began drafting alternative approaches to amendment of the MMPA. PMFC maintains an active liaison with that Office on this project.

The MMPA was a matter of considerable concern to Pacific Coast participants in the East and Fisheries Surveys. In summary the participants said Congress should amend MMPA to allow rational management of marine mammal populations as integral segments of the marine ecosystem to make possible, where necessary, the prevention of overpopulation of marine mammals with resultant deleterious effects on economically important species upon which they feed.

Early in 1977, the Department of Commerce submitted to Congress a draft by NOAA of proposed amendments to MMPA. Senator S. I. Hayakawa on January 19, 1977 introduced S. 373, "To amend the Marine Mammal Protection Act of 1972 in connection with the incidental taking of marine mammals with commercial fishing. " The bill, which incorporated most of the language proposed by NOAA, was referred to the Senate Committee on Commerce (now the Committee on Commerce, Science and Transportation).

*PMFC, in response to a request for advice in February 1977 from Congressman Paul N. McCloskey, Jr.,- furnished him with a detailed review of PMFC'S position and action in regard to the Marine Mammal Protection Act of 1972. This review cited a number of discussions in which knowledgeable scientists stressed the need for management of total ecosystems rather than total protection of marine mammals concurrent with intense exploitation of other animals in the systems. The review also suggested three alternatives for overhaul of the MMPA: **

- 1. Selective cleanup and clarification of language in the present Act;*
- 2. Scrap the Act entirely, and incorporate its objectives and positive values under the Endangered Species Act and the Fishery Conservation and Management Act (perhaps via a combination or "omnibus" bill);*
- 3. Fundamentally restructure the Act to parallel the Endangered Species Act in concept, and to be consistent with it and the Fishery Conservation and Management Act.*

11. To Improve Marine Weather Data

WHEREAS, commercial and sport fishermen who ply the waters off the Pacific Coast are dependent upon timely and accurate marine weather forecasts for the safe and efficient operation of their vessels; and

WHEREAS, the marine community has suffered loss of life and property from unexpected storms; and

WHEREAS, the U. S. Coast Guard is decommissioning lightships and lighthouses which heretofore have provided valuable weather information to the National Weather Service, and historically lack of data from the ocean area has resulted in inadequate forecasting; and

WHEREAS, commercial fishermen have lost valuable fishing time as a result of inadequate marine weather forecasts; and

WHEREAS, such weather forecasts depend upon receipt of adequate data by weather forecasters for their interpretation; and

WHEREAS, forecasters are discouraged from specializing in marine weather forecasting by a program of cross-utilization implemented by the National Weather Service; and

WHEREAS, commercial and sport fishermen require detailed weather forecasts and the National Weather Service has provided detailed forecasts to other groups; and

WHEREAS, Congress has appropriated money for the construction and positioning of weather buoys that provide data for marine weather forecasters for some coastal areas, additional buoys would further aid marine weather forecasting; and

WHEREAS, SEASAT-A, the first truly oceanographic satellite, that will aid marine weather forecasting by providing complete global data every 36 hours is scheduled to be launched in mid-year 1978; and

WHEREAS, such coverage is needed every 12 hours to provide more complete data for marine weather forecasts;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission petition Congress to appropriate adequate funds to the National Oceanic and Atmospheric Administration for the construction and positioning of additional weather buoys for the Pacific rim area; and

BE IT FURTHER RESOLVED, that the Pacific Marine Fisheries Commission urges the National Weather Service to provide a program for specialization; and that the National Weather Service provide commercial and sport fishermen detailed marine weather forecasts for the entire coast; and

BE IT LASTLY RESOLVED, that Congress consider continuing support to NASA-NOAA toward construction of a SEASAT system that would provide global service on a 12-hour basis.

Adopted unanimously by the five Compact States

Action: This resolution expands and continues the efforts begun by Resolution 7 of 1975 which urged improvement of marine weather forecasting capabilities.

12. Extend Use of AM Marine Radio-Telephones

WHEREAS, commercial and recreational fishermen of the Pacific Coast have successfully utilized AM marine radio-telephones for many years; and

WHEREAS, AM marine radio-telephones have aided the

safe and efficient operation of commercial and recreational fishermen by providing dependable, inexpensive, long and short range communications; and

WHEREAS, production of AM marine radio-telephones has ceased, nevertheless they are presently providing dependable communications to the fishing fleet and could continue to do so in the future; and

WHEREAS, VHF marine radio-telephones provide short range communications only; and

WHEREAS, the Federal Communications Commission, as a result of the 1974 World Maritime Administrative Radio Conference, will force a change of each and every SSB channel from 4 to 22 MHz; and

WHEREAS, the channel changes, when the Federal Communications Commission determines they are to be effective, will be costly to users of SSB marine radio-telephones; and

WHEREAS, the Federal Communications Commission will not license AM marine radio-telephones after January 1, 1977; and

WHEREAS, AM marine radio-telephone communication does not interfere with SSB marine radio-telephone communication;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission, to protect the fishing industry from unnecessary costs and to insure safe and reliable communications for the fishing fleet, urges the Federal Communications Commission to continue to license the use of AM marine radio-telephones until January 1, 1982.

Adopted unanimously by the five Compact States

Action: Telephone conversations, with personnel of the Federal Communications Commission (FCC) in Portland, Oregon and Washington, D.C., and information subsequently received disclose that PMFC's Resolution was at least one year too late. The FCC said, in spite of the many petitions it received in recent months, there would be no relaxation of the December 31, 1976 deadline for changeover from double sideband (DSB) to single sideband (SSB) and very high frequency (VHF) AM equipment in maritime radio communications. The regulation was announced in 1968 and was reemphasized in 1972. However, the FCC is considering permitting use of DSB transmitters already installed for emergency distress only on 2182 kHz.

The FCC supported its position as follows:

- 1. Very adequate warning of the change was announced some 10 years ago with wide publicity and public participation in a series of hearings and discussions. The decision then was for the change to occur over a 10-year period to ease the economic burden on the public and to bring the United States in line with other nations in an agreement reached at the World Administrative Radio Conference in Geneva in 1967.*
- 2. "The prime purpose in the program is to relieve the intolerable congestion on the medium and high frequencies where SSB and DSB AM equipment operate. This was done by splitting the old DSB channels into*

two SSB channels, and by moving short-distance communications (which often account for 90% or more of coastal communications) into the VHF bands. The measures are expected to reasonably ensure that when a vessel operator needs a medium or high frequency channel for longer distance communication, the channel will be available for use." A shift from DSB to SSB approximately doubles the number of voice channels that can be provided.

- 3. The rest of the world maritime radio community is moving, or has moved, from the DSB method of ship radio communications as a result of the World Administrative Radio Conference in 1967, and the United States cannot realistically or practically stand still in this international environment. In fact, much of this country's boating community has already changed to SSB in the medium and high AM frequency bands, and since 1972 use of DSB equipment has not been permitted in new ship radio stations. These operators of new equipment cannot use it with maximum efficiency until all disruptive DSB operations on the channels are discontinued. These operators can be expected to object to any further delay in termination of DSB operations.*
- 4. SSB equipment works well and is reasonably priced. Sets are available at prices as low as \$ 700. The new transistorized and printed circuit sets are far more efficient and reliable than are the older tube sets.*
- 5. For short-range communications neither DSB or SSB systems are really appropriate and VHF should be used. Prices for VHF ship radio sets begin at \$ 199. The SSB equipment now required is for use over longer communication ranges. Special consideration in Alaska for the VHF phase of the program is necessary because the extensive and convoluted coastline combined with mountainous terrain are a barrier to efficient use of VHF.*

13. Improve NMFS¹ Role in Marine Recreational Fisheries

WHEREAS, the welfare of coastal fish stocks is directly related to the amount of factual knowledge and data available; and

WHEREAS, the demand for marine recreational fishing is expanding while acceptable catch standards are decreasing on many target species of marine game fish; and

WHEREAS, long-term, discipline-oriented research on the biologic, socio-economic, and population parameters of many coastal zone fishery stocks is needed for proper decision-making for management and allocation for the greatest user benefits;

NOW BE IT THEREFORE RESOLVED, that the Pacific Marine Fisheries Commission urges Congress and the Department of Commerce to provide funding to NMFS for allocation to the States for cooperative research programs as soon as possible to improve and expand cooperative efforts on marine recreational fisheries.

Adopted unanimously by the five Compact States

14. Urgent Need to Amend Portions of the Fishery Conservation and Management Act of 1976

WHEREAS, P.L. 94-265 (Fishery Conservation and Management Act of 1976) becomes effective on March 1, 1977 after which no foreign vessel may fish within the 200-mile conservation zone without first obtaining a valid and applicable permit issued pursuant to Sec. 307(2) of the Act; and

WHEREAS, the Act specifies extensive and prescribed procedures for management of the various fisheries; and

WHEREAS, there is insufficient time remaining to carry out many of the required functions inherent in the first time operations under the Act; and

WHEREAS, the United States must act in an orderly as well as a timely fashion to properly implement sound management plans;

NOW BE IT THEREFORE RESOLVED, that Congress be urged to take emergency one-time action to defer or modify the steps required as follows:

1. Reduce the 60-day minimum period for Congressional review.
2. Reduce the 90-day minimum period required for review by the Council on Environmental Quality.
3. Provide for concurrent handling of elements requiring sequential processing.

Adopted unanimously by the five Compact States

Action: This Resolution was adopted unanimously by PMFC in extraordinary action as an emergency at its annual meeting. In mid-December copies of the Resolution, were sent to key Senators, Congressmen, and Committee Chairmen, and to their staffs with an urgent request for one-time-only action to alleviate the time constraints threatening implementation of the Fishery Conservation and Management Act of 1976. The Department of State, NOAA, NMFS, and the North Pacific and Pacific Fishery Management Councils were also sent copies of the Resolution and were informed of PMFC's actions to implement it. The eight Fishery Management Councils made urgent requests also, and NMFS Director Bob Schoning met on an informal basis periodically with members of Congress and their staffs to brief them on the status and problems of implementing the Act by March 1, 1977. Congress responded quickly and positively in early February by passage of the Fishery Conservation Zone Transition Act (P.L. 95-6) which the President approved on February 21. Congress in February also passed a second piece of legislation (H.R. 3753) which amended and added to P.L. 95-6 approval of four additional governing international fishery agreements. President Carter quickly approved H.R. 3753.

P.L. 95-6 gave Congressional approval to the six governing international fishery agreements (GIFAs) then signed with the Governments of the People's Republic of Bulgaria, the Socialist Republic of Romania, the Republic of China, the German Democratic Republic, the Union of Soviet Socialist Republics, and the Polish People's Republic. It delayed until May 1, 1977 the requirement that foreign fishing vessels have on board valid per-

mits to fish within the fishery conservation zone, or for anadromous species or Continental Shelf fishery resources beyond such zone. It granted the Secretary of Commerce discretion to delay until May 1 payment of applicable fees for permits issued, and it reduced to only 7 the 45 days for appropriate Councils to submit to the Secretary of Commerce written comments on applications for permits.

H.R. 3753 added approved agreements with the European Economic Community, the Government of Japan, the Government of the Republic of Korea, and the Government of Spain to the six GIFAs previously approved by P.L. 95-6. The agreement with Japan is for one year only, but the U.S. Departments of State and Commerce are confident that a 5-year GIFA would be forthcoming later in 1977.

Recommendations Adopted and Actions Taken

PMFC adopted two recommendations at its annual meeting in addition to the Resolutions just mentioned.

Commendation to the U.S. Coast Guard

The Pacific Marine Fisheries Commission commends the U.S. Coast Guard for its service to the commercial and recreational fisheries in its mission to enforce U.S. laws and protect life and property. PMFC supports present and future funding requests necessary to maintain present Coast Guard programs and to permit the Coast Guard to meet its increased responsibilities relating to extended jurisdiction and expanding recreational fisheries.

Action: In addition to publication in PMFC Newsletter No. 26, November 1976, copies of the Commendation were sent to: Admiral Owen W. Siler, Commandant, U.S. Coast Guard, Washington, DC; Vice Admiral Austin C. Wagner, Pacific Area Commander, U.S. Coast Guard, San Francisco; Chairman Melvin Price, U.S. House of Representatives Armed Services Committee; Chairman George H. Mahon, U.S. House of Representatives Committee on Appropriations; Subcommittee Chairman John J. McFall, Subcommittee on Transportation of the House Committee on Appropriations; Chairman Leonor K. Sullivan, U.S. House of Representatives Committee on Merchant Marine and Fisheries; Subcommittee Chairman Mario Biaggi, Subcommittee on Coast Guard and Navigation of the House Committee on Merchant Marine and Fisheries; Subcommittee Chairman Robert L. Leggett, Subcommittee on Fisheries and Wildlife Conservation and Environment of the House Committee on Merchant Marine and Fisheries; Chairman John C. Stennis, U.S. Senate Committee on Armed Forces; Chairman John L. McClellan, U.S. Senate Committee on Appropriations; Subcommittee Chairman Birch Bayh, Subcommittee on Transportation of the Senate Committee on Appropriations; Chairman Warren G. Magnuson, U. S. Senate Committee on Commerce; Subcommittee Chairman Russell B. Long, Subcommittee on Merchant Marine of the Senate Committee on Commerce; Subcommittee Chairman Ernest F. Hollings,

Subcommittee on Oceans and Atmosphere of the Senate Committee on Commerce; and to certain other members of Congress.

The Coast Guard thanked PMFC for its support. The Congressional addressees replied that they would attempt in the 1st Session of the 95th Congress to ensure sufficient authorization of funds for improvement of Coast Guard facilities and operating expenses, so that the Coast Guard will be in a position to carry out the missions imposed on it by Congress, including enforcement of the Fishery Conservation and Management Act.

Recommendation for Modification of Draft Preliminary Fishery Management Plan for Foreign Trawl Fisheries off Washington, Oregon and California

The Pacific Marine Fisheries Commission supports the following recommendation received from its Groundfish Committee.

The Technical Subcommittee of the International Groundfish Committee in a 1976 report concluded that stocks of Pacific ocean perch in the Columbia and Vancouver INPFC areas were seriously depleted. Further, the Technical Subcommittee recommended that foreign and domestic fisheries on these stocks be limited to allow restoration.

In 1976, a target fishery on Pacific ocean perch developed in the Columbia area off the central Oregon coast. Total catch of *Sebastes alutus* in the Columbia area will exceed 680 metric tons in 1976, about 132% above 1975's total, and 248% above the 5-year mean. Sampling of the domestic catch showed that well over 50% of the perch landed from central Oregon were sexually immature fish mostly 6 to 8 years old and 2 to 4 years away from spawning capability. These age groups also are still below critical age — they are still growing faster than they are dying as a group. The 1970-year class appears to be the strongest since the foreign fishery depleted stocks in the 1960's.

Indications are that the stock is recovering. A modest increase in CPUE as well as the strong 1970 and other young age groups support this. Because of the very strong 1970-year class (a once in 8-year phenomenon), a golden opportunity exists to achieve rapid rebuilding of the stock. But control of fishery removals must be achieved if this opportunity is to be realized. An uncontrolled domestic target fishery may delay or possibly prevent rebuilding. However, with or without measures to limit the domestic fishery, the Groundfish Committee thinks it is essential to prevent removals by foreign fisheries. We estimate foreign fisheries for hake in the Columbia area may legally take up to about 1,500 metric tons of perch as a by-catch.

The Committee therefore believes that a year-round closure to trawling by foreign fishermen within an area extending southward from Cape Meares to Yaquina Head and seaward a distance of 30 to 50 nautical miles to 125°00' W. longitude should be imposed. This area encompasses the main perch grounds. Its closure would appropriately and effectively reduce the foreign by-catch of perch and would help allow continued rebuilding of the perch stocks. Such area closure can be simply achieved through requested modification of the draft Preliminary Fishery

Management Plan for foreign trawl fisheries off Washington, Oregon, and California. The Committee requests that the Pacific Marine Fisheries Commission support such modification of the Preliminary Fishery Management Plan to rebuild the perch stocks in the Columbia area. The suggested closed area encompasses the area enclosed by N. latitudes 45°30' and 44°40' and landward of 125°00' W. longitude. The maximum depths along the western boundary range from 500 to 800 fathoms.

Action: PMFC on November 19 sent copies of this Recommendation to the Northwest Region Director of NMFS in Seattle and to the Pacific Fishery Management Council with a request for immediate amendment of the Preliminary Management Plan. The Recommendation was also reprinted in PMFC Newsletter No. 26. PMFC Executive Director, John P. Harville, as a member of the Pacific Fishery Management Council, brought this matter up on November 22 at the Council's meeting in San Francisco. The Recommendation was referred to the Council's Scientific and Statistical Committee for review. The Committee on November 23 unanimously recommended that the Council should not support an amendment to the Preliminary Management Plan for trawl fisheries at that time. Instead the problems identified by PMFC should be considered in forthcoming development of a Council Management Plan for trawl fisheries off California, Oregon and Washington. Consideration should include the possibility of mesh restrictions and time and area constraints so as to minimize the adverse effects on Pacific ocean perch of trawling for other species throughout the area of Council jurisdiction.

Executive Committee Actions

The Committee at its first meeting, on June 15-16 in Juneau, took the following actions:

1. Recognized there were uncertainties regarding Regional Council jurisdiction and operations and that coastwide coordination would still be needed for those fisheries not under Council jurisdiction;
2. Agreed unanimously that PMFC should continue for at least one year or for such time as is necessary to carry out the goal and objectives of PMFC;
3. Increased the budget for the fiscal year ending June 30, 1977 to \$141,473 for a temporary workload increase for January through June 1977 to provide greater PMFC support to the new Regional Councils;
4. Approved a base budget of \$263,991 for the biennium July 1, 1977 to June 30, 1979; and
5. Ruled that henceforth PMFC would approve travel claims at coach fare rates only (except where coach space was unavailable).

The Executive Committee met a second time, on November 16 at Renton in conjunction with the annual PMFC meeting, and took the following actions:

1. Recommended confirmation of new Advisors Roger Thomas, Elizabeth Venrick and Bob Hudson;
2. Approved consolidation of PMFC's Groundfish Committee

with the Technical Subcommittee of the International Groundfish Committee;

3. Approved the following exception to PMFC's per diem of \$30 for lodging and subsistence:

"At the discretion of the Chief Administrative Officer, actual lodging costs may be claimed when attendance at meetings covering official PMFC activities is required. Claim should be documented by attaching a receipt showing the following information: employee's name; date of occupancy; single room rate. When actual lodging expenses are claimed, the meal allowance shall be \$ 1 5 for each 24-hour period, or actual costs not to exceed \$ 1 5 for periods of less than 24 hours."

