resource surveys indicate a species has elevated levels of an element, additional samples will be analyzed to obtain information necessary to define the extent of the problem and to develop a working plan to manage it. When the resource survey is completed, more than 10,000 samples of over 200 species will have been examined for mercury, lead, nickel, manganese, silver, chromium, copper, zinc, cadmium, molybdenum, vanadium, antimony, tin, arsenic, and selenium. The interim report provides data on nine of these elements in 2,400 samples.

Some preliminary trends are given for 7 of the 9 microconstituents. Over one-half of the samples analyzed and assembled for the report had mean mercury values below 0.1 ppm. Except for some species of mollusca, mean cadmium levels were below 0.3 ppm. Muscles of all finfish reported had mean silver levels below 0.05. The majority of the muscle samples from finfish fell between 0.1 and 0.6 ppm of copper, 2.0 to 6.0 ppm of zinc, 0.1 to 0.3 ppm of nickel, and 0.1 to 0.2 ppm of manganese. There do not appear to be any problems with fish and shellfish in regard to the elements analyzed.

A copy of the interim report on the resource survey is available from the Director, National Marine Fisheries Service, NOAA, Washington, DC 20235.

Foreign Fishery Developments

International Recession Hurts Norwegian Fishing Industry; Some Cutbacks Are Seen

Fishing was the first Norwegian industry to become noticeably affected by the current international recession. Despite general optimism in industry circles at the beginning of 1974, prices and demand in major foreign markets started to fall early in the year, and significant improvement was not then in sight. Four major fish product categories—frozen fillets, fish meal and oil, and canned fish—have been particularly exposed to declining demand and/or prices, but practically all of Norway's exports of fish products are faced with depressed market conditions.

Furthermore, the short-term outlook for the Norwegian fishing industry was not very promising. Foreign markets—which normally absorb about 85 percent of the fish catch—were generally weak, prices were low, industry stocks of fish products were accumulating, and there were few signs of an early recovery. Fishery catch statistics early in 1975 disclosed substantial reductions compared with 1974. Yields of all three major seasonal fisheries concluded in the first half of 1975 were lower than in 1974. Spawning cod and Finnmark young cod fishing, Norway's two major seasonal demersal fisheries, resulted in total landings of 76,100 tons and 25,300 tons, respectively, or 18 percent and 26.5 percent below 1974. Poor weather conditions in January-February reduced the total 1975 catch of winter capelin by 25 percent to 5.6 million hectoliters (543,000 tons) despite the absence of the catch limitations which were in force the previous year. All but a fraction of the catch (about 4,300 tons of frozen roe capelin which was shipped to Japan for human consumption) was delivered to the reduction industry. The total supply of fish raw stock to the fish meal and oil industry (which includes Norway pout and sandeel) during the first 5 months of 1975 was 7 million hectoliters (660,000 tons) or 25 percent less than corresponding 1974 supplies.

The value of Norway's fish exports fell nearly 25 percent to $145 million in January-March, compared with the first quarter of 1974. There were some reductions in export volume, but the bulk of the decrease was accounted for by lower prices received for fish products. Average export prices for two major products, frozen fish fillets and fish meal, were, for example, 21 percent and 51 percent lower in January-March 1975 than in the corresponding 1974 period. Brisling sardine export prices rose 13 percent, but export volume fell to 55 percent of 1974 levels, mainly because of sharply reduced deliveries to the United States, Norway's major market.

As a result of these developments, Fisheries Director Knut Vartdal recommended the reduction of the domestic purse seine fleet, which was then composed of 300 vessels, by about 100 vessels. Prospects for purse seining for North Sea herring and mackerel are poor for the next few years. Director Vartdal also suggested that a Norwegian-Soviet catch quota agreement for capelin might be necessary, since the Soviet Union has begun to exploit that stock heavily.

