

Calif.; *Murre II* of Auke Bay, Alaska; *Oregon* of Kodiak, Alaska; and *John N. Cobb, Davidson, Fairweather, Miller Freeman, McArthur, Oceanographer, Rainier, Surveyor, and Discoverer*, all Seattle-based.

NOAA Creates Office of Marine Minerals

An Office of Marine Minerals has been established in the Department of Commerce's National Oceanic and Atmospheric Administration, Secretary of Commerce Rogers C.B. Morton has announced. "The development of marine mineral resources of the deep ocean and of the continental shelf will become increasingly important to the economic well being of the United States," Secretary Morton said. "This must be done in an environmentally sound manner and in a way that permits U.S. industry to move into this activity in an efficient way. To do this, NOAA is embarking on an expanded program which will bring together the broad capabilities of NOAA."

The new office reports to the Associate Administrator for Marine Resources. It serves as a focal point for NOAA's new and expanding programs in marine minerals. It has planning, coordinating, and certain operational responsibilities. It will also facilitate liaison with other Federal agencies. Amor L. Lane was designated Acting Director of the Office, which began functioning immediately. Lane was head of the Non-Living Resources activities in NOAA's Office of the Associate Administrator for Marine Resources. He continues to serve as Executive Secretary of Commerce's Marine Petroleum and Minerals Advisory Committee.

The major new effort to be launched is the Deep Ocean Mining Environmental Study (DOMES) to be conducted in FY 1976 for which \$3 million was included in NOAA's predicted budget. This study will assess the pre-mining environment of selected manganese nodule mining areas in order to be able to predict the potential environmental consequences of deep ocean mining. Manganese nodules—rich in manganese, nickel, copper, and cobalt—cover large areas of the ocean floor.

In addition, in FY 1976 mineral resource-related programs will be spon-

sored by NOAA's Office of Sea Grant at a level of approximately \$750,000 (with matching funds included).

NOAA was assigned marine mining responsibilities through the transfer of the Bureau of Mines' Marine Minerals Technology Center (MMTC) from Interior to NOAA when NOAA was established in 1970. MMTC's functions were transferred in 1973 to NOAA's Pacific Marine Environmental Laboratories in Seattle, Wash.

Foreign Fishery Developments

Canadian Officials Reject Unilateral Extension of 200-Mile Economic Zone

Canadian Prime Minister Pierre Trudeau held a press conference on 7 August and spoke against a Canadian unilateral extension to a 200-mile Economic Zone, according to the Office of International Fisheries, National Marine Fisheries Service, NOAA. Trudeau said: "Canadians at large should realize that we have very large stakes indeed in the Law of the Sea Conference and we would be fools to give up those stakes by an action that would be a purely temporary, paper success. . . . We would have to go to war to impose our unilateral action if we couldn't negotiate it in an acceptable way." On another subject, Trudeau also reiterated his government's commitment to the idea of free trade and to the Economic Council of Canada's recommendation that the country lower its trade barriers.

Iceland Extends Fishery Limits to 200 Miles

Icelandic fishery limits were extended to 200 miles on 15 July 1975 and the new law entered into force on 15 October, according to the U.S. Embassy, Reykjavik. Iceland extended its jurisdiction to 50 miles in 1972, and hoped that the latest extension will further protect its major resource (75 percent of Iceland's foreign exchange comes from the fishery exports). Since the country's imports are equal to about 50 percent of its Gross National Product (GNP), the exchange it receives from fish exports is essential to the economy. The Government of Iceland

Prior to working with NOAA, Lane was Director of Planning for Marine Activities for AMF, Inc., Executive Secretary of the Governor of Delaware's Task Force on Marine and Coastal Affairs, staff member of the Stratton Commission on Marine Science, Engineering and Resources, and Chairman of the Executive Committee of the NSIA Ocean Science and Technology Advisory Committee (OSTAC).

Former Newfoundland Premier Joseph R. (Joey) Smallwood began a cross-country speaking tour to support an extension of the Canadian fishing zone to 200 miles. Smallwood claimed his mission was nonpartisan, but he had recently founded the Liberal Reform Party, and he may find political success in the issue of extended jurisdiction.