(The purpose of this exception is "to cover special meetings wherein one cannot secure hotel lodging at a cost which would permit (one) to stay within the \$30 per diem allowance.")

4. Reviewed and reaffirmed approval of the biennial budget for 1977-79; and
5. Approved the following revision of

Research Policy and Procedure of PMFC

POLICY

- I. PMFC shall do research as needs and funds dictate; such research shall be undertaken only with approval of the Executive Committee.
- II. A Coordinator designated by the Director of each member agency shall constitute Pacific Marine Fisheries Commission's Coordinators Group; which Group shall have direction over Pacific Marine Fisheries Commission's Scientific and Management Staff composed of the "instiery staffs of the member States.
 - A. The Scientific and Management Staff may propose and recommend research projects. Those proposals and recommendations shall be referred to the Coordinators Group for its consideration and further recommendation to the Executive-Committee.
 1. Funds for research may be derived from the annual contributions of the member States as provided for in PMFC's biennial budgets, or they may be derived from some outside agency or group, such as the Federal Government or an industry.
 2. Regardless of the source of funds, all research must be budgeted and all research expenditures must be kept within the budgetary limitations.
 - B. The Scientific and Management Staff may recommend various modes for the performance of research:
 1. Cooperative research without PMFC funds — involved agencies agree to carry out a portion of a PMFC project without reimbursement from PMFC.

2. Cooperative research supplemented by PMFC funds — involved agencies agree to carry out a portion of a PMFC project, and PMFC agrees to reimburse them for boat charters, hiring of additional men, etc., or agrees to contribute matching money.
3. Contract research — PMFC to contract with non-member agencies, such as universities, or private research organizations who would do the research and be paid by PMFC.

PROCEDURE

- I. The Scientific and Management Staff may meet as considered necessary by the Executive Director and Coordinators Group.
 - A. Such meetings may involve the whole Staff or only a specific working committee or the Coordinators Group. (See Article XVI, Rules and Regulations of the Pacific Marine Fisheries Commission.)
 - B. At time of the Annual PMFC Meeting — The Coordinators Group and other Scientific and Management Staff members will convene to transact such business as may be appropriate.
 - C. During the Annual Meeting, the Coordinators Group and other Scientific and Management Staff shall be at the disposal of the Commissioners and Advisors for consultation. The Coordinators Group shall submit its comments or endorsements on all proposals for resolutions to the Advisory Committee. The Chairman of the Advisory Committee shall report verbally to the Commission the recommendations of the Coordinators Group together with the recommendations of the Advisory Committee.

^Revised July 30 and approved November 16, 1976.)

The Commission at its 1976 annual meeting approved the actions of the Executive Committee since the 1975 annual meeting.

Working Committee Actions

The PMFC Coordinator from each member state agency assigns scientists from his agency's staff to serve on one of the four working committees: albacore, groundfish, salmon-steelhead, and shellfish. The purpose of these committees and the Coordinators Group is to assist PMFC in the management, development and utilization of fisheries of concern to two or more States. In addition to the four working committees just named, ad hoc committees or groups involving non-state personnel as well as state personnel are organized when necessary to accomplish particular objectives, such as coastwide data collection and management of Dungeness crab fisheries. PMFC's Executive Director assists the committees and groups and provides liaison between scientists and the Commission.

Coordinators Group: Henry O. Wendler, Washington Department of Fisheries, as Chairman of this Group, convened the Coordinators and PMFC's Scientific and Management Staff on November 16 in conjunction with the annual meeting. The Coordinators reviewed the proposals that were before the Commission for adoption as resolutions and referred those that had scientific implications to the Scientific and Management Staff for development of staff recommendations. The Group forwarded recommendations on each proposal to the Advisory Committee and the Commission, and assigned members of the Staff to the Advisory Committee's Working Teams to assist them in their review and development of Advisory Committee recommendations for action by the Commission on each proposal. The Group and Staff also discussed scientific and management problems in general.

Albacore Committee: Chairman Mark G. Pedersen, Washington Department of Fisheries, verbally summarized the written "Review of the 1976 Pacific Coast Albacore Fishery" (see Appendix 2 for updated written report). He then reported on the highlights of the Committee's activities since November 1975.

1. The first "Population Dynamics Workshop for Northern Albacore," which was sponsored by NMFS at Honolulu, was attended in early December 1975.
2. The Committee met in April 1976 at Arcata, CA to plan the completion report for the 3-year Sea Grant coastwide albacore study mentioned in the review report (see p. 45), and to discuss with representative of NMFS' Southwest Fisheries Center a grant proposal for continuation of the coastwide logbook and port sampling program. NMFS approved the proposal.
3. A teamwork approach to sampling salmon and albacore landings was developed. Albacore samplers assist salmon samplers during times of peak salmon landings and vice versa during peak albacore landings. The albacore samplers during slack times also gather data on unmonitored fisheries for other Species. Systematic sampling of sport-caught albacore occurs in many ports.

Groundfish Committee: Tom Jow, California Department of Fish and Game, verbally summarized the written "Review of the 1976 Pacific Coast Groundfish Fishery" (see Appendix 2) and reported on the Committee's activities as follows:

1. The groundfish staffs of PMFC's member States exchanged data via PMFC to satisfy interstate, national and international needs.
2. The state agencies were major participants in the observer program on USSR and Polish trawl vessels off the Pacific Coast.
3. California and Oregon with the assistance of NORFISH (University of Washington) made progress in making their 1976 and subsequent data conform with data from existing systems for British Columbia and the State of Washington.
4. PMFC continues to partially support a fishery technician in the cooperative age-determination unit. This technician since

1973 has been stationed at the Washington Department of Fisheries laboratory at the University of Washington in Seattle. Age composition work that is vital for interstate and national needs is being accomplished.

5. The Groundfish Committee drafted a recommendation for modification of the draft Preliminary Fishery Management Plan for foreign trawl fisheries off Washington, Oregon and California. The modification would prohibit foreign trawling for Pacific ocean perch in an area off the central Oregon coast. (See page 31 for the recommendation that PMFC adopted.)
6. PMFC's Executive Committee on November 16, 1976 approved merger of PMFC's Groundfish Committee into the U.S. Section of the Technical Subcommittee of the International Groundfish Committee.

Salmon-Steelhead Committee: Lloyd A. Phinney, Washington Department of Fisheries verbally summarized the written "Review of the 1975 Salmon and Steelhead Sport Catches in the Pacific Coast States" and the "Review of the 1976 Pacific Coast Troll Salmon Fishery" (see Appendix 2). He also gave the following report on the Committee's actions during 1976.

The Committee has been busy in response to a November 10-11, 1975 directive from the PMFC Coordinating Council to reexamine management needs and problems with respect to coho and chinook salmon ocean fisheries management and to make recommendations to the Council which would be consistent with the general guidelines for the State Federal Fisheries Management Program (SFFMP) and which could serve as a starting point for management planning within those guidelines. (The PMFC Coordinating Council is composed of PMFC's Executive Committee plus the Pacific Coast Regional Directors of NMFS. In June 1976, to avoid confusion with the Regional Fishery Management Councils, established by PL. 94-265, the Coordinating Councils name was changed to Pacific Fisheries Directors — Editor).

In late March 1976 at Ocean Shores, WA., the Salmon-Steelhead Committee drafted an outline for a proposal for a SFFMP project to develop a fully operational management system under extended jurisdiction for the ocean troll fisheries off Oregon, Washington and California: The Committee established an ad-hoc group composed of one fishery scientist from each state agency to write the actual proposal. On April 29 a "Proposal for Development of a Fully Operational Management System under Extended Jurisdiction for the Commercial Troll Salmon Fisheries off California, Oregon, and Washington" was presented to the PMFC Coordinating Council, which approved the proposal for submission to the NMFS for a contract to be funded under the SFFMP.

A "Management Plan Development Team" consisting of one scientist from each of the PMFC member States plus a NMFS representative was assigned the responsibility of seeing that the management system is developed. Subsequently the NMFS approved a SFFMP contract with PMFC (acting for its member States and the PMFC Coordinating Council — Editor) for development of an operational management system for troll salmon fisheries off California, Oregon and Washington, and with some consideration to the offshore Alaskan fishery for chinook salmon.

Phinney discussed simultaneous expansion of the Washington Department of Fisheries — National Bureau of Standards "Catch/Regulation Analysis Model" and the California Department of Fish and Game "Fisheries Population Simulation Model." These expanded models would be able to evaluate adjustments in seasons, size limits, fishing areas, fishing effort, etc., and would be able to synthesize recreational and commercial fishery economic data as well as biologic data. To provide data for these models a coastwide data system will be established (with existing data and state systems serving as a nucleus — Editor).

The Pacific Fishery Management Council, at its first regional meeting in Seattle on October 12-15 assigned an ad hoc team under the chairmanship of Sam Wright (Washington Department of Fisheries) to develop a salmon fishery management plan. The Council's Scientific and Statistical Committee and the ad hoc team will guide the Management Plan Development Team toward the goal of submitting a plan to Council at its December 1976 meeting.

Other PMFC Salmon-Steelhead Committee activities included participation in the Committee on Anadromous Fish Marking and Tagging. Both the Washington Department of Fisheries and the Oregon Department of Fish and Wildlife have submitted proposals regarding future operations of the Regional Mark Processing Center, presently located at Clackamas, OR., including acceleration of processing and distribution, and increased utility of the data. A (mark) coordinator will be hired with funds from the Pacific Northwest Regional Commission.

Shellfish Committee: Jack G. Robinson, Oregon Department of Fish and Wildlife, verbally summarized the written "Review of the 1975-76 Pacific Coast Dungeness Crab Fishery" (see Appendix 2) and then reported on the progress of the SFFMP project for Dungeness crab from November 1975 to November 1976 as follows.

The project is in the early part of its fourth year and is nearing completion. Steps are being taken to ensure that reports and data are in proper condition to assist in future decision making. The Study Team in mid-year lost its biologist and its two economists. The Team was replaced by an ad hoc Management Team which is working in concert with the projects' Scientific Committee. The Study Team wrote a Phase II completion report entitled "Effort Management in the Dungeness Crab Fishery," which was printed in final form in June.

Determination is continuing on: whether the Dungeness crab fishery is overcapitalized; and, if so, what are the net benefits from selected schemes to manage effort? The Study Team concluded tentatively (on the average over a long term) maximum economic benefits would be realized if the total annual effort for the States of California, Oregon and Washington were 60,000 pots. The Team estimated that without effort control: the average total effort for the 3-state fishery is increasing to over 123,000 pots; that this intense effort yields one-fourth less than the optimum 60,000 pot level would; and that the potential gain in net benefits due to effort management would be the difference between maximum benefits in a regulated fishery and those in

an unregulated fishery, or in the magnitude of \$6,880,000 annually. The projects Scientific Committee agreed with the Study Team that there is significant excess effort in the Dungeness crab fishery but that the estimate of the excess could be subject to considerable error. However, even if the estimate is off by a factor of two, there would be significant benefits from effort management. Therefore, a detailed analyses of alternative management plans should be undertaken.

The Study Team developed three alternative plans for limiting effort: license limitation; tax and use fee; and fisherman catch quota. The Scientific Committee and Study Team agreed that license limitation with tax, and quota system with tax were two management options warranting further analysis, and that any scheme adopted must render some benefits to the fishermen and the public. Although the Dungeness Crab Subcouncil at its April 22 meeting concluded that justification for instituting limited entry in the Dungeness crab fishery in the near future was presently inadequate, it directed the Study Team and Scientific Committee to analyze the comparative administrative and enforcement costs of the two effort management alternatives. Robert J. Williams, PMFC staff member, and Dr. Jack A. Richards, NMFS Northwest Regional Economist, are guiding the analysis.

A Dungeness crab study under the SFFMP demonstrated that the destruction of crabs in lost or sanded-in pots could be significantly reduced, if a mechanism were developed that would allow crabs to escape after a given period of captivity. The Scientific Committee and Study Team established criteria for such a mechanism, and Humboldt State College with its Sea Grant funds is attempting to develop a mechanism with those criteria.

The ad hoc Management Team; composed of Mel Odemar (California), Jack Robinson (Oregon), Ron Westley (Washington) and Jack Richards (NMFS); is inventorying and evaluating the management information available and identifying other data needed for development of a comprehensive Dungeness crab management plan for use of the Pacific Fishery Management Council.

Jerry McCrary, Alaska Department of Fish and Game, verbally summarized the written "Review of the 1976 Pacific Coast Shrimp Fishery" (see Appendix 2) and was followed by Ronald E. Westley, Washington Department of Fisheries, who verbally reported on activities of the Shrimp Subcommittee of PMFC's Shellfish Committee. The Subcommittee is working on the following:

1. Determination of the proper mesh size to minimize retention of juvenile shrimp; (the NMFS is cooperating in this. During the past summer it conducted a successful test-fishing cruise. However, it appears that net configuration as well as mesh needs to be tested).
2. Establishment of a minimum size for pink shrimp; (First efforts to determine minimum size that can be effectively machine peeled were unsuccessful. A different approach seems necessary.)
3. Investigation of the shrimp fishery — its current level, life-his-

tory review, and possibility of compatible seasons among California, Oregon and Washington;

4. Investigation of procedures for collecting management statistics; (Current statistics are fairly good but improved definition of fishing effort is needed.)
5. Information needs for development of management plan if necessary, for the Pacific Fishery Management Council. (It appears that, with the exception of stock assessment, most of the needed information is available.)

Coastwide Data System (CWDS) and Task Force: Dr. Charles E. Woelke, Washington Department of Fisheries, reported on the status of the CWDS and the activities of its Task Force since the PMFC Coordinating Council on November 10-11, 1975 instructed the Task Force *to establish* coastwide data compatibility as defined by the Base Level 2 Plan, and *to reconstitute* the membership of the Task Force, and *to act* as a planning and implementing agent for the Council. The following is a summary of his report.

The reorganized Task Force selected Woelke as its Chairman and identified major problems or needs. It established subcommittees, appointed chairmen, and set dates for action on problems or tasks assigned to each subcommittee. Representatives of the Task Force reported to the PMFC Coordinating Council in April and again in June. Each time the Council (now renamed the Pacific Fisheries Directors) approved the reports and instructed the Task Force further. The entire Task Force met concurrent with this PMFC annual meeting and drafted the following summary and recommendations.

1. Those States that currently have laws restricting the exchange of vessel and landing data should pursue remedial legislation to permit availability of such data for a coastwide data system. The state directors have agreed to push for the legislation.
2. The States should proceed in the most effective manner possible to produce data files in the compatible format developed for vessels; commercial landings; and recreational and ceremonial or subsistence catches at the earliest possible date.
3. A strong Coastwide Data Task Force with appropriate staff support should be continued for the following purposes:

To implement the Base Level 2 Plan — by arranging trial data runs in the immediate future — by coordinating solution of problems made obvious by the trial runs — by putting on tapes or discs in Base Level 2 format those 1973, 1974, 1975 data that are available plus data for subsequent years — by adequately documenting (defining) the elements of the data files — and by providing a forum for discussion of data system problems; and

To make recommendations and/or judgments when necessary with respect to utilization of coastwide data files commensurate with the needs of present and potential users of the files.

Special Committee Responsibilities and Service Activities

PMFC's secretariat and members of its working committees are frequently required to serve on additional committees and task groups. PMFC's Executive Director, Dr. John P. Harville, serves as the U.S. member; and Mr. K. R. Pitre, Environment Canada, Fisheries and Marine Service, serves as the Canadian member of the International Groundfish Committee, which was established by the Second Conference on Coordination of Fisheries Regulations Between Canada and the United States in 1959.

The International Groundfish Committee is assisted by a Technical Subcommittee which monitors the Pacific Coast groundfisheries and advises the parent committee regarding trends and status of those fisheries. The U.S. Section of the Technical Subcommittee is composed of state agency members plus representatives from the Northwest Fisheries Center of NMFS. The Canadian Section of the Subcommittee is composed of representatives from the Pacific Region Office and Pacific Biological Station of Environment Canada, Fisheries and Marine Service. The Technical Subcommittee held its 17th annual meeting at Newport, OR, on June 23-25, 1976, and held an interim meeting on November 15-16, 1976 at Renton, WA, in preparation for attending the 18th annual meeting of the International Groundfish Committee on November 16, also at Renton. G. S. DiDonato, Washington Department of Fisheries, was Chairman of the Technical Subcommittee and John P. Harville, Pacific Marine Fisheries Commission, was Chairman of the International Groundfish Committee in 1976.

PMFC's Executive Director serves as an advisor at United States-Canada salmon negotiations. He also serves along with NMFS Northwest Regional Director Donald R. Johnson on the U.S. Section of the Informal Committee on Chinook and Coho. Their Canadian counterparts are Pacific Biological Station Director Dr. W. E. Johnson and Pacific Region Director W. R. Hourston, both of Environment Canada, Fisheries and Marine Service. This Committee is assisted by a Technical Working Group, composed of Dr. Kenneth A. Henry, NMFS, and Harold Godfrey, Fisheries and Marine Service, as American and Canadian Group members, respectively. They are assisted by other American and Canadian scientists, including those on PMFC's Salmon-Steelhead Committee. The Technical Working Group held its 14th meeting on February 10-11, 1976 in Vancouver, B.C., under the chairmanship of Harold Godfrey.

Treasurer's and Executive Director's Reports

Treasurer Gerald L. Fisher verbally summarized his written report. All claims presented for payment through October 31, 1976 were paid. The cash balance was \$171,408.01 and accounts receivable totalled \$48,576.53 as of October 31. The annual audit for the year ended June 30, 1976 found PMFC's

financial records in satisfactory condition. See Appendix 1 — Financial and Audit Reports for details.

Executive Director John P. Harville reported verbally on three major areas of PMFC activity during 1976.

1. *Implementation of PMFC Official Positions per Resolutions and Executive Committee Directives:* A review of actions on 1975's resolutions was updated in October's Newsletter No. 25. In general, issues addressed by resolution last year have fared quite well. For example, the President recently signed into law a bill authorizing some \$58 million for lower Snake River salmonid propagation programs in compensation for effects of dam construction. (See PMFC 1975 Resolution 9.) It remains to be seen if we can be equally successful in securing the necessary appropriations to implement that authorization. We will work hard on it.