The Ministry of Fisheries has responded to the crisis by increasing government support for the industry. Over $90 million in subsidies, loans, and support was granted in the first half of 1975, compared with US$37 million in 1974. In addition, the plan to extend fishing limits to 50 miles in 1975 appeared to have been abandoned. Law of the Sea Minister Jens Evensen in an address to Parliament warned against unilateral measures, but at the same time, spoke about the eventual establishment of a 200-mile economic zone.

Source: U.S. Embassy, Oslo.

Polish Fish Catch off U.S. West Coast Noted

Polish fishermen caught over 36,000 metric tons off the U.S. Pacific coast during the first 6 months of 1975. This area includes waters off the States of Alaska, Washington, Oregon, and California.

In January and February, two Polish stern trawlers fished for Pacific cod and other species (walleye pollock, Atka

Polish fisheries catch off the U.S. Pacific coast (January-June 1975).

Species	Quantity (metric tons)
Pacific hake	30,160
Pacific ocean perch	2,010
Horse mackerel	961
Pacific cod	791
Walleye pollock	631
Atka mackerel	619
Pacific herring	268
Arrowtooth halibut	67
Pacific halibut	31
Other (unspecified)	1,049
Total	36,587

Source: Morski Instytut Rybacki, Gdynia, 30 June 1975.

mackerel) on Albatross Bank in the Gulf of Alaska. One of these vessels continued fishing until mid-March and then departed the area, the other vessel having already left at the end of February.

The Pacific hake fishery, which began off the California coast near San Francisco in March brought the largest catch (see table). Eight stern trawlers caught a total of 4,169 tons during that month. Hake catches greater than 8,000 tons were recorded for April, May, and June, as the Polish fleet, fluctuating between 10 and 13 stern trawlers, continued fishing off California. The hake fleet off California also included several refrigerated transport and processing vessels which remained at anchor near Los Angeles.

Although the 6-month hake catch reached 30,160 tons, this still represents a catch rate (tons/vessel day) more than 40 percent below the catch rate for 1974, indicating the serious overfished condition of the Pacific hake stock.

Mexico Readies a 200-Mile "Economic Zone"

Mexican President Luis Echeverría has reportedly decided to establish his country's jurisdiction over an "Economic Zone" extending 200 miles from the Mexican coast[1]. The surprise move was announced on 5 August by Mexican Foreign Secretary Emilio Rabasa who indicated that Mexico would have the exclusive right to the renewable and non-renewable resources in the water column and subsoil within the Zone. Rabasa is forming a committee composed of officials from the Navy, the Secretariat of Industry and Commerce (SIC)[2], and other organizations to study the matter.

President Echeverría announced during his State of Union Report on 1 September that his administration will submit amendments to the Mexican Constitution to create the Economic Zone. No indication was given on how soon the amendments would be submitted or when they would come into force[3].

The adoption of the 200-mile Economic Zone would place the entire Gulf of California (see map) under Mexican jurisdiction. A press report, however, indicated that President Echeverría has stated that special permits will be issued to foreign vessels wishing to fish there. The Gulf would also remain open to air and ship navigation and submarine cables. In the same article, President Echeverría stated that the Economic Zone "is not a territorial sea," but that Mexico will maintain economic control over all the waters within the 200 mile limit.

In the Gulf of California the major U.S. fishing operation is for tuna and it occurs at the mouth of the Gulf.

[1]The 200-mile Economic Zone includes a 12-mile Territorial Sea.
[2]The Mexican fisheries administration is a subsecretariat within the SIC.
[3]Although amendments to the Mexican constitution require a two-thirds vote by Congress and approval by a majority of state legislatures, this matter could be accomplished rapidly once the Government of Mexico decides to act.