The Canadian press gave good coverage to Secretary of State Kissinger's speech against U.S. unilateral extension. The lead editorial of the 13 August *Montreal Star* strongly supported the Secretary's position: "In more ways than one, Henry Kissinger's address this week to the American Bar Association underlined the wisdom of the Canadian Government's refusal to impose unilaterally a national economic zone 200 miles out to sea."

claimed that the country's fish stocks could no longer support fishing by foreign fleets, and that the Icelandic fishing fleet is capable of fully utilizing the resource. Iceland therefore extended its jurisdiction.

The new law specifies the precise limits of the 200-mile boundary, and allows for the areas between Iceland and Greenland and the Faroe Islands, when those coasts are separated by less than 400 miles, to be demarcated by an equidistant boundary. Further specific regulations and restrictions to both foreign and Icelandic vessels in certain

areas and at specific dates are listed in the new regulations.

The Government of Iceland hoped that extended jurisdiction would help the fishing industry, which continued to be depressed. Having greatly over-extended itself, the industry hoped to improve its position by early 1976. The outlook for 1975, however, was unpromising. From January through April, fishery catches declined except for demersal catches by stern trawlers. The total catch was only 1.4 percent higher than during the same period in 1974, and rising fuel costs have dramatically affected profits. In addition, a strike by the stern trawler workers which ended 13 June also affected the industry. Tables 1, 2, 3, and 4 show total catch from 1972-1974, and list exports by destination and species. Further statistics for the Icelandic fishing industry may be obtained by mailing a pre-addressed envelope to R. V. Arnaudo, International Fisheries Analysis Division, NMFS, NOAA, Washington, DC 20235.

Table 1.—Iceland's fish catch¹, 1972-74, in thousands of metric tons.

Species	Catch		
	1972	1973	1974
Ling	7	4	4
Cod	229	236	239
Haddock	30	35	33
Saithe	60	57	65
Ocean perch	33	29	37
Plaice	5	4	4
Greenland halibut	6	3	4
Other demersal	25	21	27
Total demersal	395	389	413
Herring	41	43	40
Capelin	277	442	465
Lobster	4	3	2
Shrimp	5	7	6
Scallop	7	5	3
Other	6	12	9
Total	735	901	938

¹Source: Statistical Bureau of Iceland.

Venezuela Offers to Purchase Fishing Fleet

The Venezuelan Agriculture and Livestock Ministry has initiated negotiations with the Venezuelan Federation of Trawler Fishermen (AVINCASA) for the purchase of their vessels, cold storage, and related facilities, according to the U.S. Embassy in Caracas. The Government reportedly offered the

Table 2.—Icelandic exports of fish and shellfish¹, 1973-1974 (whale products included).

Product	1973			1974		
	Metric tons	M. Kr.	US\$1,000	Metric tons	M. Kr.	US\$1,000
Salt and dried fish	37,434	3,349	40,060	41,408	6,695	66,950
Fresh herring	42,787	1,027	12,284	38,984	1,082	10,820
Fresh fish, other	17,925	572	6,842	17,133	724	7,240
Frozen fillets	63,698	7,013	83,888	59,996	8,141	81,410
Frozen fish, other	24,336	900	10,766	24,812	1,458	14,580
Frozen lobster	665	382	4,570	672	469	4,690
Frozen shrimp	1,421	557	6,663	1,135	542	5,420
Frozen scallops	505	177	2,117	357	115	1,150
Canned fish	1,751	294	3,516	1,621	491	4,910
Cod meal	26,316	1,110	13,277	22,613	877	8,770
Capelin meal	63,467	2,376	28,433	58,237	2,348	23,480
Fish meal, other	4,718	217	2,596	2,078	66	660
Fish oils	23,730	467	5,586	28,567	1,078	10,780
Other	17,026	749	8,959	7,350	501	5,010
Total	325,779	19,190	229,557	304,963	24,587	245,870

¹Source: Statistical Bureau and Embassy estimates.

