

United States Extends Exclusive Fisheries Jurisdiction to 200 Miles

On 13 April the President signed H.R. 200, the Fishery Conservation and Management Act of 1976, extending the exclusive fisheries jurisdiction of the United States to 200 miles. The Act has far-reaching implications for all nations which fish in waters off U.S. coasts, and the following is a summary prepared by the Department of State to describe the most important provisions of the Act.

The Act establishes a zone contiguous to the territorial sea out to 200 miles in which the United States assumes exclusive fisheries management authority, effective 1 March 1977, and asserts such authority over anadromous species (for example, salmon) of U.S. origin and continental shelf fisheries resources seaward of the zone. This authority does not extend to highly migratory species, such as tuna.

Foreign fishing may be permitted after 1 March 1977 to the extent of any surplus over the harvesting capacity of U.S. fishermen and under the optimum yield from each fishery. That is, the Secretary of Commerce and Regional Councils (see related story, next page) established by the Act will set the total allowable catch (TAC) for each fishery and determine what portion of this total will be harvested by American fishermen. The remaining surplus will be allocated among foreign fishermen by the Secretary of Commerce. In allocating the surplus to foreign fishermen, the Secretary of State shall take into consideration traditional fishing activity, whether such nations have cooperated in making substantial contributions to fisheries research, cooperated in enforcement with respect to the conservation and management of fishery resources, and such other matters as are deemed appropriate. However, foreign fishing in the zone, or for anadromous or continental shelf species in or beyond the zone, is prohibited after 1 March 1977 unless certain conditions are met, described below.

In the case of existing bilateral agreements that remain in force on 1 March 1977 (with Canada, South Korea, and the Atlantic Coast agreement with the Soviet Union), the parties to the agreements must obtain

"registration permits" for each vessel from the Secretary of State in order to verify that their vessels are authorized to fish. In the case of continuing multilateral treaties, "registration permits" will be similarly required. This will involve some 18 nations, including Japan, Canada, the Soviet Union, Poland, Federal Republic of Germany, Spain, and others. Permissive authority is also granted to the Secretary of State to levy reasonable fees to recover administrative costs.

In the case of agreements that expire before 1 March 1977 (for example, Pacific Coast agreements with Japan, the Soviet Union, and Poland), no extension is permitted and the nations involved must conclude new "governing international fisheries agreements" that recognize our jurisdiction as set forth in the Act, and obtain permits for each vessel by which the Secretary of Commerce unilaterally sets the terms and conditions under which fishing is authorized. The "governing international fisheries agreements" must be in force on 1 March 1977. However, the Act requires that they lie before Congress for 60 days while Congress is in session before they enter into force.

With respect to the permits issued by the Secretary of Commerce, opportunity is provided for comments by interested parties with respect to these permits. The procedure is extensive and detailed. Essentially, the Secretary of State is required to receive applications from foreign countries and publish them in the Federal Register. Regional Councils established under the Act are allowed 45 days in which to comment on the applications and the Secretary of Commerce, after appropriate review and after consultation with the Secretary of State and the Secretary of Transportation, shall approve the application and establish the specific conditions and restrictions which shall be applicable to each permit. In addition, the Act provides for the payment of fees by foreign vessels issued permits to cover the cost of research, management, and administration of the law.

Any foreign fishing vessel that does not have on board a valid permit issued

under an existing agreement or a new governing agreement will be seized and prosecuted. In addition foreign operators and vessels are subject to arrest, seizures, fines, and imprisonment for such unlawful acts as refusal to permit U.S. enforcement officers to board and inspect their vessels, fishing without a valid permit or in violation of the conditions stipulated in the permit, and resisting arrest. Criminal offenses are punishable by a fine of not more than \$50,000 or imprisonment or both, or in the case where a person forcibly resists arrest and either injures or places the arresting officer in danger of physical harm, not more than \$100,000 or one year in prison, or both. In addition, civil penalties may be imposed. They include forfeiture of catch, gear, cargo, and vessel.

Provision is also made with respect to the U.S. distant water fisheries, such as tuna and shrimp. If the Secretary of State is unable to conclude an international fisheries agreement within a reasonable period of time which would allow U.S. fishing vessels access to fisheries over which other nations assert exclusive fisheries management authority recognized by the United States, the Act provides for the imposition of import embargoes on fish products for the nation involved. Such an embargo can be imposed for: 1) refusing to commence negotiations, 2) failing to negotiate in good faith, 3) denying U.S. fishermen the opportunity to fish for highly migratory species in accordance with international agreements, or 4) seizing U.S. vessels under certain conditions. Compensation to U.S. fishermen under the Fishermen's Protective Act is expanded.