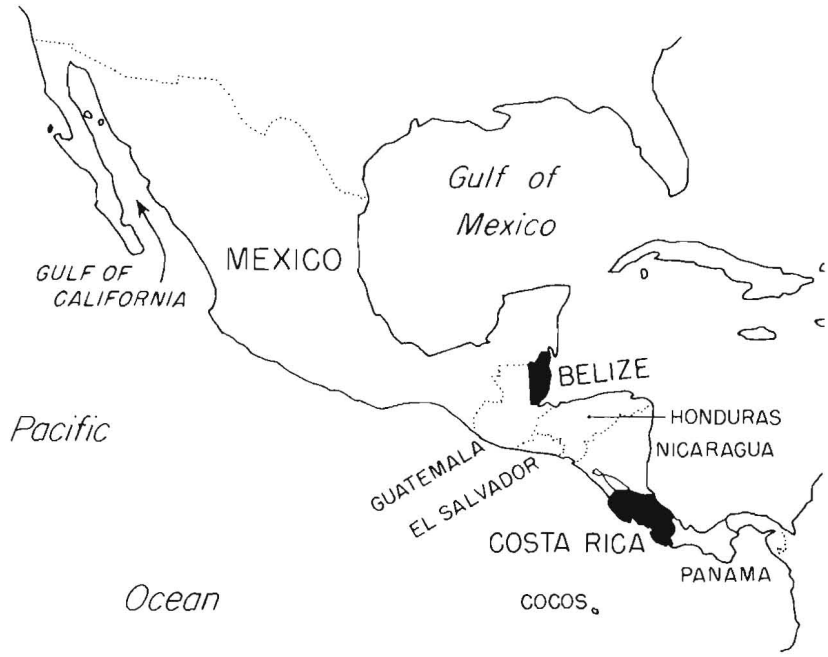
Costa Rica Claims a 200-Mile Tuna Limit

The Costa Rican Legislative Assembly has passed in first debate[1] a law which would regulate tuna fishing within 200 miles of the Costa Rican coast and 12 miles off Cocos Island (see map below), according to the U.S. Embassy in San Jose. The law would require all foreign vessels which plan to operate in Costa Rica's 200 mile "Patrimonial Sea" to register with the Costa Rican Government. The registration fee would amount to US$5 per ton of capacity per year. Additionally, each vessel would be required to obtain a fishing permit, valid for 60 days, for each fishing trip into the waters claimed by Costa Rica. The permits would cost US$30 per ton of capacity for vessels of 400 tons and less, and US$60 per ton for vessels over 400 tons.

There are a number of exceptions to the fees listed above. Fees for vessels using live bait and harpoons, instead of nets, would be reduced by 50 percent. Foreign vessels of less than 400 tons whose owners agree to turn over a minimum of 100 tons of their tuna catch to local canneries, would be granted a free extension of their fishing permit. The owners of foreign vessels who conclude regular contracts would be granted the same treatment as Costa Rican flag vessels (presumably they would not be subject to the registration and permit requirements). The crews of such vessels would have to be at least 75 percent Costa Rican.

The law would seem to assist two Costa Rican groups. The first is obviously the local tuna canners. The second is a regional university center, located near the Pacific port of Puntarenas, which will be the recipient of any funds collected by the imposition of fines, or the seizure of the catch.

[1]Measures before Costa Rica's unicameral legislature are debated and voted on three times before becoming law.



Mexico, Belize, Costa Rica, and neighboring countries.

Belizian Fisheries, Lobster Exports Grow

The fishing industry in Belize (see map, facing page) has expanded significantly since 1965, the NMFS Office of International Fisheries reports. According to FAO statistics, the fisheries catch has more than doubled from 800 metric tons in 1965 to 1,700 metric tons in 1973 (Table 1). With the exception of one year, the catch has increased every year since 1965 (Table 1). In 1973, there was a decline of 300 tons from the 1972 record catch of 2,000 tons.

The spiny lobster (*Panulirus argus*) is the principal species harvested by the Belizian fishermen, who landed 0.6 tons in 1973. Lobsters are caught between the coast and the barrier reef, which lies 10-20 miles offshore. The fishermen of northern Belize, using traps set in the thick *Thallasia* grass beds (prevalent in the coastal area north of Belize City), take 60 percent of the total lobster catch. South of Belize City, where the sea floor is rocky and barren, lobsters are caught by divers. Belizian officials feel that the spiny lobster population is adequately protected at present catch levels.