²Rates of exchange: 1973 \$1 = 83.60 lkr. (this figure varied; e.g., in June \$1 = 91 lkr.); 1974 \$1 = 100 lkr. (avg. annual rate).

Table 3.—Icelandic exports of fish and shellfish to the United States, 1973-1974.

Product	1973		1974	
	Metric tons	\$1,000	Metric tons	\$1,000
Frozen fillets, blocks	51,161	73,409	42,876	62,700
Frozen lobster, nephrops	356	2,763	499	3,870
Frozen scallops	506	2,105	356	1,150
Other	1,851	1,770	2,593	3,039
Total	53,873	80,047	46,324	70,759

Table 4.—Icelandic exports of fish and shellfish¹ by major destination, 1973-74.

Destination	1973				1974			
	1,000 kg	%	\$1,000	%	1,000 kg	%	\$1,000	%
West Germany	32,780	10	17,057	8	29,831	9	13,340	5
EC (6 other)	31,030	10	19,509	8	14,157	5	13,770	6
Subtotal	63,810	20	36,566	16	43,988	14	27,110	11
United Kingdom	37,179	11	20,335	9	21,371	7	11,240	5
Denmark	59,699	18	38,696	16	48,998	16	15,850	6
EC ² (9)	160,688	49	95,597	41	114,357	37	54,200	22
United States	53,873	17	80,047	35	46,324	15	70,579	29
USSR	12,144	4	7,846	3	26,678	9	21,160	9
Other	99,174	30	46,016	21	117,605	39	99,761	40
Total	325,879	100	229,506	100	304,964	100	245,700	100

¹Source: Statistical Bureau and Embassy estimates.

²Includes exports to Ireland.

owners between 400 and 500 million Bolivares (US\$93-116 million). The action was ordered by President Carlos Andres Perez at the request of the vessel owners. Over 400 trawlers had been tied up to protest a Government conservation measure which prohibited trawling within 6 miles of the coast. The Venezuelan press speculated that the owner's lockout was a bluff and the Government's offer to buy them out has called their bluff.

Negotiations between the Venezuelan Government and the representatives of AVINCASA continued, while the trawler owners resumed oper-

ations, scrupulously observing the 6-mile regulation by not engaging in fishery operations between the Venezuelan coast and the 6-mile line. Informed observers asserted that issues other than outright purchase were discussed and speculated that one possible solution might be Government credits to the fishing industry to enable the trawler owners to modernize their vessels. This would make it possible for them to operate profitably farther from the coast than before. It was estimated that such a scheme required an investment of between US\$30,000 and US\$40,000 per craft.

EC Temporarily Suspends Some Fish Tariffs

Due to low production and high prices the EC (European Economic Community) Council temporarily suspended the autonomous Common Customs Tariff duties on several fishery products on 19 June 1975. The new rates are listed in Tables 1, 2, and 3. Table 1 suspensions are applicable from 1 July 1975 to 14 February 1976 and from 16 June 1976 to 30 June 1976. Suspensions

listed in Table 2 are applicable from 1 July 1975 to 30 June 1976 and in Table 3 will be applicable from 1 September 1975 to 31 March 1976.

For additional information, please contact Fred Olson, Special Assistant for Economics, Office of International Fisheries, NMFS, NOAA, Commerce, Washington, DC 20235; Telephone 202-634-7307.

Table 1.—Suspensions from 1 July 1975 to 14 February 1976.

CCT heading No	Description of goods	Rate (%) of autonomous duty
ex 03.01 B I m) 2	Mackerel, fresh, chilled or frozen, whole, headless, or in pieces, intended for the processing industry ¹ .	15

¹This suspension is subject to conditions to be determined by the competent authorities.

Table 2.—Suspensions from 1 July 1975 to 30 June 1976.