The Act also authorizes the Secretary of State to seek agreement with neighboring countries on the boundaries of the conservation zone of the United States.

Finally, the Act states that if the United States ratifies a comprehensive Law of the Sea treaty, the Secretary of Commerce, after consultation with the Secretary of State, may promulgate any such changes as are necessary to conform the administrative regulations to the requirements of the treaty.

NOAA and the Marine Fisheries Conservation Act

President Ford's signature on the new Marine Fisheries Conservation Act has given NOAA and the National Marine Fisheries Service significant new responsibilities for conservation and management of marine fisheries. The new law puts under U.S. control about 10 percent of the world's fishery resources—the largest fishery resource of any nation in the world, encompassing 2.2 million additional square miles of ocean.

Anticipating the enactment of such a law, NOAA Administrator Robert M. White established an Extended Jurisdiction Planning Office more than a year ago to plan NOAA's role when the bill became law and to provide technical assistance to the Congress in drawing up the legislation. William Royce headed the office until his retirement late last year, when he was replaced by Brian Rothschild. Present staff members are Dale Sortland and Stetson Tinkham. NOAA staff members from other components who are working closely with the office are Gary Smith and Bruce Norman from NMFS, Edward Klima from Marine Resources, Herbert Blatt from the Office of General Counsel, and Richard Grigg from Sea Grant.

REGIONAL COUNCILS

At the heart of the new management regime is a system of Regional Councils, which was to be established within 120 days after the President had signed the bill into law. Composed primarily of state and constituency representatives, the eight councils are: New England Council; Mid-Atlantic Council; South Atlantic Council; Caribbean Council; Gulf Council; Pacific Council; North Pacific Council; and Western Pacific Council. The number of voting members of each council varies from 7 to 19, depending upon the number of states and territories in each region.

Voting members of each council consist of the principal state official with marine fishery management responsibility in each state, designated by the governor; the regional director of the National Marine Fisheries Service; and additional members designated by the Secretary of Commerce from lists submitted by the state governors.

FISHERIES MANAGEMENT PLAN

The major task of each council is to prepare a fisheries management plan for each fish stock found within the waters of the region. Thus the states have the primary responsibility for taking part in the development of these management plans and seeing that they are implemented.

In addition to its resource assessment and research responsibilities, the Department of Commerce will now have the authority to review and approve management plans developed by the councils to ensure that they conform to national standards and other intents of the legislation.

The Secretary of Commerce also has the authority to promulgate other regulations required to implement the management plans, and to develop additional regulations in certain circumstances. NOAA's Extended Jurisdiction Planning Office has worked with the U.S. Coast Guard as it carries out its Congressionally mandated study to determine the kind of enforcement and surveillance systems that will be needed.

INTERNATIONAL AGREEMENTS

NOAA has also begun to work with the State Department on some of the difficult questions concerning the continuation of the bilateral and multilateral arrangements with other nations, once decisions are made on the basis for providing foreign nations with access to our fishery resources. Foreign fishing will be permitted under circumstances consistent with the provisions of the Act. Foreign vessels fishing in the zone—or for anadromous species or continental shelf fishery resources beyond the zone—will, after 28 February 1977, have to have a valid permit for such fishing.

Additional effort and resources will be required within NOAA to put the fisheries management regime into effect. Funding for ships, enforcement, research, staff work, and council operations will need to be increased. It is presently estimated that when the new regime becomes fully operative it will cost an additional \$35 million annually, exclusive of enforcement

costs that may be required by the Coast Guard.

Supplementing the NOAA in-house planning for extended jurisdiction have been planning and information efforts developed by the Sea Grant network. The bulk of these have been economic studies, with Bruce Rettig at Oregon State University and Virgil Norton at the University of Rhode Island analyzing the expected economic impacts of extended jurisdiction on, respectively, the west and east coasts. Another report by J. W. Devaney III, of the Massachusetts Institute of Technology Sea Grant program, dealt with factors affecting the income of fishermen and fish consumers as a result of the 200-mile fisheries limit.