Belize's second most important seafood export is the queen conch (*Strombus gigas*). The conch inhabits both sandy and rocky areas as well as coral rubble, but it seems to prefer sandy bottoms with a growth of sea grasses. It is normally found in the protected shallow waters (30 feet or less) between the coast and the barrier reef. The greater recognition of conch meat as a desirable seafood increased the price of conch exports from US$0.16 in 1967 to US$0.39 per pound[1] in 1974. This increase in price has greatly intensified the fishing effort of conch fishermen. The completion of a cannery in Chetumal, Mexico, has further stimulated the conch fishery.

Over 6 million conchs were harvested for export alone in 1974, compared to only 0.5 million in 1965. The rapid expansion of effort has caused concern among government officials about a possible depletion of conch stocks by overfishing. Government officials cite the example of the virtual decimation of this species in the conch grounds of the Bahama Islands, which at one time covered an area 8 times larger than Belize's 2,500 square mile conch fishery area. The paramount concern to Belizian officials is the present selective harvesting of females (due to their larger size) which may seriously reduce the maximum sustainable yield.

[1]Seafood prices in the Belizian market are controlled by the government and tend to be well below the price obtainable in the export markets.

Table 1.—Belize fish catch in thousands of metric tons (1960-73), and fishery and lobster exports (1965-74) in thousands of U.S. dollars.

Year	Catch[1]	Fishery exports[2]	Lobster exports[2]
1960	0.9	—	—
1961	N.A.	—	—
1962	[3]1.0	—	—
1963	[3]1.0	—	—
1964	0.9	—	—
1965	0.8	$563.7	$524.0
1966	0.9	544.4	477.1
1967	1.3	743.3	495.6
1968	1.3	1,087.6	833.0
1969	1.6	1,323.3	1,012.8
1970	1.5	1,298.2	1,000.1
1971	1.8	1,684.3	1,191.1
1972	2.0	2,081.0	1,555.7
1973	1.7	1,622.7	1,128.4
1974	—	2,179.0	1,724.1

[1]Catch is listed in thousands of metric tons. Source: Yearbook of Fishery Statistics. FAO.
[2]Value listed in thousand of dollars (U.S.). Source: Fisheries Unit, Belize.
[3]FAO estimate.

Belizian fishery exports (by quantity) have more than doubled in the decade from 1965 to 1974. During the same period, the value of fishery exports almost quadrupled (Table 1). While exports amounted to only 735.6 metric tons in 1974, almost 30 percent of that amount consisted of highly priced lobster. Total seafood export earnings amounted to almost US$2.2 million, an increase of 380 percent over the US$0.6 million earned in 1965. The cash value of lobster exports has more than trebled during the past ten years, increasing from US$0.52 million in 1965 to US$1.72 million in 1974. The value of lobster exports has represented about 80 percent of the total average value of all Belizian fishery exports since 1965. This value fluctuated between a low of 67 percent in 1967 to a high of 93 percent in 1965.

The most rapidly increasing fishery export commodity has been the queen conch. In 1974, exports of almost 444 metric tons of conch earned US$384,500. This represents earnings more than 30 times larger than the US$12,600 earned by exporting 49 metric tons in 1965.

Japanese Arrested for Illegal Salmon Fishing Aboard Taiwanese Vessel

The Japanese captain and fishing master of a Taiwanese trawler were arrested at Ishinomaki, Japan, on 13 August 1975, by Japan's Maritime Safety Agency. The District Prosecutor's Office is investigating their alleged violation of a 1967 regulation which prohibits Japanese citizens from engaging in salmon fishing aboard non-Japanese vessels. The cases of the remaining Japanese crew members of the Taiwanese vessel, *Tai Chang No. 1*, are also to be sent to the Prosecutor's Office, reports the U.S. Embassy, Tokyo.

Captain Takahiro Abe and Fishing Master Toshiya Abe boarded the trawler *Tai Chang No. 1* in late June. This Taiwanese vessel engaged in salmon fishing in Bristol Bay during July, taking an estimated 150 metric tons. Both Japanese fishermen were arrested when the vessel entered the Japanese port in August. Japanese authorities did not permit the vessel to unload its cargo, which included salmon.