CCT heading No	Description of goods	Rate (%) of autonomous duty
03.01 A I b)	Salmon, fresh (live or dead), chilled or frozen.	0
ex 03.01 B I e)	Piked dogfish (<i>Squalus acanthias</i>), fresh, chilled or frozen, whole, headless, or in pieces.	0
ex 03.01 B I g)	Black halibut (<i>Hippoglossus reinhardtius</i>), fresh, chilled or frozen, whole, headless, or in pieces.	0
ex 03.01 B I q)	<i>Sardinops sagax</i> , <i>sardinops ocellata</i> (pilchards), fresh, chilled or frozen, whole, headless, or in pieces, intended for the processing industry ¹ .	8
ex 03.01 B I q)	Sturgeons, fresh, chilled, or frozen, whole, headless, or in pieces, intended for the processing industry ¹ .	8
ex 03.01 C	Roes, fresh, chilled, or frozen.	0
ex 03.02 A I c)	Anchovies (<i>Engraulis</i> spp.) salted or in brine, whole, headless, or in pieces, in barrels or other containers of a net capacity of 10 kg or more.	0
03.02 A I e)	Salmon, salted or in brine, whole, headless, or in pieces.	4
ex 03.02 A I f)	Sprats, salted or in brine, whole, headless, or in pieces.	0
ex 03.02 A I f)	Saithe (<i>Gadus virens</i>), salted or in brine, whole, headless, or in pieces.	7
ex 03.02 A II d)	Fillets of saithe (<i>Gadus virens</i>), salted or in brine.	7
ex 03.02 C	Fish roe, salted or in brine.	0
ex 03.03 A I	Tails of crawfish, chilled or frozen, shelled or not.	10
ex 03.03 B I b)	Oysters, fresh (living), weighing no more than 12 g each.	0
ex 03.03 B I b)	Oysters, fresh (living), of the ' <i>Crassostrea gigas</i> ' variety, weighing more than 100 g each.	0
ex 16.04 C II	Spiced and salted herrings, packed in barrels, intended for the processing industry ¹ .	12
ex 16.05 A	Crabs of the 'King,' 'Hanasaki,' 'Kegani,' and 'Queen' varieties, simply boiled in water and shelled, whether or not frozen, in packings of a net capacity of 2 kg or more, intended for the processing industry ¹ .	0
ex 16.05 B	Shrimps and prawns other than those of the ' <i>Crangon</i> ' variety, boiled in water and shelled, whether or not frozen, intended for the industrial manufacturers of products falling within heading No 16.05 ¹ .	10
23.07 A	Fish or marine mammal solubles.	2

¹This suspension is subject to conditions to be determined by the competent authorities.

Table 3.—Suspensions from 1 September 1975 to 31 March 1976.

CCT heading No	Description of goods	Rate (%) of autonomous duty
ex 03.01 B I d)	Sardines (<i>Clupea pilchardus</i> Walbaum), fresh, chilled or frozen, whole, of a length of 20 cm or more.	0

Panama Expects 1975 Shrimp Catch to Increase

Panamanian officials predicted increased shrimp landings in their country this year despite a low catch during the first of the year, according to the U.S. Embassy, Panama. The February-March ban on shrimping during the crustacean's most rapid growth period was expected to result in a total 1975 catch estimated at 600 metric tons larger than the 1974 take of 5,300 tons. Most of the increased landings were white shrimp, which in 1974 amounted to 1,300 tons, or about 25 percent of the total shrimp catch.

Local inventories averaged about 175 tons, or half of the monthly exports. Panama exports shrimp to the United States only and the volume of trade in 1975 may approach the 1970 level of 5,000 tons, up from 4,400 tons in 1974.

Iran and Korea Sign Fisheries Agreement

The Director General of the Office of Fisheries of the Republic of Korea (ROK), Yong Soon Kang, and the Chairman of the Board and Managing Director of the Persian Gulf Fisheries Company of Iran, Esmail Riahi, held a series of meetings in Tehran, Iran 26-28 May 1975 to discuss the implementation of a Memorandum of Understanding which was signed in Seoul on 22 January 1975, according to the Office of International Fisheries, National Marine Fisheries Service, NOAA. As a result of the meetings, another memorandum was signed on 28 May 1975 in which Korea and Iran pledged further cooperation in fisheries and planned specific technical training programs.