By far, the major PMFC effort this year has been devoted to actions relating to H.R. 200 and S. 961, the bills which led to the Fishery Conservation and Management Act of 1976 and establishment of the Regional Fishery Management Councils. These actions were in behalf of PMFC's 1975 Resolution 1 and subsequent advice from PMFC's Executive Committee. At the requests of the staffs of the House and Senate Committees drafting those bills, I developed for PMFC a detailed analysis of sections relating to council operations, management plan development, and the role of the States. Specifically, these recommendations stressed the important initiatives which must rest with the Councils, thus meeting PMFC's emphasis upon maintaining management responsibility at regional and local levels. Also, these recommendations opposed early draft positions which would have given the Federal Government stronger preemptive authority over the States. The final bill, as signed into law by the President, appears acceptable in terms of PMFC's 1975 Resolution.

In continued support of the principles established by PMFC, we have reviewed the drafts of the manual developed by NMFS to guide council organization and operation. We have pressed for non-federal status for Councils and their staffs, for much augmented funding for council operations, and for reasonable federal sharing of the costs of the added burden thrust upon the States to implement this federal legislation. It now appears that council operations will be in accordance with these positions — for which we have had strong concurrence throughout the country.

2. *Support of On-Going PMFC Functions — PMFC Committees, Etc:* You have received brief reports from PMFC's working committees concerning the status of fisheries with which they are concerned, and their committee projects and activities in 1976. Support of these programs continues to be a major commitment of PMFC's secretariat. The Groundfish Committee's report mentioned on-going responsibilities at the international level. PMFC also participates in international salmon problems.

It may be useful, as an overview, to indicate the approximate level of activity which has been maintained during what has been by far the busiest year of PMFC's history. In 1976,

PMFC was supported by contributions totalling \$85,000 from its 5 member States. During that same period, PMFC received for projects on behalf of its member States over \$409,000 from external grants and contracts. More than three-fourths (\$336,600) of that total was federal contract funding for conduct of the Eastland Fisheries Survey and for two large State-Federal Fisheries Management Program projects for Dungeness crab and Pacific salmon. Major components of those contracts went directly to the States to fund their participation in those coastwide programs. Let me emphasize that PMFC is not a separate research entity; rather it is a convenient vehicle for organizing and coordinating coastwide studies in conformance with the goal and objectives established, and for seeking and managing the funds necessary to carry out those programs.

Therefore, PMFC maintains a very small permanent secretariat to carry out the coordinative and management functions outlined. This includes only two permanent full-time positions, for the Executive Director and a secretary; plus funds for part-time additional assistance from our Treasurer, Jerry Fisher; our Editor and Special Assistant, Leon Verhoeven; and some additional secretarial services. From external contract funds, we have augmented our secretarial services so that we have secretarial support from two full-time and highly competent staff members — Beverly Shinn and Kathy Scorgie. Also, for the duration of the contracts providing their support, we have the very able assistance of Bob Williams for the Coastwide Data System and Larry Six for the Eastland Fisheries Survey.

3. *New Regional and National Initiatives and Special Assignments:* Many of these have developed directly from the on-going activities of our working committees, such as the Salmon Management Program and the Coastwide Data System which you have already heard about. We also are devoting a major effort to PMFC's response to the Eastland Fisheries Survey — to the Congressional mandate to gather grass-root input to a national fishery policy from which the Congress can develop a legislative package. Details on this subject were presented during yesterday's symposium, so I will not repeat them.

Let me close by indicating two new assignments of 1976 which demand increasing commitments of effort, but also represent important opportunities for service to PMFC's goal and objectives. First, during 1976, NOAA Administrator Robert White designated the Executive Officers of the three interstate marine fisheries commissions official consultants to MAFAC, the Marine Fisheries Advisory Committee to NOAA and the Department of Commerce. The participation thus officially sanctioned has been valuable with respect to actions to implement the National Plan for Marine Fisheries, to carry forward the Eastland Fisheries Survey, and to influence constructively the guidelines for operation of the Regional Fisheries Management Councils established by the Fishery Conservation and Management Act of 1976. Second, as you all

know, PMFC's Executive Director is a statutory member (non-voting) of both the Pacific and North Pacific Fishery Management Councils. From the looks of the agendas and schedule of meetings ahead for those two Councils, this will be a demanding but highly important assignment. This completes my overview report.

Election of Officers

The following were elected officers for 1977:

Chairman — John R. Donaldson, Oregon Department of Fish and Wildlife

1st Vice Chairman — Joseph C. Greenley, Idaho Department of Fish and Game

2nd Vice Chairman — James W. Brooks, Alaska Department of Fish and Game

3rd Vice Chairman — E. C. Fullerton, California Department of Fish and Game

Secretary — Donald W. Moos, Washington Department of Fisheries (Don Moos resigned in January 1977; Frank Haw is his acting successor. — Editor)

Chairmen and Steering Group of Advisory Committee:

Overall Chairman — Don Christenson, Oregon Deputy

Chairman — Ted Bugas, Oregon Section Chairman

— E. G. Thompson, Idaho Section Chairman — Andy

Mathisen, Alaska Section Chairman — Oliver A.

Schulz, California Section Chairman — Earl E.

Engman, Washington

1977 Annual Meeting

*

PMFC's 1977 annual meeting will be held at the Hilton Hotel, Portland, OR, November 8 through 10.

Headquarters Address Change

PMFC will move to the new headquarters of the Oregon Department of Fish and Wildlife on Fifth Avenue S.W., just two blocks south-of the State Office Building effective May 31, 1977. PMFC's new address will be 528 S.W. Mill Street, Portland, OR 97201. Other tenants in the ODFW headquarters building are the Pacific Fishery Management Council, and the Columbia River Fisheries Council whose Executive Secretary is Dr. L. E. Perry.

ADMINISTRATION AND OTHER ACTIONS IN 1976

Actions on 1975s resolutions were summarized through June 1976 in the *28th Annual Report of the Pacific Marine Fisheries Commission for the Year 1975*. That summarization was updated in October 1976 by PMFC Newsletter No. 25 and again on November 18 when Executive Director Harville verbally presented his report at PMFC's annual meeting.

Resolution 1, Management Authority under Extended Juris-

diction: Actions related to this Resolution are mentioned on pages 3 and 8 of this report. A summary of the symposium "Regional Fishery Management Councils — A New Regime for Conservation and Management of Marine Fisheries" is on pages 9-15. Also see 1976 Resolution 14 on page 30.

Resolution 7, Improve Marine Weather Forecasting Capability. See page 28 for 1976 Resolution 11 on this subject.

Resolution 9, Authorize and Fund Lower Snake River Compensation Plan: President Ford on October 22 signed a public works bill that includes authorization of \$58 million for the Lower Snake River Compensation Plan. Construction of eight hatcheries is included, four of which will be in Idaho on the Snake, Salmon and Clearwater drainages. Because of an Idaho Power Company mitigation plan for its Hells Canyon, Oxbow and Brownlee dams now before the Federal Power Commission for approval, none of the juvenile fish from those hatcheries will be released into the Snake River upstream from the Salmon River. Two each of the other four hatcheries will be built in Oregon and Washington.

A 1976 report, "Columbia Basin Salmon and Steelhead Analysis" by Ed Chaney and L. Edward Perry of the Pacific Northwest Regional Commission, says the hatcheries to be constructed under the lower Snake River plan will produce 9.16 million fall chinook, 6.75 million spring and summer chinook and 11.2 million summer steelhead at a capital cost of over \$38 million. This juvenile production would contribute an estimated 4.26 million pounds of chinook and summer steelhead to commercial fisheries and would provide 750,500 sport angler days for a combined minimum annual value of over \$10.8 million. These capital costs and annual production values are based on 1974 dollars.

The Lower Snake River Compensation Plan also provides for purchase of access to stream banks for anglers and to waterfowl and gamebird areas for hunters, and for creation of habitat to attract wildlife, birds and waterfowl back to the Snake River. Dr. Harville in his report stressed that it was PMFC's goal in 1977 to secure the necessary appropriations to implement the Plan, now that it has been authorized.

Resolution 10, Support of Coastal States Organization Environmental Assessment Principles: As mentioned in PMFC Newsletter No. 25, "Coastal Zone Management Act Amendments of 1976" became P.L. 94-370 when the President signed the legislation on July 26. According to *Louisiana Coastal Law*, Report No. 24, September, 1976, the amendments provide financial assistance to state and local governments to meet needs arising from increased Outer Continental Shelf (OCS) energy activity. Prior to their passage, states found themselves burdened with the costs of public services necessitated by OCS activity but did not share in the revenue which OCS activity generated. While the revenue is still not truly shared, the amendments recognize the true costs of energy development and attempt to give coastal states and localities the means to cope with the net adverse impacts." The American Institute of Fishery Research Biologists "*Briefs*" (vol. 5, no. 3), September 1976 also contain a discussion of the amendments.

Resolution 11, Amend the Marine Mammal Protection Act: The 94th Congress before its adjournment on October 1, 1976 did not take definitive action on amendment of the Act. Consequently, PMFC repeated its concern about the Act by adopting Resolution 10, Amend the Marine Mammal Protection Act of 1972; see page 27 for the text of that Resolution and the action taken on it.

Resolution 12, Bumping Lake Enlargement, Yakima Project, Washington: John R. Woodworth, Environmental Specialist, U.S. Bureau of Reclamation, Boise, ID, at PMFC's 1976 annual meeting supplied the following information on the status of this project—

The joint report by the U.S. Fish and Wildlife Service and the Bureau of Reclamation on the "Bumping Lake Enlargement," and the environmental impact statement (EIS) probably will be released in January for the required 90-day review by interested state and federal agencies. Hearings on the EIS probably will be held in the spring; and the report could come before Congressional Committees in the summer of 1977 for authorization. The anadromous fish function of this \$100 million project will be non-reimbursable, and will produce 8.5 million salmon and steelhead smolts annually.

Conferences and Meetings

The Executive Director or other members of the staff or both as representatives of PMFC attended many conferences and meetings in 1976 in implementation and support of Commission policies and objectives. The most significant of these conferences and meetings are listed below according to area of concern.

International Affairs

U.S. — Canada Negotiations, U.S. Section only: Seattle, January 15, June 29, and October 20;

Technical Subcommittee of International Groundfish Committee: annual meeting, Newport, OR, June 23-24; and Renton, WA, November 15-16;

International Groundfish Committee annual meeting, Renton, WA, November 16;

Western Association for the Valuation of Ecosystems, symposium of resource valuation techniques, Lake Arrowhead, CA, September 15-17;

National Affairs

Marine Fisheries Advisory Committee, NOAA, U.S. Department of Commerce, meetings: MAFAC XIII, New Orleans, LA, February 24-26; MAFAC XIV, Washington D.C., May 24-26; Subcommittee on Planning for Extended Jurisdiction, Washington D.C., July 26-28; MAFAC XV, Seattle, WA, October 20-22;

First Annual Marine Recreational Fisheries Symposium, New Orleans, February 27; sponsored by International Game Fish Association, the National Coalition for

Marine Conservation, NMFS, NOAA, and Sport Fishing Institute (PMFC's Executive Director was Chairman of panel on Management Criteria for Marine Recreational Fisheries);

Third annual joint meeting of directors of state fish and wildlife agencies and interstate marine fisheries commissions with personnel of NOAA and NMFS in Washington, DC, March 2-3, 1976;

National Advisory Committee on Oceans and Atmosphere, Seattle, WA, April 1;

National Conference for Regional Fishery Management Councils, convened by NOAA and NMFS, Arlington, VA, September 13-17;

National Conference for the Eastland Fisheries Survey, Arlington, VA, November 29 - December 2;

Fourth National Fisheries Policy Conference, Washington, D.C., December 2-3;

Regional Affairs Relative to State-Federal Fisheries Management Program (SFFMP)

PMFC Coordinating Council (renamed Pacific Fisheries Directors effective June 16) meetings: Sacramento, April 23; and Juneau, June 15;

Dungeness Crab Subcouncil meeting, Sacramento, April 22-23;

Dungeness crab ad hoc working teams: Portland, January 19-20 and April 1-2; Sacramento, July 12-13; Portland, August 12 and September 7-8; Sacramento, September 13-14;

Salmon-Steelhead Committee and Management Plan Development Team meetings: Portland, March 10; Ocean Shores, WA, March 23-24; Portland, April 19-22; Renton, WA, July 19; Olympia, September 28-29;

Other Regional and Local Affairs

Coastwide Data System: Coastwide Data System Task Force, San Francisco, January 6-7; Portland, March 17-18 and June 2-3; and Renton, WA, November 15-16; Coastwide Data System inventory with California Department of Fish and Game and NMFS Southwest Fisheries Center, San Francisco, April 28; Coastwide Data System Subgroup on Data Compatibility, Portland, October 13-14;

Eastland Fisheries Survey: planning meeting, Portland, February 5-6; planning meeting, Honolulu, February 18 (also attended meetings of Pacific Tuna Development Foundation and Pacific Island Development Commission, February 17); Meeting of Inland Commercial Fisheries Association, Lincoln, NE, February 18-20 (explained Eastland Fisheries Survey and invited Association's participation); meeting with Oregon State University consumer and nutrition personnel, Corvallis,

February 24; San Pedro — Long Beach, CA, March 8-9; Monterey, CA, March 15-16; Astoria, OR, March 22-23; Bellingham, WA, March 29-30; Eureka, CA, April 5-6; Kodiak, AK, April 14-15; Honolulu, HI, April 26-27; Eugene, OR, July 20; Portland, OR, July 22; San Diego, CA, August 2; San Rafael, CA, August 4; Seattle, WA, August 26; Juneau, AK, September 28-29; Anchorage, AK, September 30; Portland (salmon work-shop), October 25-27 and (trawl fishery work-shop) November 3-5;

Eastland Fisheries Survey in the Territories of American Samoa and Guam and the Trust Territory of the Pacific Islands, meeting and interviews in American Samoa, Guam, and Micronesia (Marianas District, Mariana Islands; Truk, Palau, Yap, and Ponape Districts in Caroline Islands; and Majuro District, Marshall Islands) April 28 - June 5;

Cooperative Northwest Workshop on Status of Rockfish Stocks, Seattle, Attended January 20 only;

NMFS Ad Hoc Committee on Surveillance (of foreign fishing), Seattle, March 11;

Pacific Fishery Biologists Annual Meeting, Ocean Shores, WA, March 24-26;

State of Oregon, Legislative Interim Committee on Natural Resources, Subcommittee on Columbia River Fisheries' hearings on limited entry: Astoria, March 31; and Tillamook, September 10;

Oregon State University Sea Grant Site Review, Corvallis, April 6;

North Pacific Fishery Management Council: Juneau, October 5-8; Anchorage, December 2-4, and joint meeting with Alaska Fish and Game Board on December 5;

Pacific Fishery Management Council: Seattle, October 12-15; San Francisco, November 21-23; Portland, December 14-K}.

Publications in 1976

The 28th Annual Report for the Year 1975 was published in June. Newsletters Nos. 24, 25 and 26 were issued on April, October and November, respectively. A 56-page "1976 Mark List" was distributed in May. This list contained a record of all groups of salmon and some groups of steelhead, the later being primarily only those from the Columbia River system, that had been marked by excision of one or more fins before they were released to migrate to the ocean and which are still at large plus those groups of juveniles scheduled for marking and releasing in 1976. Allocation of the fin marks for use in 1976 was accomplished at the annual meeting of the Committee for Coordination of Anadromous Fish Marking (now consolidated with a Coded Wire Tag Coordinators group and renamed the Committee on Anadromous Fish Marking and Tagging) which was convened by PMFC in Portland on February 11. Revised

and supplementary pages containing 1975 catch statistics for the Dungeness Crab and Shrimp Section and for the Groundfish Section of PMFC's Data Series were distributed in August and October, respectively, to persons and organizations possessing copies of those Sections.

Personnel

The following served as Commissioners in 1976:

Alaska

James W. Brooks, Juneau, Third Vice-Chairman
Richard I. Eliason, Sitka
Charles A. Powell, Kodiak

California

Harold F. Cary, San Diego
E. Charles Fullerton, Sacramento, Secretary
Vincent Thomas, San Pedro

Idaho

H. Jack Alvord, Pocatello
Wynne Blake, Lewiston
Joseph C. Greenley, Boise, Second Vice-Chairman

Oregon

John R. Donaldson, Portland, First Vice-Chairman (successor to John W. McKean effective August 1)
Allan Kelly, Portland
Walter H. Lofgren, Portland (successor to Thomas E. Kruse effective August 20)

Washington

Harold E. Lokken, Seattle
John Martinis, Everett
Donald W. Moos, Olympia, Chairman

The Advisory Committee functioned under the "ADVISORY COMMITTEE RULES AND PROCEDURES" as amended November 1973 and 1975. Its members in keeping with Article X of PMFC's Rules and Regulations had been reappointed for 2-year terms beginning January 1, 1975 or had been appointed subsequently for the unexpired remainders of 2-year terms as vacancies occurred. The Advisors during 1976 were:

Alaska

James Burris, Sitka
Jack B. Cotant, Ketchikan
Knut Johnson, Cordova
Bruce Lewis, Juneau
Andy Mathisen, Petersburg, Section Chairman
Charles H. Meacham, Juneau
Jack Phillips, Pelican

California

Earl Carpenter, Bodega Bay, Section Chairman
John P. Gilchrist, Sacramento
Paul McKeehan, Santa Clara (deceased)
John P. Mulligan, Terminal Island
Anthony V. Nizetich, Terminal Island
Oliver A. Schulz, San Francisco

Roger Thomas, Burlingame (successor to Paul McKeehan) Elizabeth Venrick, La Jolla (successor to Berger Benson)

Idaho

W. H. (Will) Godfrey, Boise
John H. (Jack) Hemingway, Sun Valley, Section Chairman E. G. (Pete) Thompson, Sand Point

Oregon

Theodore T. Bugas, Astoria
Don Christenson, Newport
Charles S. Collins, Roseburg
Bob Hudson, Charleston (successor to J. O. Brown)
Ross F. Lindstrom, Astoria Arthur Paquet, Astoria, Section Chairman Phillip W. Schneider, Portland

Washington*

Les Clark, Chinook

Jim Dart, Jr., Grayland
Earl E. Engman, Tacoma, Overall Chairman
Michael E. Luft, Port Angeles
Jesse M. Orme, Seattle
John N. Plancich, Anacortes
William G. Saletic, Seattle, Deputy Chairman

The permanent staff comprised:

John P. Harville, Executive Director
Gerald L. Fisher, Treasurer
Kathleen J. Scorgie, Administrative Assistant
Beverly A. Shinn, Office Secretary
Lawrence D. Six, Staff Assistant
Robert J. Williams, Project Investigator

They were assisted part-time by Leon A. Verhoeven, Consultant and Editor, and Warren J. Shaul, Temporary Staff Assistant for Eastland Fisheries Survey. Temporary clerical employees were utilized as needed.