Japanese citizens are prohibited from engaging in salmon fishing aboard non-Japanese vessels by Article 102, Section 4, of the "Agriculture and Forestry Ministerial Ordinance Concerning Licensing and Enforcement of Designated Fisheries." This regulation followed complaints from Canada and the United States in 1965 that Japanese citizens were fishing for salmon from vessels registered in other countries. Japan, Canada, and the United States are parties to the International Convention for the High Seas Fisheries of the North Pacific Ocean (INPFC). Japan has agreed under this Convention not to fish for salmon east of long. 175° West, an area which includes Bristol Bay. Violations of Japan's 1967 Ordinance are punishable by imprisonment of up to 2 years or by fines of up to Yen50,000 (US$167).

The *Tai Chang No. 1* (904 GT) is owned by a Taiwanese company, Tai Chang, Inc., and is licensed by the Republic of China as an exploratory fishing vessel for the North Pacific. The vessel was built in a Japanese shipyard and its crew reportedly included 23 Japanese

and 7 Taiwanese nationals. In March and June 1975, the vessel was said to have entered the port of Ishinomaki, Japan, unloading each time 500 tons of fish including halibut, rockfish, Alaska pollock, and sablefish. When the vessel departed Ishinomaki on 22 June it reportedly had gillnet gear for salmon fishing on board.

In a further development of the case, three Japanese trading firms have also been referred to the Prosecutor's Office for investigation. The firms, Sasaki Takaaki Shoten, Toseki Shoji, and Tosho, allegedly remitted about Yen260 million (US$0.9 million) to Taiwan last year to finance illegal fishing operations in Bristol Bay. Checks were carried to Taiwan and allegedly given to the president of the Tai Chang company, owner of the vessel, in February and June 1974. Police reported that Kazuo Sasaki, managing director of all three firms, legally remitted $1.1 million between November 1973 and February 1974 for the stated purpose of opening a branch in Taiwan. Such a branch was not established and how the money was used is unknown. Some new reports indicate that the total of $2 million might have been used to finance illegal fishing operations, including wages for the Japanese crew members. Reliable sources report that Sasaki and T. Kanehiro, former business manager of the Tosho Company of Tokyo, were arrested by the Kanegawa Prefectural Police and that the case was referred to the Public Prosecutor's Office.

EEC Tariff Barriers Hit Iceland Fishing Industry

Iceland's fishing industry has been seriously affected by the European Economic Community's (EEC) failure to lift its import duties on Iceland's export products reports the NMFS Office of International Fisheries. The EEC and Iceland signed an agreement in July 1972, and tariffs were to be lowered in stages from 1 June 1973 to 1 July 1977. Tariffs range from 10 to 30 percent, and most were to be fully abolished. Tariffs on refrigerated fish and frozen whole fish were to decline by 75 percent, and tariffs on canned fish products by 50 percent (except the duty on caviar, and canned shrimp and lobster, which was to be completely eliminated).

However, no reductions have been implemented because of a dispute over West German fishing rights on the Icelandic fishing banks. *Morgunbladid*, a Reykjavik newspaper, recently estimated that the EEC failure to implement the tariff reductions has cost the Icelandic fishing industry 302 million Icelandic Kronur (about US$2 million) in 1974 prices.

For example, the EEC duty on lumpfish roe is presently 30 percent, resulting in an added tax of about US$0.16 on a 100-gram container of roe. Similarly, the duty on shrimp is about US$0.72 per kilogram, and on redfish, US$0.18 per kilogram. If these duties were eliminated or reduced, Icelandic exports to EEC would grow considerably (see table below).

Iceland fisheries exports[1] affected by EEC tariffs in 1974.