Both governments noted the progress of the joint fishing venture between the Sail Fisheries Company and the Persian Gulf Fisheries Company, under which ROK has agreed to send two stern trawlers and two tuna longliners to Iranian waters for one year. In addition, Korea plans to accept 10 Iranian students to study fishery subjects (oceanology, marine biology, ichthyology, etc.) at the ROK National Fisheries and Development Agency, or at the Pusan Fisheries College. The Republic of Korea has also agreed to train five Iranian captains and five engineers each

year for a period of 5 years. In both cases, expenses will be paid by Iran. Finally, Korea will send an unspecified number of fishery managers, technicians, engineers, and experts in ship repair and maintenance, marketing, fish processing, etc. to assist in the development of fisheries and to train personnel in Iran at Iran's expense. Both parties to the Memorandum also agreed to continue discussions on the use of port facilities and on trade promotion activities.

U.S. Officials Seize Cuban Shrimp Trawler

A Cuban shrimp trawler was seized 2 August 1975 by a U.S. Coast Guard/National Marine Fisheries Service (NMFS) enforcement patrol after she was observed with her trawl in the water within the U.S. Contiguous Fishing Zone (CFZ) off St. Joseph's Island, Tex., according to the Office of International Fisheries, NMFS. The vessel, the *E-82HB*, a 76-foot, E-class, Spanish-built trawler, was seized and towed to Corpus Christi, Tex. by the Coast Guard cutter *Point Baker*.

The Cubans did not resist arrest; however, under orders from Havana, the crew refused to haul in their outriggers and these had to be brought aboard by U.S. officials after the vessel anchored at Corpus Christi.

The Cuban master pleaded not guilty to the charges and waived his right to a jury trial. The case was transferred from Corpus Christi to the U.S. District Court in Houston where the master was found guilty. He was sentenced as follows: "Master may not enter the United States and may not engage in commercial fishing for one year." In the civil suit against the *E-82HB*, the vessel was found to have violated the CFZ and has been ordered forfeited to the United States. Arrangements were made for a Cuban vessel to repatriate the master and crew.

The last Coast Guard seizure of a Cuban fishing vessel, the *E-39SF*, took place near Galveston, Tex. on 28 July 1974. The master of that vessel was convicted of fishing in the United States' CFZ, put on probation, and fined US\$25,000. Additionally, in the civil suit against the *E-39SF*, the vessel was forfeited.

Indian Ocean Fisheries Commission Meets

The fourth session of the Indian Ocean Fisheries Commission (IOFC) opened in Mombasa, Kenya on 21 July 1975 with more than 60 top fishery officials from 15 member nations, observers from 2 FAO member nations, and observers from 5 international organizations attending, according to the U.S. Regional Fisheries Attache for Africa. Mathews Ogutu, Kenya's Minister of Tourism and Wildlife, noted a theme which was echoed by many of the delegates from the developing countries, saying, "I should like to emphasize that the main aim of technical assistance programs should be the transfer of technical know-how and expertise from developed nations to the developing countries."

A reply to the minister's speech was made by the Assistant Director General (Fisheries) of FAO, F.E. Popper, who noted the need for international cooperation in the Indian Ocean, especially in view of expected changes in fishery regimes following future law of the sea talks.

The sessions were chaired by Norbert Otero, Kenya's Director of Fisheries. The first item discussed was statistical reporting. It was agreed that catch data, starting in 1975-76, would be broken down by subareas and divisions in accordance with a standardized Indian Ocean species list. Training programs for statisticians were announced.

Present and future FAO coastal aquaculture programs were examined and endorsed. The establishment of regional coastal fish culture centers, sub-regional training centers, as well as research into the viability of coastal aquaculture, was proposed.