NMFS Names Endangered Species Coordinator

Robert E. Stevens has been named endangered Species Coordinator for the National Marine Fisheries Service, a component of the National Oceanic and Atmospheric Administration (NOAA). Stevens formerly was with the Texas Parks and Wildlife Department in Austin, where he was the principal administrator for management of living marine fisheries resources on the Texas coast.

In his new position with the Commerce Department agency, Stevens will be responsible for developing and implementing conservation policy, procedures, and regulations necessary in administering the endangered species program.

Stevens has had extensive fishery experience at both the state and federal levels, as well as with industry. He received an A.B. degree in business administration from the College of William and Mary, and his B.S. degree in zoology from North Carolina State University. He was awarded his Ph.D. in zoology from North Carolina State in 1970.

Hovis Directs NOAA Satellite Laboratory

Warren A. Hovis, Jr., of Severna Park, Md., an expert in remote sensing of natural phenomena from satellites, has been appointed Director of the Satellite Experiment Laboratory of the

National Environmental Satellite Service, an element of the National Oceanic and Atmospheric Administration (NOAA). In his new post, Hovis will be involved with expanding the capabilities of NOAA's environmental monitoring satellites in providing information about the earth, its atmosphere, and its oceans. He previously was Associate Chief for the Earth Observation Systems Division at Goddard Space Flight Center, National Aeronautics and Space Administration.

A member of the American Institute of Physics and the Optical Society of America, Hovis has published technical papers on atomic and molecular spectroscopy, infrared spectral measurements, and other subjects within his area of research experience.

He received both his A.B. and Ph.D. degrees in physics from Johns Hopkins University.

Munson Sworn in, Heads Atlantic Marine Center

Robert C. Munson, a 24-year veteran of the National Oceanic and Atmospheric Administration's NOAA Corps, was sworn in 30 April 1976 as Director of the Commerce Department agency's Atlantic Marine Center in Norfolk, Va., by NOAA Administrator Robert M. White. He succeeded the retiring Alfred C. Holmes.

The ceremonies, held on the fantail of the NOAA Ship *Pierce*, were witnessed by 200 NOAA Corps officers and personnel of the Center. Allen L. Powell, Director of NOAA's National Ocean Survey, introduced White who administered the oath. As Director of the Atlantic Marine Center, Munson will have jurisdiction over the eastern seaboard and the Great Lakes, including ship bases at Norfolk and Miami.

The Atlantic Marine Center is home port for seven NOAA vessels which conduct ocean surveys, hydrographic, circulation, and wire drag operations in the Great Lakes, the Atlantic Ocean and the Gulf of Mexico. These ships are the *Mt. Mitchell*, *Pierce*, *Whiting*, *George B. Kelez*, *Ferrel*, *Rude*, and *Heck*.

Two NOAA ships based in Miami, the *Researcher* and the *George M. Bowers*, are engaged in deep ocean investigations and marine surveys.

Additionally, the *Albatross IV*, out of Woods Hole, Mass.; the *Delaware II* from Sandy Hook, N.J.; and the *Oregon II*, Pascagoula, Miss., are being used in NOAA's Living Resources Survey program.

Munson, a native of Oneonta, N.Y., has served as Associate Director of the National Ocean Survey's Office of Marine Surveys and Maps since May 1972. He was graduated from Cornell University with a civil engineering degree in 1951, and in 1967 received a master's degree in geophysical engineering from the Colorado School of Mines.

NOAA Funds Satellite Eye on Ocean Productivity

A \$170,000 contract for the design of systems and techniques to permit the monitoring of ocean productivity by global orbiting satellites has been awarded the Scripps Institution of Oceanography, University of California, San Diego, by the National Oceanic and Atmospheric Administration (NOAA). David S. Johnson, Director of NOAA's National Environmental Satellite Service, said measurement of ocean productivity by satellite would be a major contribution and service, both to the commercial fishing industry and to ecologists.

"The value to the fishing industry in maintaining and managing the oceans' living resources is obvious," Johnson said. "And, the importance of being able to continually monitor properties which would indicate any ecological changes in the oceans is increasingly significant as we become more responsibly concerned with man's impact upon his environment."

The Scripps contract from the Commerce Department agency will fund research on the relationship between the amount of chlorophyll *a* contained by phytoplankton—microscopic plant life in the oceans—and the color of the sea as observed from a satellite, according to Jack Sherman, Chief of NESS's Spacecraft Oceanography Group. Tropical oceans are clear and blue, Sherman explained, because they are almost devoid of any significant plankton growth. The north Atlantic, particularly in the fishing grounds off the Grand Banks and Iceland, is green because it is rich in plankton.