*The Advisors from the host State elect an overall Chairman and a Deputy Chairman for the Advisory Committee.

Appendix 1 — Financial and Audit Reports

Financial Support, 1976

The Commission receives its financial support from legislative appropriations made in accordance with Article X of the interstate Compact 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 per cent (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 DISBURSEMENTS October 1, 1975 to November 1, 1976

CASH BALANCE, Sept. 30, 1975
(November 1975 Treasurer's Report) \$104,844.31

RECEIPTS:

Contributions by Member States:
Alaska FY 1977 \$22,100.00
California FY 1977 21,600.00
Idaho FY 1977 4,300.00
Oregon FY 1977 18,200.00
Washington FY 1977 18,800.00 \$ 85,000.00

Refunds

National Marine Fisheries
Service 336,634.89
Oregon Dept. Fish &
Wildlife 11,000.00
Washington Dept. Fisheries 60,452.81
Miscellaneous 1,713.59 409,801.29
Interest on Saving Certificates 5,266.01

DISBURSEMENTS:

Annual Meeting, November 1975, San Diego:
Commissioners 3,888.26
Advisory Committee 7,867.49
Admin. & Scientific Staffs 7,054.25
Tape Recording & Room Rental 681.34 \$19,491.34

Scientific & Management

Meetings 1,794.31
Salaries & Wages 52,399.23
Retirement & Social Security 6,060.63
Prepaid Retirement Premiums 735.37
Medical Insurance 519.65
Travel Expenses, unclassified 1,604.71
Office Supplies & Maintenance 5,180.65
Telephone & Telegraph 3,899.12
Postage, Freight, Express 3,741.28
Rent, headquarters space 4,768.30
Printing & Publications 2,142.70
Bond & Accident Insurance
Premiums 1,381.19
Library Supplies 139.60
Capital Outlay 1,709.70
Independent Audit 900.00
Professional Services 53.11

Cooperative Research:		
Coho Season Evaluation	673.53	
Otolith Reader Project	3,012.01	3,685.54
Reimbursable Expenditures:		
Eastland Resolution	60,757.51	
State — Federal Relations		
Contracts	15,413.57	
Sea Grant Albacore Contract	28,980.27	
Federal Share of Otolith Reader	8,664.54	
Federal & Oregon Shares of		
Coho Season Evaluation	25,728.86	
NMFS Dungeness Crab Contracts	102,888.24	
NMFS Coastwide Data System	10,978.58	
NMFS Troll Salmon Management	6,897.09	
NMFS Albacore Logbook & Port		
Sampling	5,180.03	
Washington Coast & Puget Sound		
Sampling	56,931.41	\$322,420.10
Other		877.07
Total Disbursements		433,503.60
CASH BALANCE, October 31,		
1976		171,408.01
		<u>\$604,911.61</u>
		<u>\$604,911.61</u>

Biennial Budget, 1977-79

The Executive Committee at its meeting on November 16, 1976 approved the 1977-79 biennial budget. The Commission in sustaining the Executive Committee's actions during 1976 in effect approved the following biennial budget.

PACIFIC MARINE FISHERIES COMMISSION Revised Biennial Budget, July 1, 1977 to June 30, 1979

ALASKA, CALIFORNIA, IDAHO, OREGON & WASHINGTON

Salaries and Wages	\$116,452
Fringe Benefits:	
Social Security	4,700
Retirement Annuity	8,500
Medical and Hospital Insurance	2,500
Indust'l Accident Insurance	500
Unemployment Compensation	3,500
General Operations and Maintenance:	
Office Supplies	10,800
Telephone & Telegraph	8,300
Postage, Freight & Express	9,000
Rent, Office	9,700
Treasurer's Bond	700
Audit Fees	2,200
Private Car Mileage	800
Fares, Plane, R.R., Bus, Other	5,300
Meals and Lodging	2,600
Library Supplies	400
Miscellaneous	300
Annual Commission & Ancillary Meetings:	
Advisory Committee, Travel, etc.	16,903
Commissioners, Travel, etc.	8,088
Scientific & Management, Travel, etc.	12,924
Administrative Staff, Travel expense	2,274
Meeting Rooms, Steno, Sound & Record	900
In-State Pre-meeting Caucuses	2,250

Spring and Special Meetings:	
Executive Committee, Travel, etc.	1,700
Special Scientific & Management, Travel, etc.	9,000
Publications:	
Annual Reports Nos. 30 and 31	5,700
Bulletins	2,000
Data Series	900
Cooperative Research & Management	13,600
Capital Outlay:	
Office Furniture & Equipment	1,500
Total Estimate	<u>\$263,991</u>
Source of Financing:	
Savings from Previous Biennium	30,063
Interest Income	5,000
External Contract Income	16,928
State Contributions	212,000
Total Available	<u>\$263,991</u>

**PROPORTIONATE CONTRIBUTIONS
BASED ON TOTAL BIENNIAL CONTRIBUTIONS OF \$212,000**

Member	5-Year Average*	% of Contribution	Biennial Contribution
Alaska	\$114,818,524	26	\$54,800
California	100,053,382	25	53,200
Washington	52,632,824	23	48,200
Oregon	26,357,600	21	45,200
Idaho	Insignificant	5	10,600
		100	\$212,000

*Annual value of catch, 1970-1974 inclusive.

Audit Report

ADAMS, CAHALL & CO.
Certified Public Accountants
Portland, Oregon September
24, 1976

The Board of Commissioners Pacific
Marine Fisheries Commission State
Office Building Portland, Oregon
97201

Gentlemen:

We have examined the balance sheet of Pacific Marine Fisheries Commission as of June 30, 1976, and the related statements of revenues and expenditures, fund balances, and changes in cash position for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of Pacific Marine Fisheries Commission at June 30, 1976, and the results of its operations and the changes in its cash position for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Yours truly,
ADAMS, CAHALL & CO.

Balance Sheet, June 30, 1976

ASSETS:	General Fund	Property Fund
<i>Cash</i>		
Cash on Hand and in Bank	\$15,937.47	
Certificate of Deposit	86,000.00	
<i>Receivables</i>		
Due from Washington Department of Fisheries — Otolith Project	1,974.37	
— Ocean Salmon Catches	13,876.83	
Due from National Oceanic & Atmospheric Administration — Contract #03-6-208-83	3,159.04	
<i>Office Furniture & Equipment</i>		\$8,644.82
Total Assets	<u>\$120,947.71</u>	<u>\$8,644.82</u>
<i>LIABILITIES:</i>		
<i>Accrued Liabilities & Commitments</i>	2,745.82	
<i>Unexpended Grant Funds</i>		
U.S. Dept. Commerce Sea Grant #04-3-158-35	6,406.07	
National Oceanic & Atmospheric Admin. — National Marine Fisheries Service — Contract #04-5-158-67	10,328.77	
Contract #04-5-208-27	5,989.16	
Contract #03-3-208-293	500.00	
Contract #03-4-208-264	12,061.45	
Contract #03-5-208-302	28,538.11	
Contract #03-6-208-35315	2,957.69	
Washington Dept. Fisheries — Contract #589	33.57	
Total Liabilities	\$69,560.64	0
<i>FUND BALANCES:</i>		
<i>Unappropriated Surplus, June 30, 1976</i>	51,387.07	
<i>Investment in Fixed Assets, June 30, 1976</i>		\$8,664.82
Total Liabilities & Fund Balances	<u>\$120,947.71</u>	<u>\$8,664.82</u>

Appendix 2 — Review Reports

Review of the 1976 Pacific Coast Albacore Fishery

North Pacific albacore make annual trans-Pacific migrations and are subject to 3 major fisheries: the Japanese pole and longline fisheries, and the U.S. Pacific Coast fishery. It is generally accepted that these fisheries are exploiting 6 or 7 year-classes of a single stock having extremely complex and little-understood migration patterns. Estimates of the average total harvest from this stock approach 220,000,000 pounds annually and represent about one-third of the world catch of albacore. The U.S. commercial catch of North Pacific albacore has averaged 44,642,000 pounds over the past 25 years (Table 1). The preliminary 1976 total U.S. commercial catch was 41,149,000

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

Year	California	Oregon	Washington	Total
1951	30,915	2,917	625	34,457
1952	49,804	2,586	177	52,567
1953	33,836	776	89	34,701
1954	26,107	469	421	26,997
1955	29,002	503	233	29,738
1956	37,055	3,654	630	41,339
1957	43,525	2,702	433	46,660
1958	27,188	9,754	1,503	38,445
1959	32,740	10,582	2,961	46,283
1960	35,113	4,563	526	40,202
1961	29,123	3,251	456	32,830
1962	36,622	8,936	365	45,923
1963	48,860	11,413	527	60,800
1964	42,551	4,452	1,055	48,058
1965	23,218	12,122	2,048	37,388
1966	18,189	18,041	1,101	37,331
1967	17,858	29,243	1,240	48,341
1968	15,077	37,752	3,050	55,879
1969	14,722	29,828	3,561	48,111
1970	29,932	21,779	4,390	56,101
1971	36,117	8,420	5,250	49,787
1972	21,001	23,560	16,239	60,800
1973	8,641	16,350	14,446	39,437
1974	11,806	25,225	17,983	55,014
1975	15,413	17,149	16,297	48,859
25-year average	28,577	12,241	3,824	44,642
1976 ¹	28,000	5,947	7,202	41,149

¹Preliminary figures.

pounds, which was down 16% from 1975 landings and was 8% lower than the 25-year average (Figure 1).

Conditions Affecting the Fishery

The decrease in 1976 commercial albacore landings was due mainly to unfavorable environmental conditions and a decrease in fishing effort along much of the coast during the early season. Off Oregon and Washington in August, upwelling was apparently weak and fish did not concentrate consistently along the few thermal fronts that developed. Stormy weather also hampered fishing during the season. In addition, many of the albacore trollers turned to salmon trolling due to record catch rates and prices for salmon. Late season success of albacore sport boats off Washington was due to the use of live bait. Warmer-than-average water temperatures off southern California during the spring and summer encouraged early season fishing off Mexico, but the fish were mainly small. Fishing off northern California was inconsistent and fish were also small. The southern California commercial fleet was favored early in the season with good catches and environmental conditions, a tolerant Mexican policy of extended jurisdiction, and the best market on record. From Washington to California, prices for albacore were \$870 to \$1,000 per ton, representing increases of \$200 to \$285

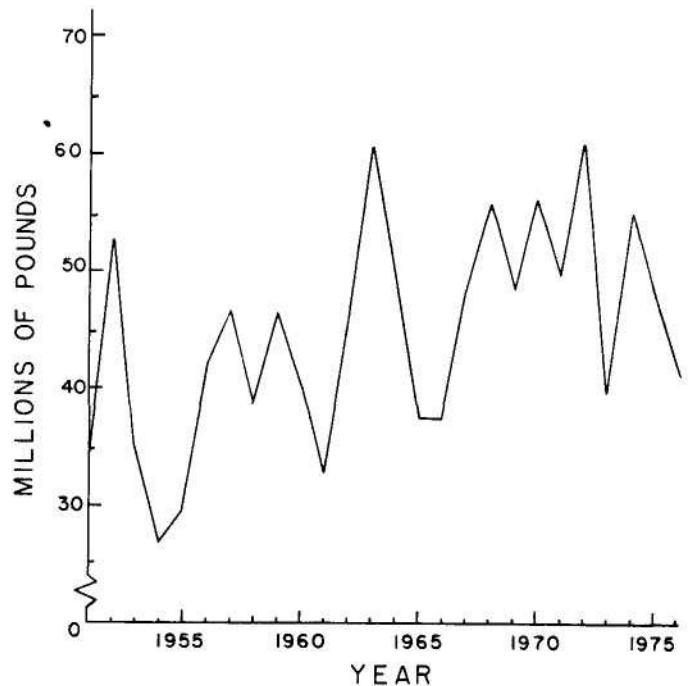


FIGURE 1. Combined annual landings of albacore in California, Oregon and Washington, 1951-1976.

over 1975s prices. However, these increases were partially offset by increased operating costs.

California

For the first time in many years a good albacore fishery developed off Mexico. In early June, fish appeared between Guadalupe Island and the mainland and remained until September; then they moved to local banks less than 80 miles from San Diego. The catch per boat averaged between 50-60 fish/day, and lengths of the fish ranged from 60 to 66 cm until mid-September when the average length increased to 80 cm. During the summer, San Diego sport boats accounted for an estimated 90,000 albacore, averaging 1.2 to 1.5 pounds, on trips often less than 60 miles from port. In late July and early August, a sport fishery developed close to shore off Avila Beach and Morro Bay. The southern California fishery was the best in 20 years.

Albacore fishing off northern California had very little in common with the south. By August, the fishery had just begun and catch rates per boat varied between days with exceptionally large catches (300-500 fish) and days with almost no success. Fishing was concentrated in an area between Fort Bragg and Monterey, with major fishing at Guide and Davidson Seamounts and the Farallon Islands. The fish were small until September, when some landings were predominated by 25- to 30-pound fish. For the most part, the schools were small fish or mixed at best. Fishermen sometimes left these schools to look for schools of larger albacore. A good price gave the fishermen flexibility in this regard.

By October, many commercial boats had left the fishery and San Diego sport landings had 'dropped to zero. During mid-October, 30 to 40 commercial boats continued to work off San Diego and off Mexico. The fish were small. The catch rate was 1/2 to 1 ton per day per boat. The landings for California in 1976 totalled an estimated 28 million pounds (Figure 2). This was close to the 25-year average.

Oregon

Commercial catches began off Oregon with a few high boat scores of 150-200 fish per day frofti 80 to 120 miles off Coos Bay during mid-July. The center of fishing moved rapidly northward and on July 19, boats reported catches up to 200-250 fish per day 60 to 180 miles offshore between the Columbia River and Westport, Washington. For the remainder of July, fishing was fairly good from Newport, Oregon northward, with catches averaging 1.25-1.50 fish per day. July landings totalled over 1.1 million pounds.

Fishing success dropped rapidly during the first half of August, when the only good fishing occurred off Cape Blanco during the second week of the month. Scores ranged from 50 to 250 fish per day. Many boats went north to Cape Cook, B.C., where scores up to 1,000 fish per day were taken for 3 or 4 days. By the end of August, fishing north of the California border had virtually ended and most of the fleet had gone south to California, or continued scratch fishing off the Pacific Northwest.

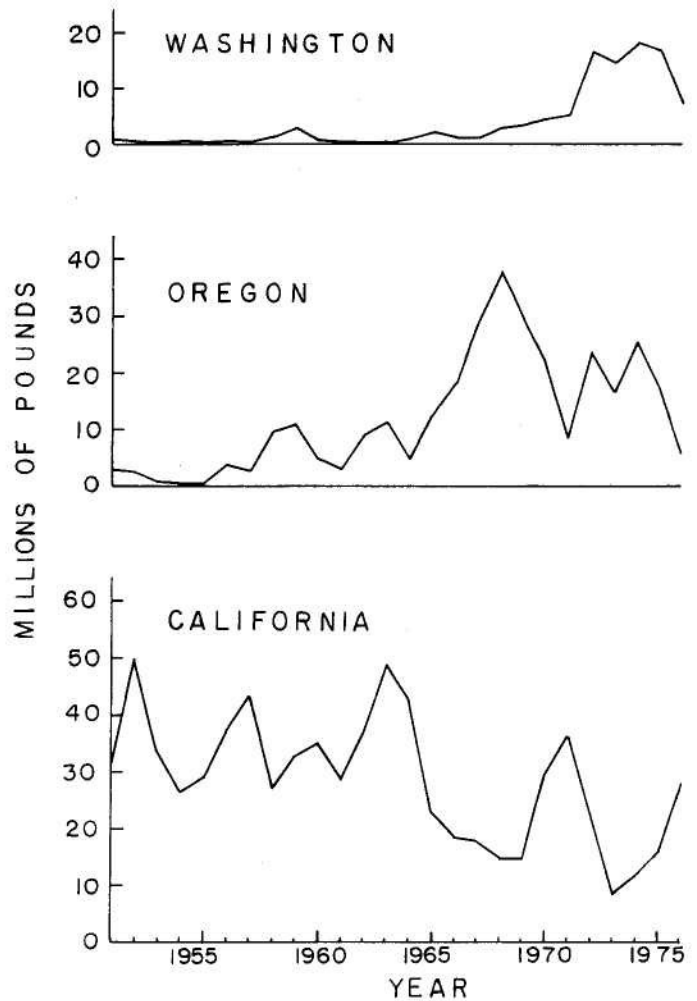


FIGURE 2. Annual albacore landings by State, 1951-1976.

Scores ranged from 10 to 70 fish per day. Many boats quit fishing and turned to salmon trolling during August. August landings totalled nearly 3.7 million pounds.

Poor fishing continued to be the rule off the Pacific Northwest for the rest of the season. Landings in Oregon for September and October were approximately 1 million pounds. The total landings for Oregon in 1976 were an estimated 5.9 million pounds (Figure 2). This represented a 52% decrease from the 25-year average and 66% from landings in 1975.

Washington

Jig boats fishing from Coos Bay, Oregon to Cape Flattery, Washington during the latter part of July averaged 50-100 fish per day with some boats reporting catches of 200-300 fish per day, 140-180 miles off the Columbia River. Most fish averaged from 13-16 pounds. July landings amounted to nearly 850,000 pounds. During late July, sport boats averaged 1.7 fish per angler, in the 17- to 10-pound category.