The international Indian Ocean fishery survey/development program budget has increased from U.S. \$2 million in 1973 to US\$4.2 million in 1975. The work of the program is changing from basic studies to survey and development. Major resource surveys are underway in the Arabian Sea, off the East African coast, in the Indonesia-Australia area, and in the Bay of Bengal. Sweden (SIDA) is now studying possible participation in the program in the Bay of Bengal, and a decision is expected in 3 months. A research cruise report in Kenya-Somalia waters and

in the Arabian Sea by the Norwegian (UNDP/NORAD) research vessel *Dr. Fridtjof Nansen* was discussed. The report pointed out the need to translate scientific data into increasing catches. East African delegates welcomed a report on an FAO/USSR research cruise between Somalia and Madagascar planned from November 1975 to November 1976 by the research vessel *Prof. Mesiatsev* (3,000 GRT) with a crew of 65 and 23 scientists. The vessel will be based in Mombasa. In addition to FAO scientists, 10 local scientists will participate on one of four 75-day cruises. The Commission also examined the need for additional training courses which would follow fishery surveys, and the need to shorten the time lag between both was stressed.

In the session on the state of fishery stocks and management, a Tuna Management Committee report was adopted. Coastal shrimp stocks were reported heavily fished now, but deep-water shrimp stocks had good potential. Management measures are of great importance. An ad hoc group was established to meet at the end of 1975 to examine this resource and report its findings to IOFC. Possible development of an oil sardine fishery was examined, and no management problems were expected with it.

The importance of small-scale fisheries was strongly stressed by many participating countries which indicated a need for multi-aspect development programs from research to fishing, landings, ports, processing, cold storage, transportation, marketing, and consumption. The role of national governments in training fishermen, establishing cooperatives, etc., was stressed. Developing nations agreed on the need to translate scientific research into increased catches.

A need to improve cooperation with other fisheries bodies was also noted. Assistance in statistical work and training programs from the International Commission for the Conservation of Atlantic Tunas and the Inter-American Tropical Tuna Commission was acknowledged, and the possibility of establishing an international fisheries body for the Western Pacific was discussed. The need to protect coastal

waters from oil pollution was examined and the Secretariat was requested to investigate methods of solving this problem in the Western Indian Ocean. The Committee on Management of Persian Gulf Shrimp was abolished and its activities taken over by the Committee for Development and Management of Fishery Resources of the Gulf.

The delegates elected Kenya's Norbert Odera Chairman of the forthcoming 5th Session of the IOFC. P.C. George (India) was elected the first vice-chairman. Elected to the Executive Committee of the IOFC were the United States, Australia, Indonesia, Japan, Mauritius, Qatar (not present), Sweden, and Tanzania.

Poor Shrimp Season Felt in Nicaragua

Nicaragua's shrimp catch for the first 3 months of 1975 was down significantly from 1974, and the overall consensus within the shrimp industry was that the total 1975 catch will be well below that of last year's, according to the U.S. Embassy, Managua, Nicaragua.

Month	Nicaraguan shrimp catch (x 1,000 lb.)	
	1974	1975
January	973.1	534.5
February	580.7	412.5
March	537.8	448.5

By mid-June 1975, shrimp landings were well below the corresponding levels of 1974, according to shrimp industry sources. The three shrimp companies fishing in the Pacific reported a slight improvement in the last 2 weeks of June, but it was too early to tell if this trend would last or whether this was only a temporary improvement in what had so far been a disastrous season. Changes in marine currents, the pollution of bays and inlets with insecticides, a decrease in plankton caused by low rainfall along the coast, and overfishing are given as reasons for the year's reduced catch. No scientific data, however, were available to support any one of these theories. Nicaragua exports from 80 to 85 percent of its shrimp catch, all of which goes to the United States. The shrimp fishing and processing companies are entirely oriented to the U.S. market.

The Nicaraguan shrimp industry finds itself in a very bad financial state.

Prices have been decreasing since 1973, particularly for small and medium shrimp. About 70 percent of Nicaragua's shrimp catch comes from the Caribbean, where average shrimp size is smaller. Costs have increased sharply. Productivity has been continually declining and a further decline

Productivity of Nicaraguan fishing vessels (in pounds of shrimp per hour of fishing).