Product	Exports (metric tons)	Estimated increase[2]
Iced fish[3]	16,655.8	[4]119.4
Whole frozen fish[3]	221.0	2.0
Frozen fish fillets	1,575.5	38.9
Frozen shrimp	401.3	53.3
Roe, frozen	1,395.4	13.0
Herring fillets	N.A.	0.3
Kippers	N.A.	—
Caviar	N.A.	7.3
Cod roe	N.A.	0.3
Cod milt	N.A.	—
Codliver oil (cold processed)	209.6	1.0
Codliver oil	824.5	—
Industrial fish oil	437.7	—
Salted lumpfish roe	915.2	24.5
Roe for bait	1.4	—
Capelin oil	6,669.8	—
Redfish oil	256.4	—
Whale oil	4,072.7	—
Fishmeal	34,408.4	38.3
TOTAL	68,044.7	302.2

[1]Source: *Morgunbladid*, 11 July 1975.
[2]Estimated trade increase if tariff reductions were implemented.
[3]Cod, haddock, coalfish, redfish.
[4]Million Icelandic kronur (152 kronur = US$1.00).

Shrimp exports to the United Kingdom, which has been the main market area for that product, have seriously declined, and producers are faced with accumulating stocks.

Iceland has signed agreements with the United Kingdom and Belgium on fishing rights within Iceland-claimed fisheries jurisdiction, but it has not yet reached an accord with the Federal Republic of Germany. As a result, German authorities have banned the landing of fresh fish by Icelandic vessels in German ports, and the EEC barriers remain.

PRC, Japan OK Fishery Pact; ROK Objects

Representatives of the Governments of Japan and of the People's Republic of China (PRC) signed in Tokyo on 15 August 1975, a Fisheries Agreement concerning fishing operations in the Yellow Sea and the East China Sea. This Agreement was envisioned in the Joint Declaration made in September 1972 when formal relations between Japan and the PRC were restored. Negotiations have been prolonged by unresolved respective positions about territorial limits, China's "military warning line," and fishing rights. The governmental Agreement replaces a "private" agreement between China and Japan which has existed since 1955 and is to expire in December 1975.

Japan's foreign minister, Kiichi Miyazawa, signed the Agreement and his party, the Liberal-Democratic Party, will submit the treaty to a special session of the Diet which will convene in September 1975. The Chinese Ambassador in Tokyo signed for the PRC.

The final Agreement included a formal exchange of diplomatic notes. The Chinese insisted upon closing the Gulf of Pohai and a northern part of the Yellow Sea to foreign fishermen for reasons of "national defense." Japan, while refusing to recognize the Chinese position, voluntarily agreed to prohibit Japanese fishing vessels from entering the area for reasons of "conservation of fishery resources." Moreover, the Chinese have warned the Japanese not to fish south of 27°N. latitude in waters near Taiwan.

The Agreement covers the Yellow Sea and the East China Sea, excluding the territorial waters of China. Restrictions on horsepower and number of vessels permitted to fish are set forth in Appendix I to the Agreement. These restrictions include a ban on trawling within 100 nautical miles from China's coast and a ban on vessels with 600 horsepower or more within 150 nautical miles (see map).

Other articles of the Agreement limit mesh sizes and regulate seining and trawling operations. Provisions for seeking shelter in harbors are included in the Agreement. Article 6 of the Agreement establishes a Joint Commission, composed of three representatives

of each government, whose aim is to conserve and rationally use the fishery resource. The duration of the Agreement is 3 years. After that it can be terminated on 3 months' advance notice.

Area of Japan-PRC Fisheries Agreement of 1975.

The Government of the Republic of Korea (ROK) publicly registered its objection to the Fisheries Agreement between the People's Republic of China (PRC) and Japan. In a statement by the Ministry of Foreign Affairs dated 2 September, the Korean Government expressed its "deep concern over the Fisheries Agreement between Japan and the PRC concluded on 15 August 1975, concerning the high seas of the Yellow Sea and the East China Sea. The ROK considers it regrettable that such agreement was made without any prior consultation with the ROK which, as a coastal state, has vital interests in fishing in the area."

The ROK reaffirmed the inherent and traditional rights of its nationals to engage in fishing in the Yellow Sea and the East China Sea, and reserved all its rights as a coastal state of the area under international law.