Early in August, effort increased off Washington with fishing occurring in areas between Westport and Cape Flattery, and off Cape Cook and Estevan Point, Vancouver Island. Jig boats fishing off the northern Washington coast averaged 50-100 fish per

day despite favorable conditions. Fishing was more successful off Vancouver Island where jig boats averaged 100-200 fish per day, with some days in excess of 500 fish. Bait boats in the area averaged 350-400 fish per day on fish averaging 1 6 to 20 pounds; some boats reported catches exceeding 1,000 fish per day. Landings in August exceeded 5.1 million pounds. Sport boat catches 30 to 50 miles offshore averaged 2 fish per angler; the fish weighed 18 to 25 pounds.

During early September most boats moved southward. Bait boats moved to the area off Cape Cook, and the jig boats which remained reported catches of 20-100 fish per day on fish averaging 1 5-20 pounds. By mid-month, most effort had ceased off the Vancouver Island and Washington coasts. September landings exceeded 988,000 pounds. Washington sport fishermen experienced good fishing during September, averaging over 3 fish per angler trip on fish averaging 20 to 25 pounds, with some fish in the 35- to 40-pound category.

Commercial fishing off Washington in October was insignificant. A few of the sport fishermen making their final trips reported small concentrations of fish 30 to 40 miles offshore. Boats fishing off California and unloading in Washington at the conclusion of their season brought the 1 976 Washington season total to slightly over 7.2 million pounds (Figure 2), which is 56% below last year's total, but 47% above the 25-year average.

Monitoring the Fishery

The 3-year Sea Grant project for support of a coast-wide

program of albacore studies, involving State of California, Oregon, and Washington fishery agencies, the National Marine Fisheries Service, and the American Fishermen's Research Foundation, has terminated. The 3 state agencies, with coordinating support from the Pacific Marine Fisheries Commission, proposed continued cooperation with the NMFS in regard to a Coordinated Coast-wide Albacore Logbook and Port Sampling Program. The NMFS responded with a \$30,000 grant in support of the proposal for the 1976 season (April 1, 1976 — March 31, 1 977), which approximated the program level supported by Sea Grant. This led to the hiring and support of 8 port samplers, geographically distributed along the coast, and resulted in an increase in biological sampling and fishermen interview coverage that can be considered fully representative of the U.S. commercial fishery for North Pacific albacore. The processed data were submitted to NMFS as input for stock assessment studies. Washington has continued with its experimental program to obtain total catch and effort data on a trip basis utilizing fish landings receipts. Evaluation of this system for potential use on a coast-wide basis will be completed next year. A systematic monitoring program of the Washington sport fishery has also been instituted.

Compiled by Mark G. Pedersen, Washington Dept., Fisheries
Other contributors:

Larry H. Hreha, Oregon Dept., Fish & Wildlife
Ellen Gleason and R. R. Bell, California Dept., Fish & Game

Review of the 1975-76 Pacific Coast Dungeness Crab Fishery

The 1 975-76 Pacific Coast Dungeness crab catch, including Canada, totalled 38.3 million pounds, a substantial increase over the 16.6 million pounds landed in the 1974-75 season (Figure 1). This exceeded both the 20-year (1956-75) and 10-year (1966-75) means of 37 million pounds. Landings in California, Oregon and Washington (excluding Puget Sound) totalled 34.7 million pounds, an increase of 23.7 million pounds over the 1974-75 landings of 11.0 million pounds. Catches in Alaska and British Columbia continued to decline, while catches off Washington and Oregon showed considerable improvement over the previous three seasons, and the improvement off California was about eight fold.

Conditions Affecting the Fishery

The sizeable increase in harvest can be attributed to a strong incoming year class which attracted more boats into the fishery. Several Oregon boats ventured south to reap some of the bountiful supply off northern California. The ocean season was extended to August 31 in northern California, and for one day in Washington. Late requests for an extension in Oregon were denied. Hecate Strait, B.C. (PMFC Area 62) was closed to

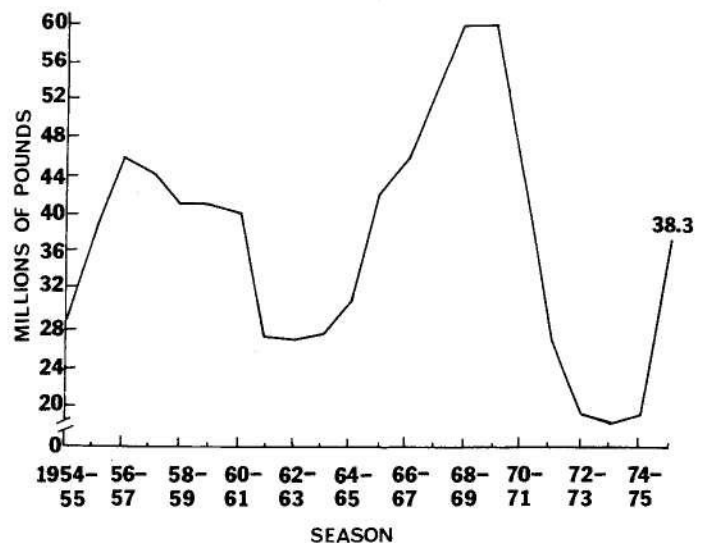


FIGURE 1. Pacific Coast Dungeness crab landings by season, including British Columbia.

crabbing from July 1 to September 20. Crab condition along the coast was excellent early in the season, but declined later. Prices ranged from 55¢ to \$1.10 per pound, but stabilized at 65-75¢ for most of the season. Most dealers imposed landing limits on fishermen as the season progressed. Severe, untimely storms scattered and buried many pots and many were lost.

Alaska¹

Landings of Dungeness crabs totalled 1.5 million pounds. This was 900,000 pounds less than for 1975 and 5.8 million pounds below the 10-year average.

British Columbia

Crab landings totalled 2.2 million pounds. This was slightly below the 2.5 million pounds landed in 1975.

Washington

Coastal crab landings in 1975-76 totalled 8.5 million pounds, an increase of 3.3 million pounds over 1974-75. The largest catches occurred in December and January. The crab catch in Puget Sound totalled 1.4 million pounds, nearly double that of 1974-75, and was the highest since the 1965-66 season.

Oregon

Landings in Oregon for the 1976 season, which closed August 14, totalled 9.1 million pounds. This was nearly a three-fold increase over the 1975 season, but only slightly better than the 10-year average (1966-1975) of 8.7 million pounds. The most substantial increases in harvest were recorded at the south coast ports of Coos Bay, Port Orford, and Brookings.

California

Statewide landings totalled 17.0 million pounds, the highest since the 1959 season when 17.8 million pounds were landed. This was a huge increase over the 1.8 million pounds landed during the 1975 season. Landings at Eureka-Crescent City and Fort Bragg were 15.3 and 1.3 million pounds, respectively, the largest catches on record for those areas. San Francisco area landings totalled 337,000 pounds. This was about 10⁴,000 pounds better than that of 1975 which was the poorest catch on record.

Compiled by Darrell Demory, Oregon Dept. of Fish and Wildlife

Other contributors:

- Jerry McCrary, Alaska Dept. of Fish and Game
- T.H. Butler, Environment Canada, Fisheries and Marine Service
- Tom Northup, Washington Dept. of Fisheries W.
- Dahlstrom and R. Warner, California Dept. Fish and Game

¹ Alaska and British Columbia crab data are reported by calendar year.

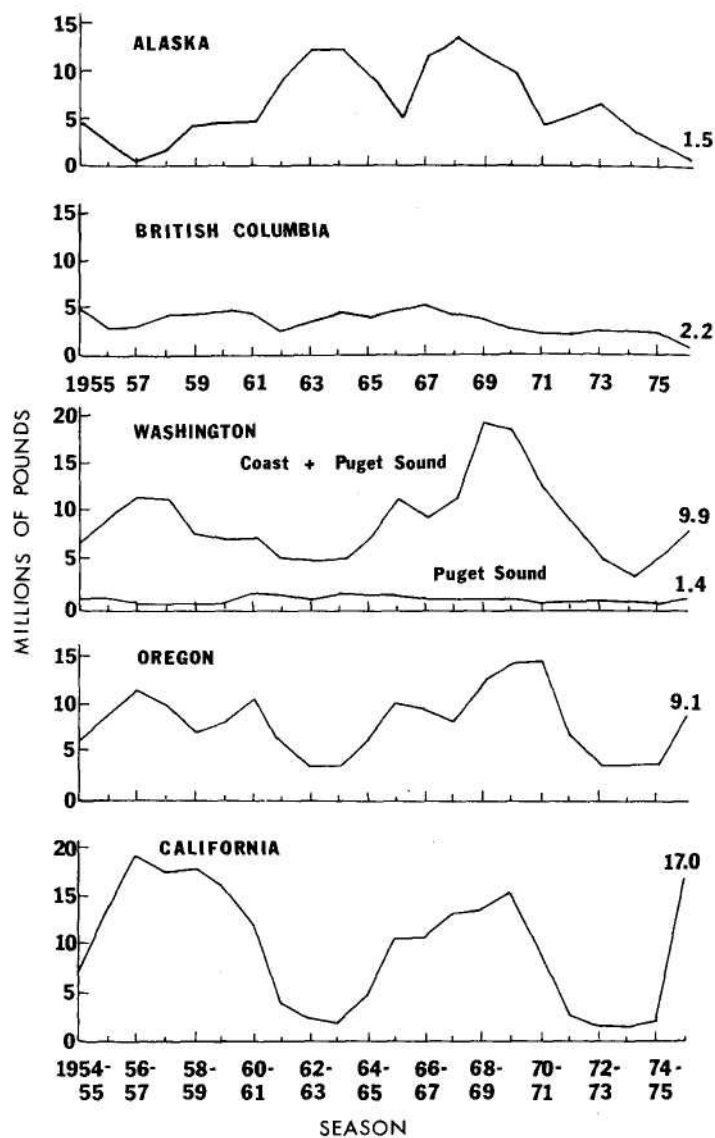


FIGURE 2. Dungeness crab landings by season, 1954-55 through 1975-76, except Alaska and British Columbia seasons are calendar years, i.e., 1954-55 = 1955.

Review of the 1976 Pacific Coast Groundfish Fishery

TRAWL LANDINGS

The 1976 Pacific coast groundfish landings¹ by American and Canadian trawl fishermen totalled 187 million pounds (Figure 1). This total was 12% above the 1975 landings of 168 million pounds and 19% above the 10-year average (1966-1975) of 157 million pounds. American trawl landings increased 13% from 120 to 135 million pounds. Canadian landings increased 9% from 48 to 53 million pounds (Table 1).

Alaska's trawl fishery remains undeveloped; only 1.1 million pounds were landed in 1976. Washington trawl landings increased 18% from 39 to 46 million pounds but were 11% below the 10-year average of 52 million pounds. Oregon trawlers landed 26 million pounds, 34% and 25% above the 1975 total of 19 million pounds and the 10-year average of 21 million pounds, respectively. California landings in 1976 were nearly identical to those of 1975 but they exceeded the 10-year average of 45 million pounds by 37%. Canadian 1976 landings at British Columbia ports of 53 million pounds exceeded 1975 and 10-year average landings by 9% and 17%, respectively (Table 1).

MAJOR TRAWL SPECIES

Dover sole, Pacific cod, and "other rockfish" continued as the major trawl species; landings of these species exceeded 30 million pounds. Landings of flatfish species, except Dover sole, have been relatively stable since 1956 while considerable fluctuations have occurred for the other species (Figure 2).

Petrale Sole (*Eopsetta jordani*)

Landings of petrale sole decreased in all areas in 1976. The 1976 total of 7.7 million pounds was 24% below 1975 landings and also below the 10-year average landing (Table 2).

English Sole (*Parophrys vetulus*)

English sole landings in 1976 of 16 million pounds were 41% above 1975 landings and 56% above the 10-year average. English sole landings increased in CHI areas (Table 2).

TABLE 1. Trawl landings in 1,000's of lb. for all purposes by region: 1975 vs. 1976 and 10-year mean (1966-1975 incl.)

Region	1975	1976	% change	10-year mean
Alaska	143	1,065	+645	—
Washington	39,032	46,058	+18	51,805
Oregon	19,337	26,000	+34	20,820
California	61,064	61,500	+1	44,819
Total U.S.	119,576	134,623	+13	117,444
British Columbia	48,277	52,607	+9	39,925
Total (U.S.-Canada)	167,853	187,230	+12	157,369

¹ 1976 U.S. data are preliminary.

Dover sole (*Microstomus pacificus*)

The increasing trend in Dover sole landings continued in 1976 as a new high of 33.8 million pounds was landed. This landing was 9% above 1975 landings and it was also above the 10-year average. California trawlers landed most of the coastal total. Oregon landings were slightly below those of 1975

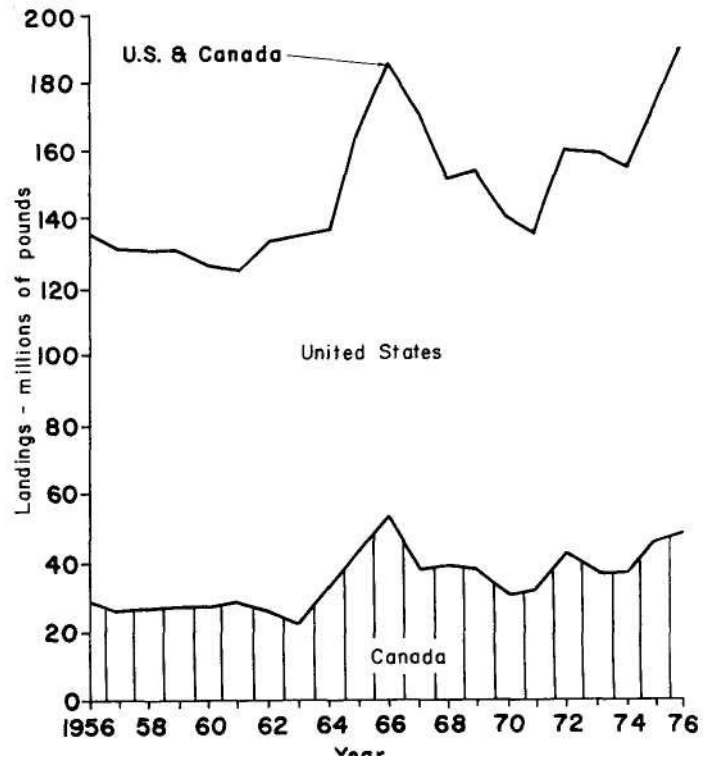


FIGURE 1. Pacific coast trawl landings of the United States and Canada.

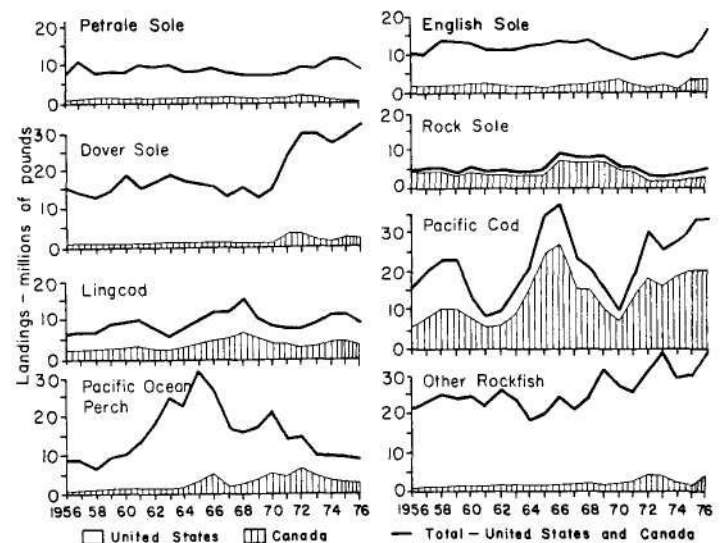


FIGURE 2. Pacific coast trawl landings by major species or group.

while Washington and Canadian landings increased in 1976 (Table 2).

Rock Sole (*Lepidopsetta bilineata*)

Rock sole landings totalled 5.3 million pounds in 1976. They were 19% above 1975 landings and nearly equal to the 10-year average. Most of the landings occurred in British Columbia and Washington; Oregon and California landings were minor (Table 2).

Pacific Cod (*Gadus macrocephalus*)

Landings in 1976 of Pacific cod of 34.4 million pounds were slightly above 1975 landings and were well above the 10-year average. Canada had the largest landings in 1976; they were slightly below 1975 landings. Washington landings of Pacific cod increased slightly and Oregon landings decreased in 1976 (Table 2).

Lingcod (*Ophiodon elongatus*)

Lingcod landings declined in 1976 in all areas. The total

TABLE 2. Trawl landings (1,000's of lb.) for food, 1975 and 1976 and 10-year means (1966-1975) by species and region

Species or group	Wash.	Ore.	Calif.	Total* U.S.	British Columbia	Total U.S. & Canada
Petrale sole						
1975	3,355	2,649	3,252	9,256	975	10,231
1976	2,516	1,662	2,800	6,978	771	7,749
% change	-25	-37	-13	-25	-21	-24
10-year mean	1,977	2,123	3,175	7,275	989	8,264
English sole						
1975	2,441	2,166	4,310	8,917	2,418	11,335
1976	4,931	3,600	4,750	12,282	2,678	15,979
% change	+102	+66	+10	+38	+11	+41
10-year mean	2,517	2,207	3,788	8,512	1,738	10,250
Dover sole						
1975	1,230	4,780	22,683	28,693	2,270	30,963
1976	3,566	4,697	23,000	31,263	2,499	33,762
% change	+190	-2	+1	+9	+11	+9
10-year mean	1,404	4,875	15,467	21,746	1,622	23,368
Rock sole						
1975	542	31	21	594	3,842	4,436
1976	650	14	20	684	4,612	5,296
% change	+20	-55	-5	+15	+20	+19
10-year mean	902	26	6	934	4,437	5,371
Pacific cod						
1975	11,134	584	-	11,718	22,602	34,320
1976	11,913	515	-	12,428	22,013	34,441
% change	+7	-12	-	+6	-3	+4
10-year mean	7,245	484	-	7,729	16,071	23,800
Lingcod						
1975	3,518	1,534	2,609	7,661	4,140	11,801
1976	3,096	1,083	2,200	6,379	3,013	9,392
% change	-12	-30	-16	-17	-27	-20
10-year mean	3,471	1,371	1,762	6,604	3,795	10,399
Pacific ocean perch						
1975	2,944	960	147	4,051	4,497	8,548
1976	1,914	2,433	80	4,427	3,748	8,175
% change	-35	-153	-46	+9	-17	-4
10-year mean	9,901	1,499	75	11,475	3,664	15,139
Other rockfish						
1975	6,885	2,498	17,775	27,158	2,156	29,314
1976	9,363	5,100	18,500	32,963	4,444	37,407
% change	+36	+104	+4	+21	+107	+28
10-year mean	10,325	3,806	11,439	25,570	1,625	27,195

* Alaska landings have been insignificant.

of 9.4 million pounds was 20% below 1975 landings and a million pounds below the 10-year average (Table 2).