Year	Atlantic coast	Pacific coast
1970-71	33.5	15.1
1971-72	28.3	11.2
1972-73	25.2	10.3
1973-74	19.1	n.a.

was reported for the 1975 season. Discussions were underway to limit the number of vessels operating in Nicaraguan waters.¹ Their number has been steadily increasing over the past 10

Number of shrimp vessels in Nicaraguan waters.

Year	Atlantic coast	Pacific coast
1965	38	12
1975	115	53

years, but a number of independent fishing vessels will probably be sold and/or withdrawn from Nicaraguan fishing waters if the catch remains poor for the rest of the year.

ICSEAF Slates Check of Trawler Net Mesh Sizes

The International Commission for Southeast Atlantic Fisheries (ICSEAF), an organization formed in 1974 to control and protect bottomfish stocks in the Southeast Atlantic, has announced that it will begin checking the mesh size of nets used by trawlers, according to a report in *The Argus*, Cape Town, South Africa. ICSEAF member countries—Belgium, Bulgaria, Cuba, East Germany, France, Japan, Poland, Portugal, South Africa, and the USSR—agreed upon a minimum mesh size of 110 mm in 1974 and the Commission will start inspecting vessels operating outside territorial waters.

Each ICSEAF signatory will provide vessels and inspectors. The inspection vessels will fly a special identification

¹On 5 April 1975, Executive Decree I-L established a 200-nautical mile exclusive fisheries zone.

pennant, and the inspectors will carry identification cards which will allow them to inspect the nets of vessels of any of the other ICSEAF member countries. Inspections cannot take place, however, while a vessel is hauling her nets, or when an inspection would interfere with fishing operations.

Ecuador Records Big 1975 Shrimp Catches

Ecuadorian shrimp landings in the first quarter of 1975 (January-April) were 10-20 percent higher than in 1974, the U.S. Consulate in Guayaquil reports. Beginning in May, landings skyrocketed as the shrimp fleet brought in loads as high as 3,000-4,000 pounds per vessel compared with only 1,500 pounds per vessel the year before. The excellent catch is attributed, at least in part, to the beneficial effects of abundant winter (December-April) rains.

Almost all of Ecuador's shrimp exports have gone in recent years to the United States, and it is believed that an estimated 95 percent would go there in 1975. And although a new Fishing Law has required local producers to sell 20 percent of all shrimp landings on domestic markets, some company owners predicted that 1975 exports would still be almost twice as large as the 1974 exports.

Ecuadorian consumers reportedly will be served early and late in the year when smaller shrimp are harvested, while foreign markets will receive most of the landings during peak production periods in mid-year when the best and largest shrimp are caught. Ecuador's producers, however, are still dissatisfied with the 20 percent quota because export prices are higher. Nevertheless landings this year are expected to be so good that bountiful exports are practically assured. To process all the catch, for example, large plants are currently working overtime and occasionally on weekends.

In fact, Ecuador's shrimp exports in 1975 may be 60 percent higher than they were in 1974, when, due to light rainfall and low prices abroad, exports were at a disappointing 5.9 million pounds. Some company owners confidently predicted that their exports would almost double those in 1974. These predictions may be exaggerated hopes of businessmen who

lost money last year. However, the high catches in the key months of May and June indicated a bright outlook for the remainder of the year. A reasonably conservative guess was that Ecuador would export at least 8 million pounds of shrimp in 1975 and possibly as much as 10 million pounds, thereby exceeding the record 9 million pounds of 1969, as shown in the table below.

Ecuadorian shrimp exports in millions of pounds, 1969-75.

Year	Exports
1969 (record year)	9.0
1973	8.2
1974 (unofficial)	5.9
1975 (projected)	8-10

Hatcheries and pond growers have also entered into the Ecuadorean shrimp picture for the first time in numbers. They were expected to produce 250,000 pounds in 1975. The impact of these hatcheries on total production will remain small for the foreseeable future. Their expansion, however, has caused a stir among the large, traditional shrimpers who claim that ponds prevent the shrimp from migrating back into the ocean where an important part of the reproduction process takes place and thereby will eventually destroy shrimp fishing along the coast where they are located. But these experiments in controlled production have strong backing and it remains to be seen if the Government will do anything about them.