Phytoplankton is at the beginning end of the food chain which supports higher life forms in the ocean, Sherman said. The primary productivity of a water body is directly related to the presence of amounts of phytoplankton containing chlorophyll *a*.

The Scripps research is a necessary step in preparing to use observations from the Coastal Zone Color Scanner instrument to be carried into space aboard NASA's NIMBUS-G spacecraft to be launched in 1978. This will be the first satellite instrument dedicated to providing data on ocean bioproductivity, according to Sherman.

A large part of the research task will be focused on processing and analyzing data acquired off Southern California last fall by scientists from NOAA, Scripps Institution, NASA's Goddard Space Flight Center and Ames Research Center, and the Environmental Research Institute of Michigan. This work resulted in a wealth of in-situ physical and optical data, as well as simulated satellite data acquired by coordinated aircraft overflights and research ship cruises. The 1975 activity was designed and directed by Roswell Austin of Scripps and Dennis Clark of NOAA's satellite agency. Both are members of the NIMBUS-G Coastal Zone Color Scanner team.

Marine Mammal Law Violator Convicted

Jerry D. Mitchell, formerly of Key Largo, Fla., was convicted 4 May 1976 in Federal District Court, Key West, Fla., for criminal violations of the Marine Mammal Protection Act. This was the first criminal conviction under the Act according to William H. Stevenson, Southeast Regional Director of the National Marine Fisheries Service (NMFS), an agency of the Commerce Department's National Oceanic and Atmospheric Administration.

Mitchell, who now resides in Chula Vista, Calif., was found guilty in a jury trial on 24 counts of a 32-count indictment charging him with the capture and sale of 21 Atlantic Bottlenose Dolphins (porpoises) in the vicinity of the Bahama Islands during the spring and summer of 1974, and conspiracy to violate the Federal law. The defendant

was found innocent of the remaining 8 counts.

The case was investigated by NMFS Special Agents operating from their Regional Division office in St. Petersburg, Fla. Senior Resident Agent Winthrop A. Haskell supervised and coordinated the investigation with the

assistance of Bahamian officials and the U.S. Customs Service. Haskell also served as case agent during the trial, assisting Assistant U.S. Attorney Donald Ferguson and National Oceanic and Atmospheric Administration attorney John B. Dunnigan in presenting the government's case.

Third International Nautical Chart Printed

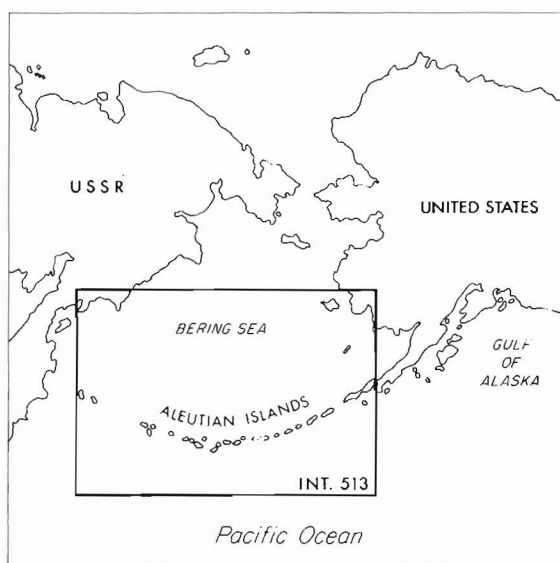
Publication of the third of five international nautical charts has been announced by the National Oceanic and Atmospheric Administration (NOAA). Prepared by NOAA's National Ocean Survey, the chart, INT 513, covers the southern portion of the Bering Sea, including the Aleutian Islands, and is issued as part of a multination program sponsored by the Monaco-based International Hydrographic Organization (IHO).

The IHO program will provide a standard series of charts for the entire world which can be used by all nations. Each IHO member nation is authorized to reprint charts in its own language, but must employ the same form of navigational information, such as depth curves, sounding spacing, aids to navigation, and nautical symbols. Nations that have agreed to produce and issue international charts are Canada, West Germany, United Kingdom, France, Brazil, Argentina, Chile, Italy, Netherlands, Japan, India, New Zealand, Australia, and South Africa.