The government of the ROK also stated that it is "ready to enter into discussions at any time with the parties interested on the question of taking such measures as the conservation of the fisheries resources and their rational utilization in the area, the safety of fishing operations, and emergency rescues at sea, in accordance with the established rules of international law."

Brazil Signs Shrimp Fishing Agreements

Brazil has signed fishing agreements with three Caribbean countries, allowing each country to harvest shrimp off northeastern Brazil (see map) during 9 months of the year. Negotiations were concluded with Trinidad and Tobago on 29 January 1975, with Barbados on 28 February, and with the Netherlands (negotiating for Surinam[1]) on 4 April. The agreements with Barbados and Trinidad and Tobago are for 3 years, but the agreement with the Netherlands is for only two years.

The terms of each of the agreements are basically similar. Shrimp fishing is permitted in an area north of Belem from 1 March to 30 November, with one small section of the area[2] open only from 1 March to 30 June (see map). Each country is assigned a quota of vessels that are allowed to harvest shrimp in the agreement area. The number of such vessels is to decline each year the agreements are in force (Table 1).

The agreements with Barbados and Trinidad and Tobago include a clause authorizing the Brazilian Government, at the end of each year, to increase the number of vessels permitted in the agreement area during the following year. Barbados as well as Trinidad and Tobago have agreed to pay Brazil US$1,360 per vessel per year. This amount is only 40 percent of the normal fee, "due to the mutual preferential treatment among developing countries." No fees were mentioned in the Netherlands/Surinam agreement.

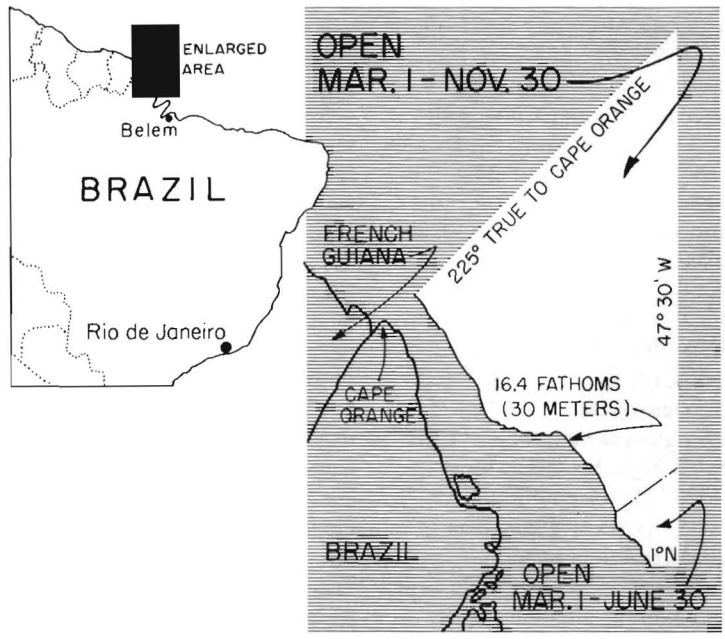
The Brazilian Government is responsible for enforcing the terms of each agreement. With slight variations in text, shrimp fishermen are prohibited from using destructive equipment, chemical, toxic, and explosive substances, jettisoning polluting substances, and fishing in spawning grounds. Violations of the terms of the agreement may result in the confiscation of fishing equipment and the catch which has been harvested illegally.

On 20 July 1975, Brazil seized three Trinidadian shrimp trawlers. The Trinidadians had been fishing in the southern portion of the agreement area which is closed to shrimp operations after 30 June.

[1]Surinam became independent in November 1975.
[2]This area is identical to that established in the U.S.-Brazilian Shrimp Agreement signed on 1 March 1975.

Table 1.—Number of ships permitted to harvest shrimp in the agreement area, by country and year.

Country	Number of Vessels		
	1975	1976	1977
Barbados	22	17	15
Surinam	23	17	—
Trinidad	28	22	17



Shrimp agreement area off northeastern Brazil.