Iraq, USSR Establish Joint Fishing Group

Iraq and the Soviet Union have formed a joint fishing company in accordance with a fisheries cooperation protocol which Iraq ratified on 1 July 1975. The company will be known as Ar-Rafidayn Fish Company, Limited, the Iraqi News Agency reported.

Soviet-Iraq fisheries cooperation began in 1969 with an agreement signed in Moscow. The USSR promised to: 1) supply Iraq with fishing vessels, processing and storage facilities, technical aid; 2) help develop Iraqi ports; and 3) train Iraqi fishermen and technicians. A Joint Commission was also formed.

The agreement, signed at the close of the Second Session of the Joint Com-

mission in September 1973, provided for the establishment of the joint fishing company. Iraq may also join the Persian Gulf Regional Center, a fisheries technology training center to be established in Kuwait in accordance with an agreement signed on 17 June 1975 by Kuwait, Saudi Arabia, Qatar, the United Arab Emirates, and Iran.

Mexico's 1975 Shrimp Landings Show Increase

Mexican fishermen landed 14,433 metric tons of shrimp in the first 5 months (January-May) of 1975, almost 9 percent more than the 13,242 metric tons landed during the comparable

Table 1.—Mexican monthly shrimp landings in 1975, actual and projected, in metric tons.

Actual landings ¹		Projected landings	
January	4,403	July	1,400
February	2,940	August	1,500
March	2,472	September	4,500
April	2,318	October	10,000
May	2,300	November	6,500
June	1,617	December	6,000
Total	16,050	Total	29,900

¹Preliminary data.

period in 1974, according to the U.S. Embassy in Mexico City. The total Mexican shrimp landings for 1975 were projected at nearly 46,000 metric tons (Table 1). About 80 percent of all Mexican shrimp landings are exported to the United States.

Fishery Notes

Salmon Side-Scanning Sonar Counter Tested

A new type of sonar salmon counter was recently tested by the Alaska Department of Fish and Game, Division of Commercial Fisheries, in conjunction with Bendix Corporation of California.¹ Tom Namtvedt, commercial fisheries research biologist, reported that tests were conducted over a 3-day period in the Kenai River near Soldotna where salmon counting is complicated by heavy glacial silt. Namtvedt stated that the counter was initially devised to determine the horizontal distribution of sockeye salmon smolt in streams. Initial tests with the prototype during 1974 in the Kenai River and at Kodiak indicated that the unit was also usable for counting adult salmon.

The new counter, known as the side scanner, employs one narrow-beam, horizontal-looking transducer which sends a sound through the water and "listens" for the echos made by passing fish. The echos can be recorded on magnetic tape and the image printed out on paper tape for additional analysis. The side scanner was installed in the Kenai River near the 30-transducer adult salmon counter that has been used for several years to count sockeye salmon escapement. In three 2-hour tests, a 96 percent correlation between the two independent systems was ob-

served, giving verification to the counts made with the standard adult system. Spot checking was continued, Namtvedt said, to maintain a measure of count accuracy during the sockeye migration.

Use of the side scanner to count or verify counts of adult salmon escapement over a much wider range of situations than previously possible will enable the department to better evaluate the annual spawning population in Cook Inlet. Accurate escapement enumeration is essential to fisheries management, but before the development of sonar counters, it was not possible in large muddy rivers of the type encountered in Cook Inlet and elsewhere in Alaska.

The original 30-transducer counter is limited in its application to certain stream types and fish migration characteristics. The side scanner promises to be more adaptable and if not replacing the original sonar array will at least expand counting capability to many new river systems.

Escapement information is used in managing the fisheries to achieve the proper balance between catch and escapement to insure the productivity of future runs while giving maximum allowable benefit to the fishermen. Escapement information may also be used to forecast the size of future returns. The side-scanning unit is also being

¹Mention of trade names does not imply endorsement of commercial products by the National Marine Fisheries Service, NOAA.