Pacific Ocean Perch (*Sebastes alutus*)

Coastwide landings of Pacific ocean perch in 1976 declined 4% from 1975 landings and they were 46% below the 10-year average. Declines in landings occurred in all areas except Oregon. At Oregon ports 2.4 million pounds of Pacific ocean perch were landed, a 153% increase over 1975 landings (Table 2).

Other Rockfish (*Sebastes* and *Sebastolobus* species,)

Rockfish landings increased in all areas in 1976. The 37.4 million pounds landed were 28% above 1975 landings and were 38% above the 10-year average (Table 2). The major species in the British Columbia to Oregon area are *Sebastes flavidus* and *S. pinniger* while *S. paucispinis*, *S. goodei*, and *Sebastolobus alascanus* are the major species in the California area.

TABLE 3. Longline landings by major species in 1975 (1,000's of lb.)

Region	Sable-fish	Ling-cod	Rock-fish	Other species	Total
Alaska	2,282	17	190	—	2,489
Washington	371	77	143	124 ¹	715
Oregon ²	—	46	300	—	346
California	934	581	5,472 ³	—	6,987
Total U.S.	3,587	721	6,105	124	10,537
British Columbia ²	373	2,134	519	313	3,339
U.S. & Canada	3,960	2,855	6,624	437	13,876

¹ Includes 120,000 pounds of Pacific cod and 1,000 pounds of other species taken in set nets.
² Includes handline and troll catch.
³ Includes 3,014,000 pounds of rockfish taken in set nets.

TABLE 4. Pot landings by major species in 1975 (1,000's of lb.)-

Region	Sable-fish	Ling-cod	Rock-fish	Other species	Total
Alaska	—	—	—	—	—
Washington	1,266	1	—	12	1,279
Oregon	108	16	4	2	130
California	7,204	—	22	—	7,226
Total U.S.	8,578	17	26	14	8,635
British Columbia	1,042	—	—	1	1,043
U.S. & Canada	9,620	17	26	15	9,678

LINE AND SETNET LANDINGS

The 1975 line and setnet landings (the most current data available and excluding Pacific halibut) totalled 13.9 million pounds, an increase over the 7.3 million pounds landed in 1974. Rockfish and sablefish continued as the major species with respective landings of 6.6 and 4.0 million pounds. These were the major species in American landings while lingcod was the major Canadian species (Table 3).

POT LANDINGS

Groundfish landings of 9.7 million pounds by pot fishermen in 1975 increased 6% over the 8.2 million pounds of 1974. Sablefish was the major species; American fishermen landed 8.6 million pounds while a million pounds were landed by Canadian fishermen (Table 4).

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Review of the Pacific Halibut Fishery

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Preliminary 1976 landings of Pacific halibut reached 27.3 million pounds, 300,000 less than were landed in 1975. The catch in Area 2 (south of Cape Spencer, Alaska) was 12.8 million pounds, slightly less than the 13 million-pound quota. The catch in Area 3 (north and west of Cape Spencer, Alaska) was 14.0 million pounds, 2.0 million pounds above the 12 million-pound catch limit. The catch in Area 4 (the Bering Sea) was 500,000 pounds, the same as last year. Canadian vessels landed 11.9 million pounds and U.S. vessels landed 15.4 million pounds. Preliminary 1976 halibut landings by Canadian and American fishermen in regions of the coast are given in Table 1.

The average price paid to fishermen for the 1976 catch was about \$1.25 per pound. Accordingly, the 1976 landings had a value to the fishermen of about \$34 million. This is a new record, far exceeding the \$24 million of 1975 and the previous record of \$25 million in 1972. The high prices attracted many additional vessels into the halibut fleet. Most of the new vessels were small setliners.

Preliminary analysis of the results of the 1976 fishery indicates that the halibut stocks remain in critical condition. Evidence from juvenile halibut surveys and from catch and age composition analyses indicates that the present low stock level

is caused by a long term decline in the numbers of young fish. This decline apparently started in the late 1940's, long before the expansion of the trawl fisheries. However, the large incidental catch of young halibut by the trawlers has accentuated the decline. Severe restrictions on the North American halibut fishery and the time-area closures imposed on the foreign trawl fleets have reduced the mortality of halibut, and will contribute to stock recovery. However, the present low stock size and the small numbers of young fish entering the commercial stocks at the present time indicate that the rebuilding process will require many years.

TABLE 1. Landings of halibut in 1976 by regions of the coast (preliminary data in thousands of pounds)

Region	Canada	United States	Total
Washington and Oregon	140	820	960
Southern British Columbia	2,415	0	2,415
Northern British Columbia	7,014	7	7,021
Southeastern Alaska	779	6,745	7,524
Central Alaska	1,568	7,822	9,390
Total	11,916	15,394	27,310

Review of 1975 Salmon and Steelhead Sport Catches in the Pacific Coast States

The estimated total sport catch of salmon and steelhead during 1975 in the States of Alaska, Washington, Idaho, Oregon, and California was 2,398,924 fish. This catch was composed of 2,117,323 salmon and 281,601 steelhead. All salmon and steelhead angling was prohibited in Idaho. Oregon and Washington also prohibited angling for salmon and steelhead in the Snake River and its tributaries throughout 1975. In the Columbia River below the Snake River, angling for salmon was prohibited from April 1 through July 31 below Bonneville Dam and from April 1 through August 7 above Bonneville. Angling for steelhead in the Columbia River below the Snake River was prohibited below Bonneville Dam from April 1 through September 30 and above Bonneville from April 1 on. However, angling for salmon and steelhead was permitted in Columbia River tributaries below the Snake River, except that the Deschutes River was closed to angling for spring chinook and Drano Lake was closed to angling for summer steelhead. The various closures reduced the potential sport catches of salmon and steelhead in the Columbia River system in order to enhance escapements of spawning fish to the Snake and upper Columbia rivers.

Alaska

Alaska sport anglers caught an estimated 2,300 steelhead and 178,020 salmon in 1975. The Alaska Department of Fish and Game is scheduling 1977 for implementation of improved data collection for the sport fishery.

Washington

A record number of fishermen (546,236 anglers) took to Washington waters in 1975 and harvested a record 1,399,375 salmon (1,297,844 marine and 101,531 freshwater fish). This exceeded the previous record catch in 1971 of 1,344,818 salmon (1,198,914 marine and 145,904 freshwater fish). The breakdown of the marine catch by species shows a record 595,602 chinook (125,638 more than 1974), 679,849 coho, 20,983 pinks, 771 chum and 639 sockeye. The freshwater catch was 21,373 chinook, 21,872 coho, 301 pinks, 57,497 chinook and coho jacks and 488 unidentified salmon.

The number of marine angler trips for 1975 was a near record 1,732,156 trips. The number of salmon anglers, 546,-

236, consisted of 437,162 Washington state anglers, 101,848 out-of-state anglers and 7,225 anglers from Canada and other countries. The total number of salmon anglers has steadily increased from 302,723 in 1964 to 546,236 in 1975. This growth of nearly 262,000 anglers shows an average influx of nearly 21,800 anglers into the sport fishery every year.

The angler success ratio (catch per trip) has not diminished with the increased effort and participation of sportsmen in the fishery. Salmon per trip has ranged from 0.37 in 1964 to 0.85 in 1971. During the 12-year period 1964-1975 the average catch was 0.67 salmon per trip. The success ratio for 1975 was 0.77 salmon per trip and 2.56 salmon per fisherman year.

Since 1964, Washington sport fishing has shown an upward trend in total salmon caught. This trend has averaged approximately 62,000 more salmon caught per year. Relating this increase to the different species shows chinook increasing by 29,200 a year, coho increasing by 27,600, and the freshwater salmon increasing by 7,600.

A total of 105,698 steelhead sport anglers caught 92,851 steelhead in 1975. The sport catch has declined in recent years concurrent with fishing by Treaty Indians. In 1975 they caught 6,700 steelhead in the Columbia River and 74,904 in other streams in the State of Washington. About 900 Indian fishermen participated in the latter catch.

Idaho

Idaho maintained closed fishing seasons for both salmon and steelhead throughout all of 1975 in order to protect the runs that have been severely crippled by power dams on the Snake and Columbia rivers.

Oregon

The Oregon sport catch of salmon and steelhead in 1975 was estimated to be 602,378 fish, of which 415,928 were salmon and 186,450 were steelhead. The salmon catch was 49,000 fish less than in 1974 but still over 20,000 fish above the past 10-year average. The steelhead catch was the second highest on record, surpassed only by the 1971 catch of 197,549 steelhead.

A total of 318,308 anglers purchased salmon and steelhead tags. An additional 57,835 anglers purchased one or more daily angling licenses for the purpose of fishing for salmon or steelhead. Daily license holders were not required to purchase a

salmon-steelhead tag in 1975. Of the 376,143 anglers who bought tags or daily licenses for salmon or steelhead angling, 49% (185,003) were successful in catching fish, 31% (116,664) reported they did not fish, and 20% (74,474) reported they fished without success. When all anglers who fished are considered, the average catch per angler per year was 2.3 fish; but for those anglers who actually caught salmon or steelhead in 1975, the catch per successful angler per year was 3.26 fish. Approximately 71% of the anglers who fished caught all of the fish.

The Oregon offshore salmon fishery included 404,621 angler trips to harvest 329,146 salmon (252,209 coho, 75,719 chinook and 1,218 pink) at a rate of 0.81 salmon per angler trip. The offshore catch of coho was over 65,000 fish less than in 1974, accounting for decreases in the total offshore salmon catch and the statewide salmon catch. Even with this decrease, the offshore catch surpassed that of most previous years.

California

Final 1975 ocean salmon sport landings estimates show that ocean anglers landed 124,000 salmon. This represents the poorest landings since 1967 when sport anglers landed 123,000 salmon. The 1975 landings were well below 1974 landings of 234,000 salmon as well as the recent 10-year (1965-74) average of 182,000 salmon.

Chinook landings in 1975 were 103,000, the lowest since 1967 when 73,000 were landed. Chinook landings were well below 1974 landings of 157,000 as well as the 10-year average of 141,000 chinook. As usual, the San Francisco Bay area partyboat fleet accounted for the bulk of the landings (65,146).

The 1975 ocean sport coho catch of 21,000 salmon was the poorest since 1970 when 15,000 were landed. Landings were well below the 1974 record catch of 77,000 and the 10-year average of 41,000 coho. The Eureka area as usual was the top coho salmon port where anglers landed 10,000 fish.

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TABLE 1. Salmon and steelhead sport catch in 1975

State	Anglers	Chinook	Coho	Pink	Other salmon	Steelhead	Total catch
Alaska	unavailable	15,670	72,100	56,300	33,950 ¹	2,300	180,320
California ²	unavailable	103,000	21,000	—	—	unavailable	124,000
Idaho		(All angling for salmon and steelhead was prohibited)					
Oregon	259,479	140,818	273,892	1,218	—	186,450	602,378
Washington	<u>651,934</u>	<u>616,975</u>	<u>701,721</u>	<u>21,284</u>	<u>59,395³</u>	<u>92,851</u>	<u>1,492,226</u>
Total	—	876,463	1,068,713	78,802	93,345	281,601	2,398,924

¹ Composed of 21,950 sockeye and 12,000 chum.

² Ocean fishery data only.

³ Composed of 639 sockeye, 771 chum, 57,497 chinook and coho jack salmon, and 488 unidentified salmon.

Review of the 1976 Pacific Coast Troll Salmon Fishery

The troll catch of chinook and coho salmon for Alaska, British Columbia, Washington, Oregon, and California for 1976 totalled 64.4 million pounds compared to the 10-year average catch of 62.8 million pounds.¹ Chinook catches at 26.2 million pounds were less than the 10-year average of 27.2 million pounds. Coho catches at 38.2 million pounds exceeded the 10-year average in all regions except British Columbia.

Troll Chinook Fishery

Alaska troll-caught chinook landings were about 3.9 million pounds in 1976. This total was less than the 4.3 million pounds for 1975 and the 5.1 million pounds for 1974. The 10-year average is 4.3 million pounds.

The 1976 chinook landings by British Columbia troll fishermen were 11.5 million pounds. This was down 1.0 million pounds from the 1975 total of 12.6 million pounds and 592,000 pounds less than the 10-year average.

Washington 1976 troll chinook landings were 4.2 million pounds, 1.6 million pounds more than 1975 and 1.5 million pounds greater than the 10-year average. The 1976 Washington troll season was delayed from April 15 to May 1. This delay was followed by a federal court suspension of fishing during the last 9 days of June. The suspension also affected trolling for coho which began on June 15.

Oregon troll chinook landings for 1976 were about 2.3 million pounds. This was about 700,000 pounds less than the 1975 landings and 400,000 pounds larger than the 10-year average of 1.9 million pounds. The 1976 Oregon troll season opening was delayed from April 15 to May 1. In addition, a small part of the Oregon coast from Tillamook Head to the mouth of the Columbia River was closed from June 15 to July 1.

The 1976 California troll chinook landings were 4.3 million pounds. This represented the poorest chinook landings since 1968-when landings totalled only 4.1 million pounds. San Francisco-Monterey area trollers landed only 2.3 million* pounds of chinook, down 100,000 pounds from 1975. San Francisco-Monterey area landings amounted to only 50% of the 10-year average for that area.

FIGURE 1. Pacific Coast annual landings of troll caught chinook and coho salmon, 1956-1976.

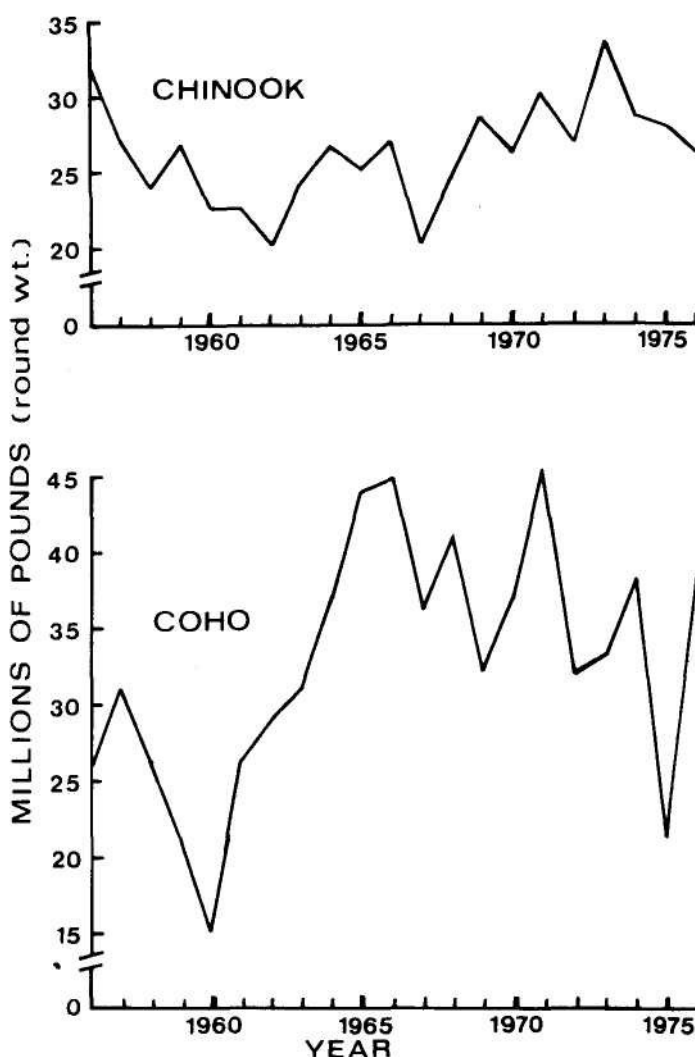


TABLE 1. Estimated landings of troll-caught chinook and coho salmon in 1976 and 10-year (1966-75) averages (round weight in 1,000s pounds)

Region	Chinook		Coho		Total	
	1976	10-Year average	1976	10-Year average	1976	10-Year average
Alaska	3,900	4,300	4,700	4,100	8,600	8,400
British Columbia	11,500	12,200	12,300	17,000	23,800	29,200
Washington	4,200	2,700	6,900	5,400	11,100	8,100
Oregon	2,300	1,900	10,600	6,500	12,900	8,400
California	4,300	6,100	3,700	2,600	8,000	8,700
Total	26,200	27,200	38,200	35,600	64,400	62,800

¹ All weights are round weights. The period from 1966 through 1975 was used to compute the 10-year averages.

Troll Coho Fishery

Alaska 1976 troll coho landings were about 4.7 million pounds compared to 1975 landings of 1.5 million pounds. The figure was approximately 17.5 percent above the 10-year average of 4.0 million pounds.

British Columbia troll coho landings for 1976 were about 12.3 million pounds. This was 2.8 million pounds more than 1975 landings of 9.5 million pounds and 4.7 million pounds less than the 10-year average of 17.0 million pounds.

Washington troll coho landings for 1976 totalled about 6.9 million pounds, approximately 1.5 million pounds above the 10-year average.

Oregon troll coho landings for 1976 were about 10.6 million pounds, a record high. This was about 5.9 million pounds above

the 1975 landings and 4.1 million pounds above the 10-year average. The area from Tillamook Head to the mouth of the Columbia River was closed from June 15 to July 1.

California troll coho landings were 3.7 million pounds, the fourth highest year on record. This was significantly better than 1975 landings of 1.3 million pounds and the 10-year average of 2.7 million pounds. The leading port was Eureka with 1.5 million pounds followed by Crescent City with 750,000 pounds. Approximately 92% of California's statewide coho landings were landed during the first 2 months (May 15-July 15) of its coho season.

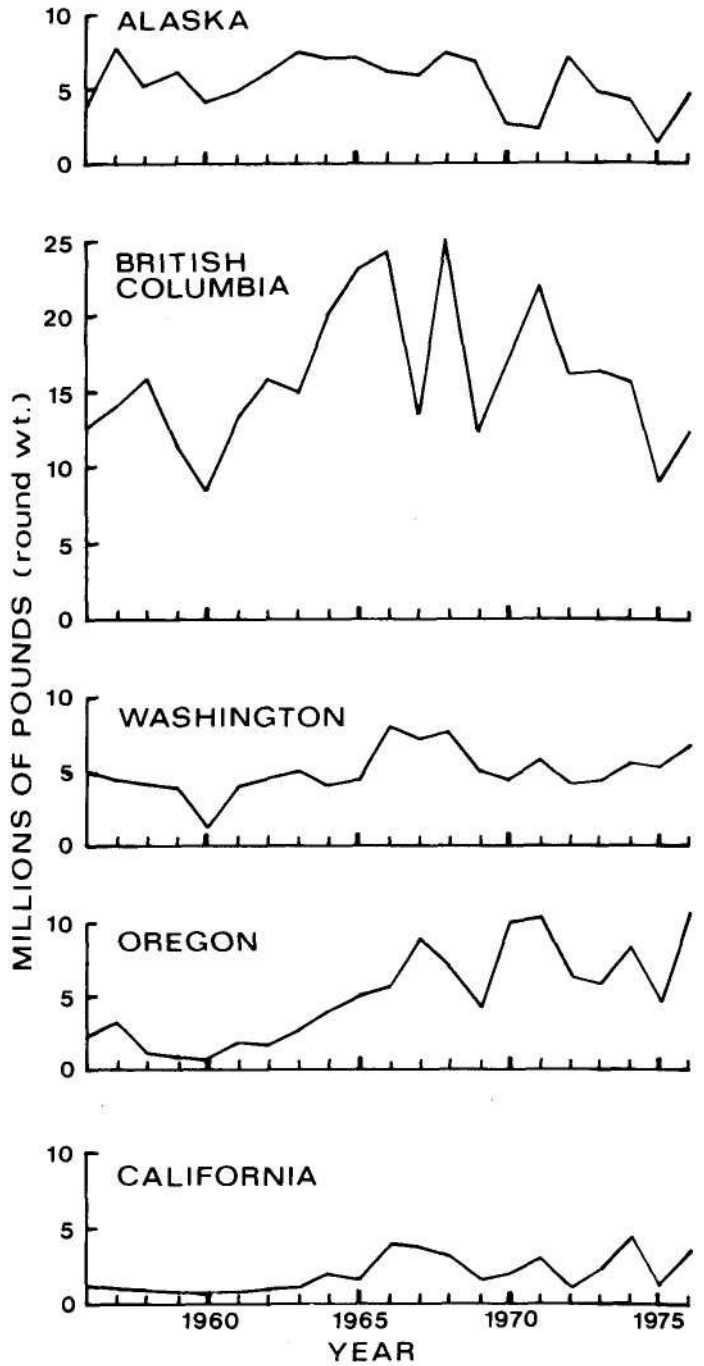
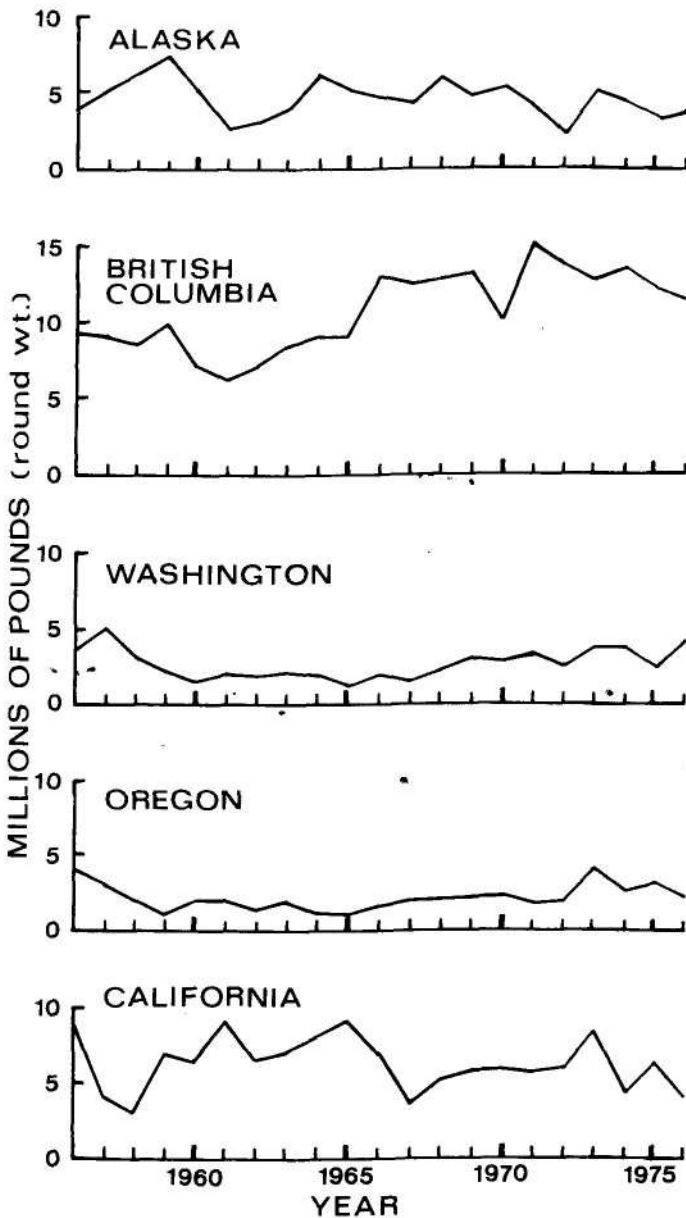


FIGURE 2. Annual troll chinook salmon landings by area, 1956-1976.

FIGURE 3. Annual troll coho salmon landings by area, 1956-1976.

Troll Pink Fishery

The Alaska troll fishery landed about 200,000 pounds of pink salmon in 1976. This was approximately 50,000 pounds less than the 1975 landings. The British Columbia catch of pinks was 2 million pounds, while the 1966-1975 average was 5 million pounds. Washington, Oregon and California reported only minor landings of pinks, which is typical for even-numbered years.

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Review of the 1976 Pacific Coast Shrimp Fishery

Pandalid shrimp landings for the West Coast of the United States and Canada reached a new record high of 175 million pounds. This represents an increase in catch of 35 million pounds over 1975 and 22 million pounds more than the 1973 record catch of 153 million pounds. Alaska landings reached 129 million pounds, well above the 1973 record of 120 million pounds. Oregon landings of 25.3 million pounds surpassed the 1973 record of 24.5 million pounds. Washington landings totalled 9.2 million pounds but were short of the 1975 record landings of 10.2 million pounds. British Columbia landings reached an estimated 8.5 million pounds, more than triple the 1974 record of 2.6 million pounds. California landings of 3.5 million pounds were above the 10-year average but below the 1975 record of 5.0 million pounds.

Record landings in 1976 were primarily due to increased effort brought about by good markets, higher prices, favorable weather, and generally good stock abundance. Small shrimp and incidental fish were periodic problems resulting in lower effort in some areas. The mobility of shrimp fleets and willingness of fishermen to fish more distant areas, where higher catch-per-unit-effort or quality could be obtained, increased markedly. This increased mobility resulted in a pulse fishing pattern of a magnitude not previously experienced, and required the establishment

of maximum harvest levels and fishing closures for the first time in some Alaskan areas.

California

Ocean shrimp, *Pandalus jordani*, landings totalled 3.5 million pounds. Last year 5.0 million pounds were landed. Poundage quotas in all areas were removed in 1976. The resource is being managed by season, minimum mesh size, and emergency closure regulations. Emergency closure is based on small shrimp in the landings and low catch per unit of effort.

Landings for Area A (Crescent City-Eureka; PMFC Area 92) totalled 2.7 million pounds with an average catch per hour of 606 and 1,610 pounds, respectively, for single- and double-rigged vessels. The season opened April 16 with a price to the fishermen of 16 cents per pound and increased to 20 cents in May for the remainder of the season. Effort was low through mid-June because of inclement weather and heavy concentrations of smelt, but by mid-August, 14 vessels including 4 double-rigged vessels were actively fishing with the best volume being taken between Redding Rock and Patricks Point. Effort tapered off through September because of the poor shrimp grade. Shrimp of the 1974 year-class comprised 54 to 90 percent of

TABLE 1. Annual shrimp landings, 1966-1976, and previous 10-year means in pounds by region

Year	Alaska	British Columbia	Washington	Oregon	California	Total
1966	28,192,621	1,682,000	282,947	4,751,300	1,213,959	36,122,827
1967	41,812,552	1,696,000	1,028,744	10,373,956	1,404,821	56,316,073
1968	42,023,084	1,568,000	1,163,864	10,976,258	2,223,205	57,954,411
1969	47,850,560	2,118,700	1,425,286	10,477,945	2,951,800	64,824,291
1970	74,256,326	1,537,800	925,000	13,735,000	4,044,640	94,498,766
1971	94,891,304	735,000	678,000	9,291,000	3,074,000	108,669,304
1972	83,830,064	794,000	1,582,000	20,900,000	2,500,000	109,606,064
1973	119,963,729	1,729,000	5,271,000	24,500,000	1,239,000	152,702,729
1974	108,741,434	2,644,000	9,300,000	19,968,000	2,360,000	143,013,434
1975	98,535,031	1,729,000	10,200,000	23,700,000	4,997,000	139,161,031
Mean	74,009,670	1,623,350	3,185,684	14,867,346	2,600,843	96,286,893
1976	129,011,047	8,470,000	9,224,898	25,300,000	3,470,000	175,475,945

the catch through early July but 1975 year-class shrimp dominated the catch in August and September.

Landings for Area B-1 (Fort Bragg; PMFC Area 94) totalled 720,500 pounds compared to 347,000 pounds last season. Eleven vessels participated in the fishery which started during late-April. Catch per hour for 8 single-rigged vessels and 3 double-rigged vessels was 575 and 989 pounds, respectively. Most of the fishing took place in an area extending from Usal to Westport in 60 to 80 fathoms.

No landings were made in Area B-2 (Bodega Bay; PMFC Area 96). The shrimp were small and the fishermen quit fishing after expending just one day in trying to find larger shrimp and volume. Last season nearly 1.2 million pounds were landed in Area B-2. Only 5,328 pounds were landed in Area C (Morrow Bay-Avila; PMFC Area 98). Last season 62,000 pounds were landed in this area.

Oregon

Ocean shrimp landings in Oregon totalled a record 25.3 million pounds. This total was 1.5 million pounds greater than 1975 and 800,000 pounds greater than the previous record in 1973. Landings in August, usually a month of poor production, were a record 6.0 million pounds. Favorable weather and good concentrations of shrimp in certain areas contributed to this record monthly landing. A total of 84 shrimp vessels (48 double rigged) participated in the fishery, up slightly from 80 last year. Shrimp prices started at about 16 cents per pound and gradually increased to an average of 20 cents by the end of the season in October.

The major shrimp producing area was off north-central Oregon (PMFC Area 84) with 10.5 million pounds, 2.8 million pounds more than were landed from this area in 1975. The grade of shrimp remained good through the season with the 1973 and 1974 year-classes (2- and 3-year-olds) dominating the catches. Area 82, off northern Oregon also produced well at 987,000 pounds, over 1.5 times the 632,000 pounds landed in 1975.

Production from Coos Bay shrimp grounds (Area 86) was 8.4 million pounds, down 2.0 million pounds from 1975 landings. Shrimp grade was good early in the season but quickly deteriorated as a strong 1975 year-class entered the fishery. In August the average grade was 155 per pound and by the end of the season it improved slightly to 135 per pound. Shrimp catches from Area 88 off southern Oregon were 810,000 pounds, slightly better than in 1975.

Oregon landings of shrimp caught in California waters (Area 92) at 362,000 pounds were the highest they have been in several years. Shrimp caught off Washington and landed in Oregon totalled 2.8 million pounds, down from last year's 4.2 million pounds. Shrimpers were hampered by a poor grade of shrimp and big catches of smelt. Landings in Oregon of shrimp caught off Washington were down in all areas with 109,000 pounds, 1.7 million pounds, and 955,000 pounds from Areas 72, 74, and 75, respectively. In August a good concentration of shrimp was located off Vancouver Island and high catch rates

(up to 2,000 pounds per hour) attracted many shrimpers from Astoria. Landings from Area 66 totalled 1.5 million pounds. The majority of the landings were in August and September.

Washington

The pink shrimp fishery off the Washington coast began with a low level of effort that produced about 650,000 pounds during the January-March period. Landings peaked at 2.2 million pounds for the month of June and total landings in 1976 were 9.2 million pounds, a drop from the record 10.2 million pounds landed in 1975. A total of 21 vessels (19 double-rigged) fished through late spring and early summer. However, by early August nine vessels, including several of the highest producers, had left for other areas or other fisheries. By late September only four vessels remained in the fishery and three of the State's five canneries had ceased shrimp processing.

Boats based at South Bend and Westport fished heavily off Grays Harbor (Area 74) and Destruction Island (Area 72) with considerable additional effort off Vancouver Island (Area 66) in late summer. Four vessels that landed shrimp in Ilwaco and Chinook operated mostly off southern Washington (Areas 74 and 75) and northern Oregon (Areas 82 and 84). Large catches of fish, especially smelt and anchovies, plagued shrimpers throughout the year. In addition, some localities produced unmarketable small shrimp in quantities that made fishing unfeasible.

Biological sampling during January to March showed large numbers of egg-bearing females and 2-year-old males. Larval release began in mid-March and was nearly completed by the end of the first week of April. The 1974 year-class has been very strong in samples throughout the year, with most undergoing transition to females during the summer months. The 1975 year-class began to make a substantial showing in June.

British Columbia

Pandalid shrimp landings (all species combined) reached a record catch estimated at 8.5 million pounds. During the previous 3 years, catches ranged from 0.5 million to 2.6 million pounds. Fine weather and a good market demand for shrimp (*Pandalus jordani*) resulted in increased fishing effort in PMFC Area 66, where the major catch was taken.

Alaska

Pandalid shrimp landings, primarily *P. borealis*, reached a new record of 129 million pounds. This was over 30 million pounds more than 1975 and was due to higher effort resulting from strong markets and an increase in the ex-vessel price from 7 to 10 cents per pound since January-February 1975.

Chignik-Alaska Peninsula and Aleutian Islands (PMFC Area 55) landings reached a new record high of 70.3 million pounds, about 24 million pounds over the previous high catch. Alaska Peninsula landings were a record high of 37.5 million pounds while Chignik landings also set a new record of about 29 million pounds. In general, average monthly vessel effort in Chignik

and Alaska Peninsula areas, respectively, increased to 16 and 27 vessels during May through August, compared to 1975. All of the increase in effort was by Kodiak-based vessels, some of which fished areas such as Pavlof Bay, more than 48 hours from port. Shrimp processing capability in the Chignik-Alaska Peninsula region decreased with the removal of one plant and another lost to fire. By mid-summer guideline harvest levels were established to prevent some stocks from being seriously over-fished. Harvest ranges were assigned all major shrimp grounds in the Chignik-Alaska Peninsula fishing districts with midpoints of these ranges totalling 65 million pounds. The catch for this region reached 65 million pounds through October and high abundance indices from fall research surveys justified extending harvests in some areas beyond the midpoint harvest levels. Landings in the Aleutian Islands region reached 3.7 million pounds by May but no further landings were made.

Kodiak Island landings (PMFC Area 54) reached 51.4 million pounds, 4.5 million pounds more than in 1975. However, the seasonal harvest (May through February) will be about 5 million pounds less than in 1975. Major production areas along the east side of Kodiak produced well although catch per hour rates generally declined. It is suspected that this decline is due to shorter seasons and increasing intensity of fishing. A continued decline in catch and effort since 1974 from the west side of the Island has been influenced by high incidental fish catches. Kodiak Island harvest levels are still being allocated to provide for up to one-third of the allowable season catch in certain areas to be taken during January-February. The number of vessels fishing Kodiak was 72, nearly the same as in 1975. Most of these vessels are double-rigged and several are equipped with side

scanning sonar which greatly increases their ability to fish edges and develop new grounds.

Cook Inlet trawl landings (PMFC Area 53) of 5.8 million pounds were above the 5-million pound harvest guideline established for Kachemak Bay from which nearly all trawl landings originated. With improving market conditions, pot shrimp landings from Kachemak Bay reached 434,000 pounds but were below the 600,000-pound quota.

Southeastern Alaska landings (PMFC Area 51) reached 1.0 million pounds but effort and stock abundance were below historic levels. Prince William Sound landings (PMFC Area 52) reached a new record high of 135,000 pounds, primarily as a result of exploratory effort by Kodiak-based vessels.

Stock status throughout Alaska is generally good but population levels in some major Chignik and Alaska Peninsula production areas declined considerably in 1975 and 1976. In some instances, major declines occurred even in areas previously unutilized. The condition of intensively fished stocks particularly in the Mitrofanina Island, Stepovak Bay, Kujulik Bay and West Nagai regions is uncertain. Kodiak stocks appear to be stable except for west side bays and the as yet incomplete recovery of the Ugak Bay stock.

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Appendix 3 — Foreign Fishing Activity off the Pacific Coast of the United States in 1976

This is a summary of information generously furnished PMFC by the Alaska and Northwest Regional offices of the National Marine Fisheries Service, regarding fishing activities by foreign fleets off the Pacific Coast of the United States in 1976. The foreign fishing activities will be discussed according to those off Alaska and those off Washington, Oregon and California. Also included are some notes from Paul Hirose, Oregon Department of Fish and Wildlife, regarding his observations aboard the Polish stern trawler *DENEbola* in August.

FOREIGN FISHING OFF ALASKA

Soviet Fishing

Soviet fishing off Alaska in 1976 included a trawl fishery for groundfish along the Continental Shelf edge in the Gulf of Alaska, along the Aleutian Island chain, and in Bering Sea. The Soviets did not employ the usual fleet of side trawlers and a factory ship for flounder and pollock near Kodiak Island, and as in 1975 they did not fish for shrimp in the Gulf of Alaska. Previously they fished annually for shrimp from 1964 to 1974 inclusive. They fished for herring in the central Bering Sea in the winter months, but they did not fish for crab in the eastern Bering Sea in 1976 or in the preceding four years. In 1976, as in previous years, the Soviet north Pacific whaling fleets remained far offshore from Alaska.

Groundfish: Trawling was conducted along the Aleutian Island chain, principally by stern trawlers in 2 main areas. In January the effort was divided: 7 steppr-trawlers fished off the western Aleutians and 4 medium trawlers fished off the central Aleutians. The effort increased to 31 stern trawlers off the western Aleutians by the end of April and remained at that level until mid-August when it began to decline until only 1 stern trawler was fishing off the Aleutians by the end of September. No further groundfishing occurred off the Aleutians until the first week in December when 1 stern trawler fished briefly off the western and central Aleutians. The catches were principally rockfish, Atka mackerel (*Hexagrammos stelleri*), and pollock.

Soviet trawling in Bering Sea was primarily in two areas: the eastern Bering Sea north of the Fox Islands, and the central Bering Sea northwest of the Pribilof Islands. The catches in the eastern Bering Sea were mainly arrowtooth flounder, sablefish, rockfish, and pollock. The catches in the central Bering were mainly pollock and included incidental catches of herring in November and December. The trawling effort in the eastern Bering Sea was relatively constant throughout the year and was primarily by side trawlers; in the central Bering Sea it was continuous throughout the year and was by stern and side trawlers.

Soviet trawling in the Gulf of Alaska was primarily by stern trawlers, mainly along the Continental Shelf edge of Albatross and Portlock Banks near Kodiak Island and with lesser effort in the western and southeastern portions of the Gulf. At the

beginning of 1976, the fishery on Albatross and Portlock Banks involved 15 stern trawlers and increased to 24 in February. In March the number of trawlers began to decrease, and they were split between Albatross Bank and the Yakutat grounds; by the end of May there were only 8 trawlers. In June, 5 stern trawlers were on Albatross Bank and 3 were off Sanak Island. Fishing ceased temporarily but by the end of July there were 3 trawlers fishing again on Albatross and Portlock Banks. By October the number increased to 18 stern trawlers and 1 medium trawler between Albatross Bank and northeast of the Shumagin Islands, and 5 stern trawlers were sighted in and around the Kayak loading zone. In November there were 23 trawlers on Albatross Bank but they decreased to 9 by December. The principal catches were rockfish, pollock and Atka mackerel.

The number of vessels (including support vessels) present simultaneously in the groundfishery ranged from 30 to 132. The fishery peaked from February through May when the average was 99 vessels, thereafter the average was 52. The estimated catch of groundfish, including herring, was about 347,000 metric tons (m.t.).

Herring: Soviet herring fishing was more of an incidental than a directed fishery. It began in February with 33 vessels in central Bering Sea which were also fishing for pollock. The fleet increased to 39 vessels by late February and remained at that level until mid-April when herring fishing ceased and the catches became predominantly pollock. It is estimated that the fleet caught 7,000 to 10,000 m.t. of herring, only half as much as the previous season. In November, fishing in central Bering Sea for herring incidental to fishing for pollock was resumed by 46 vessels and by the end of December there were 51 vessels.

Japanese Fishing

Japanese fishing off Alaska in 1976 included: fishing by independent stern trawlers along the Continental Shelf edge in the Gulf of Alaska, along the Aleutian Island chain and in Bering Sea; trawling by factory-ship fleets on and along the Continental Shelf in central and eastern Bering Sea; longlining for sablefish principally in the Gulf of Alaska and along the Aleutian chain with occasional activity in Bering Sea; trawling for flounder by a factory-ship fleet in eastern Bering Sea; crab fishing in eastern Bering Sea; herring fishing along the western coast of Alaska; and high seas gillnet fishing for salmon west of 175° west longitude. The Japanese did not fish for snail in central Bering Sea in 1976 and their whaling fleets stayed generally well offshore, as in previous years.

Groundfish: Independent Japanese stern trawlers fished continuously throughout 1976 along the Continental Shelf edge from off southeastern Alaska to off the Shumagin Islands. The number of trawlers ranged from 6 to 12 and the principal catches were rockfish, sablefish and pollock.

Independent stern trawlers fished along the Aleutian Island

chain; throughout January, 6 stern trawlers fished off the western Aleutians, then ceased fishing until mid-March when 2 resumed fishing around the Seguam-Amukta Pass area of the central Aleutians. By the end of April there were 9 and the increase continued during May and June until there were 27 fishing throughout the Aleutians. The fishing effort slowly declined from July to the first week of December when there were only 2 stern trawlers off the central Aleutians. By year's end there was no Japanese groundfishing off the Aleutians. Pacific ocean perch was the principal species in the catches.

Independent stern trawlers fished along the Continental Shelf edge in Bering Sea. Effort in the winter and spring was confined by Japanese domestic regulations to west and north-west of the Pribilof Islands. January began with 15 stern trawlers in central Bering Sea; the number increased to 25 in February, decreased to 20 in March, increased to 33 in April and to 46 in May with trawlers scattered from south of the Pribilofs in eastern Bering Sea to north of them into central Bering Sea. The independent stern trawlers decreased to 32 in June and July, with all of them fishing the Continental Shelf edge in Bering Sea; then increased to 45 during August and September; then beginning in October they gradually decreased until by the end of December there were only 4 fishing in central Bering Sea. As in previous years the principal trawl catch in Bering Sea was Alaska pollock.

Five factory-ship fleets fished for Alaska pollock on and along the Continental Shelf edge in Bering Sea in 1976, the same number as in 1975. This large effort began in early April with 4 factory ships accompanied by 74 trawlers. By the end of April a 5th factory-ship fleet arrived, bringing the total effort to 102 by August 1, and 2 fleets were operating in central Bering Sea and 3 fleets were operating in eastern Bering Sea just north of Unimak Pass by the beginning of September. By October all 5 fleets were congregating in the latter area, but by month's end 3 fleets had left the Alaskan area. The 2 remaining fleets were divided between eastern and central Bering Sea; both left the Alaskan area by mid-November. %

The 1975 winter fishery for flounder in eastern Bering Sea continued with 2 factory ships and 16 trawlers operating until they left in February 1976. The 1976 winter fishery for flounder began in early October with 1 factory ship and 7 trawlers operating north of Unimak Pass; fishing continued into January 1977. It is estimated that the 1976 groundfish catch (including herring) by independent stern trawlers and factory-ship fleets throughout the Alaska area totalled about 1,106,980 metric tons, with pollock being the dominant species.

Herring: The Japanese herring fishery off Alaska in 1976 included a winter trawl fishery in central Bering Sea and a spring gillnet fishery in eastern Bering Sea along the coast of western Alaska. The Japanese Government set quotas of 15,000 metric tons for the trawl fishery and 3,000 m.t. for the gillnet fishery, but both fisheries did very poorly. In 1975, the gillnet fishery did very poorly and there was no winter trawl fishery. In 1976, a brief fishery for herring began in mid-May south of the Pribilof Islands in eastern Bering Sea, involving 1 factory ship and 10

stern trawlers; by month's end the fleet departed the area. The Japanese reported that the brief trawl fishery caught 2,445 m.t. but from surveillance it is believed that most of the herring were caught incidentally during fishing for groundfish. The spring herring gillnet fishery began in mid-May with 9 vessels off Togiak Bay in outer Bristol Bay. By the end of May there were 12 vessels and they had moved to Norton Sound. The vessels increased to 14 in early June and the fishery ended in the second week of June. The duration of the 1976 fishery was about the same as in 1975. The Japanese reported a catch of 2,871 m.t. by the spring gillnet fishery. The total herring catch by trawl and gillnet in 1976 was 5,316 m.t. compared to 3,419 m.t. in 1975.

Sablefish: The Japanese longline fishery for sablefish off Alaska by independent vessels continued in 1976 on a year-round basis. As in past years, the fishery was centered in the Gulf of Alaska with occasional fishing along the Aleutian Islands and in Bering Sea. The average number of vessels off Alaska per month varied from 6 to 16 except for July and August when 17 to 18 were present.

All 22 longliners that were licensed to fish in the Gulf of Alaska by the Japanese fishery agency and the longline association were positively observed fishing in 1976 along the Continental Shelf edge from off southeastern Alaska to south of Sanak Island in the western Gulf of Alaska. Peak effort occurred in August when 17 longliners were fishing in the Gulf. The longline catch in this area in 1976 by the Japanese was approximately 12,030 m.t.

Crab: The Japanese in 1976, as in previous years, employed 2 factory-ship fleets in the tanner crab fishery in eastern Bering Sea. The 2 factory ships were accompanied by 12 pot-fishing vessels. This was the second season under the reduced quotas established by the U.S.-Japan fisheries agreement for 1975 and 1976. The quota for the southern area was 2.5 million tanner crab and for the northern area the quota was 1.1 million. Both fleets started fishing in the southern area on March 10. On April 10 one fleet shifted to the northern area and was followed by the other fleet on April 19. The southern area catch was 2,437,000 tanner crabs. Both fleets returned to Japan after catching 7,206,000 tanner crabs in the northern area by June 21. The remainder of the northern area quota was allocated to independent vessels fishing west of 175° west longitude. Of the 31 vessels licensed by the Japanese fishery agency to engage in the fishery, only 14 were observed operating between 175° west longitude and the International Date Line.

Salmon: The annual Japanese high seas salmon fishery was again composed of 10 fleets with a total of 332 gillnet catcher vessels. Fishing began on May 20 and the quota of 32,480 m.t. was caught by July 26. All 10 fleets in the Alaskan area operated south of the western Aleutians during the last half of May and the first week of June. By mid-June some fleets moved to central Bering Sea where 3 fleets were fishing at month's end. By mid-July only 6 fleets remained in the Alaskan area; during July they were generally dispersed from central Bering Sea to south of the western Aleutians until the fishery ended near the end of the month.

South Korean Fishing

South Korean fishing off Alaska in 1976 increased significantly over that in 1975. Trawling for groundfish by independent stern trawlers occurred in Bering Sea, off the Aleutian Island chain, and in the Gulf of Alaska. A factory-ship fleet trawled for groundfish in Bering Sea, and longline vessels fished in the Gulf of Alaska.

Groundfish: It is estimated that the independent trawlers and factory-ship fleet caught approximately 124,500 m.t. of groundfish in 1976. Two independent stern trawlers began fishing north and south of the Fox Islands during the first part of April and the number increased to 6 by the end of May. During June and July there were 16 vessels trawling south of the Fox Islands. That number decreased to 13 trawling in eastern Bering Sea and the Gulf of Alaska in August and gradually decreased until all the independent stern trawlers had left the Alaskan area by November 1.

The factory-ship fleet with 29 trawlers began fishing in mid-May for pollock south of the Pribilof Islands before moving to central Bering Sea where the fleet remained until the last of September. It then moved to eastern Bering Sea north of Unimak Pass. In late October the fleet returned briefly to central Bering Sea before leaving the Alaskan area by November 1. South Korea did not employ a factory-ship fleet in 1975 but did in 1974.

Sablefish: South Korean longline fishing for sablefish was sporadic and involved at least 12 different vessels. Most of the effort was in the eastern Gulf of Alaska, primarily off southeast Alaska, with lesser effort occurring in the Albatross and Portlock Banks area and south of the Shumagin Islands.

One vessel began longlining for sablefish off southeast Alaska in mid-January. By mid-February there were 4 vessels off that area, and a 5th vessel was off Albatross Bank by month's end. One longliner fished off the Shumagin Islands in March but by month's end all the longliners had left the Alaskan area. However, by the end of April there were 2 longliners off southeast Alaska again and the number rose to 6, split between Albatross Bank and southeast Alaska. In September the number increased to 8 in the Gulf of Alaska, and for a short period one of the longliners fished off the eastern Aleutians. Effort remained at this level until November when it decreased to 3 vessels off southeastern Alaska and to zero by month's end. It is estimated that the South Koreans caught 2,800 m.t. of sablefish in 1976.

Taiwanese Fishing

Groundfish: The Taiwanese in 1976 entered the trawl fishery for groundfish off Alaska in February with one independent stern trawler in eastern and central Bering Sea. It left the Alaskan area in March but returned to eastern Bering Sea in mid-May. By July it had moved to the eastern Gulf of Alaska; there it fished for the entire month before returning to eastern Bering Sea where it remained until mid-August before leaving the Alaskan area again. The same stern trawler reappeared in the eastern Gulf of Alaska in mid-October and is believed to have left the Alaskan area by mid-November. The estimated catch

of this vessel was 2,950 m.t. of groundfish.

Sablefish: Five Taiwanese longline vessels fished for sablefish in 1976. Fishing began in the last part of April and continued for the remainder of the year. The effort was centered off southeast Alaska and the estimated catch was 1,000 m.t.

Miscellaneous: (There was no mention in this report of violations of U.S. fishing laws, but a quick perusal of news media disclosed that there were at least three foreign vessels apprehended for fishing violations off Alaska in 1976. —Editor)

FOREIGN FISHING OFF WASHINGTON, OREGON AND CALIFORNIA

Soviet Trawling

The Soviet fishery for hake in 1976 began off central California during the second week of March. By the end of March, 10 stern trawlers were fishing. The fleet in April and May gradually moved north and by June had increased to 89 vessels (72 stern trawlers, 9 transports, 7 support vessels, and 1 tanker) operating off California, Oregon and Washington. In July and August the fleet decreased to 71 vessels (55 stern trawlers, 10 transports, 3 patrol vessels, 1 tanker, 1 tug, and 1 research vessel), and in September it decreased to 38 (32 stern trawlers, 3 transports, 2 patrol, and 1 research). In October there were only 9 vessels (8 stern trawlers and 1 research). These concentrated their fishing off Oregon and by mid-October all the stern trawlers had left. The research vessel continued operating off Oregon during the first three weeks of November, before it reportedly moved to off Canada.

East German, Bulgarian and Polish Trawling

East German: During the first 2 weeks of January, 1 East German stern trawler fished herring off the Pacific Coast. There was no further activity until late June when an East German stern trawler fished hake off northern California. In July this effort expanded to 3 trawlers and 1 transport, moving northward to off southern and central Oregon. In August there were 4 stern trawlers, 1 transport, and 1 tanker. From early September through October there were 5 stern trawlers and 1 tanker off Oregon and central Washington fishing for hake.

Bulgarian: Bulgarian vessels entered the Pacific hake fishery for the first time in May 1976 with the arrival of 3 stern trawlers off Humboldt Bay, California. They remained in that area through June before moving north to off central Oregon. A Bulgarian transport arrived at Heceta Bank off Oregon in July. The trawlers fished off central Oregon through August. In September the Bulgarian fleet expanded to 5 stern trawlers and 1 transport off Oregon and Washington. In late September the stern trawler *OFELIA* was apprehended for fishing in the U.S. contiguous fisheries zone. The Master was fined \$5,000 and placed on 1-year probation. The settlement of the civil suit against the vessel was \$350,000. Following completion of the legal proceeding in mid-October, the *OFELIA* resumed fishing, making a total of 5 stern trawlers and 1 cargo vessel in the hake fishery off Oregon. The fishery decreased to 3 stern trawlers and 1 cargo vessel by November. Two stern trawlers and one cargo vessel were off Oregon in December.

Polish: In accordance with the 1976 United States-Poland Bilateral Agreement, Polish vessels did not begin fishing hake until June. Four stern trawlers entered the fishery off California and gradually moved north into Oregon waters with occasional trips to fish off central Washington. The maximum number of stern trawlers allowed under the agreement, seven, was reached in August. Two transports provided support for the fleet. The fleet composition remained the same in September. The quota of 26,000 m.t. of hake was caught by late September and the Polish fishing fleet was asked to depart the area by October 1.

Japanese Longlining and Trawling

Three Japanese longliners fished for sablefish off Washington and a fourth one fished for sablefish off Cape Mendocino, California in January. By February the effort decreased to only one longliner off Cape Mendocino and by month's end the effort was zero. Japanese stern trawlers fished off Oregon and California: 2 during June through August; 1 only in September; and none thereafter

South Korean Longlining and Pot Fishing

South Koreans fished for sablefish throughout the year. In January, 8 longline vessels fished primarily off Oregon. The effort increased to 9 vessels fishing longlines, 4 fishing pots, and 1 transport off Oregon and Washington in February. It then decreased briefly to 10 fishing vessels and 2 transports in March, before increasing in April to 13 fishing vessels (12 longline and 1 pot) and 1 transport operating from Cape Flattery, Washington to south of Redding Rock, California. There were 13 vessels operating in May and 14 fishing vessels plus 2 transports in June. In July the numbers increased to 15 fishing vessels and 3 transports which were deployed from Cape Flattery to San Luis Obispo, California. In August there were 14 vessels; these decreased to 11 (6 pot, 3 longline, and 2 support) in September. In October there were 13 vessels (2 longline off Washington, 1 cargo off Oregon, plus 5 longline and 5 pot vessels off California) in the sablefish fishery. In November there were 14 vessels (1 pot and 5 longline off Oregon; 3 pot, 3 longline, 1

cargo, and 1 tanker off California). In December there were 13 vessels (1 pot and 3 longline off Oregon, and 6 pot and 2 longline off Oregon, and 1 cargo vessel serving both areas).

Taiwanese Longlining

The Taiwanese operated 1 to 2 longline vessels for sablefish from January, through mid-May and from October through November: 1 vessel off Oregon in January; 2 off Washington until mid-February; 1 off Washington from March through mid-May; and 1 off northern Washington in October and November.

OBSERVATIONS ABOARD A POLISH STERN TRAWLER

Paul Hirose of the Oregon Department of Fish and Wildlife was an observer aboard the Polish stern trawler *DENEbola* from August 6 to 31, 1976 between 43° to 44° north longitude and 25 to 30 nautical miles west of Cape Argo and Coos Bay, Oregon. During that period he sampled about 30% of the total 1,055-m.t. catch from 99 tows. About 95% of the observed catch was Pacific hake, 4% jack mackerel, and the remaining 1% was primarily rockfish.

The incidental catch of salmon, Pacific ocean perch, and halibut was minimal. He observed 139 salmon (137 chinook, totalling about 620 kg round weight, and 2 coho). No halibut were seen and only 228 Pacific ocean perch were noted. The incidence of salmon and ocean perch in the catch was 0.43 salmon per m.t. and 0.72 ocean perch per m.t. Only 4 salmon were alive when released; most, except for a few kept for the "Captain's table", were returned to the ocean. About 50% of the salmon were caught in 2 widely separated tows.

Hirose enjoyed the experience and found the officers and crew courteous and very helpful. The *DENEbola* is 2,660 gross tons and 88.3 m long with a 3,600-hp diesel engine. The vessels complement was 14 officers and 68 crew, including 4 processors only.