Published by the Commerce Depart-

ment agency's office of Marine Surveys and Maps, the new chart is 1:3,500,000 scale, and the third metric nautical chart issued by the National Ocean Survey. It was compiled in accordance with IHO specifications and shows elevations as well as depths in metric units. Loran-C lines of position for electronic navigation are shown in addition to the usual nautical chart information.

The final two charts in the series being prepared by NOAA's National Ocean Survey will cover the Gulf of Alaska from the Canadian border to the Aleutian chain, and the northeastern Pacific from Alaska to Hawaii, including the U.S. west coast. The first chart, INT 501, published by the Survey last fall, covered a vast area of the Pacific Ocean off the west coast of the United States and Canada, and the second chart, INT 514, showed the northern portion of the Bering Sea. The new chart, International chart INT 513 (National Ocean Survey Chart 513) is priced at \$3.25, and may be obtained from the NOS Distribution Division (C44), Riverdale, MD 20840.



Northeast Pacific Ocean area covered by new NOAA chart.

Tide Monitoring Station Open on Chesapeake Bay

An automatic tide recording station, installed on the Chesapeake Bay Bridge Tunnel to serve as a research and development facility for improving technology involved in the measurement of tides and water levels, became operational on 10 April, the National Oceanic and Atmospheric Administration (NOAA) has announced. The station, on one of the most important Atlantic Coast waterways, is the result of 3 years effort by NOAA's National Ocean Survey and the National Weather Service, the U.S. Army Corps of Engineers, and the Chesapeake Bay Bridge Tunnel Commission. It is maintained by the Survey's Atlantic Marine Center in Norfolk, Va.

Allen L. Powell, Director of the Commerce Department agency's National Ocean Survey, said the Bay Bridge Tunnel station can operate up to 10 different types of tide gaging or scientific equipment simultaneously, providing the Survey with an "invaluable aid in the evaluation, testing, and improvement of techniques of various equipment essential to obtaining more and better knowledge of our oceanic environment." Such tide measurements, Powell said, "serve the needs of the mariner, the engineer, the scientist, and the general public."

The station's tide recorder will automatically telemeter water levels to the National Weather Service at the Norfolk (Va.) Airport, providing information to aid in warning the public of rising water levels from winds or heavy rains not only in the immediate area but also the Upper Bay areas where flood waters are a chronic threat to residents of low lying sections. Information transmitted to the U.S. Army Corps of Engineers in Norfolk will assist in the design of construction projects as well as allow additional time to establish precautionary measures during flood periods.

In addition to satisfying nautical charting requirements of the National Ocean Survey, tide measurements also: 1) Determine mean sea level and other tidal datums for surveying and engineering purposes and to establish a system of tidal bench marks to which these datums can be referred; 2) Provide data for tide predictions and

publication of this data in annual tide prediction tables; 3) Investigate fluctuations of sea level and crustal movements of the earth; 4) Supply information concerning tidal conditions for engineering projects; 5) Provide pertinent data for special estuarine studies; and 6) Determine marine boundaries, both state and federal, for coastal zone planning and in some cases, litigation, as well as various other maritime interests.

The Bay Bridge Tunnel station, constructed on the fishing pier, replaces the Virginia Beach station which was destroyed by storms or strong winds five times in 10 years. It joins a long and historical list of tide observation sites for the Chesapeake Bay area, dating back to the earliest at Annapolis, Md., 6 June 1844, and Old Point Comfort, Va., 1 July 1844.

Central Puget Sound Circulation Studied

A search for clues to the uncommon ability of Puget Sound and other deep, cold-water estuaries to digest pollutants—and the limits of that capacity—is being conducted by National Oceanic and Atmospheric Administration (NOAA) scientists in Seattle, Wash.

Using a moored string of seven current-meters suspended beneath a subsurface buoy, NOAA scientists are developing the first detailed three-dimensional view of water circulation in the Sound. From the information collected, researchers expect to learn why the Sound, although bounded by large population centers, remains relatively pristine. They also expect to be able to develop and refine models used in predicting circulation in Puget Sound, which, with modifications could be applied to other deep, cold-water estuaries.

The year-long current-measuring effort is being conducted by the Commerce Department agency's Pacific Marine Environmental Laboratory (one of NOAA's Environmental Research Laboratories) as part of a new Marine Ecosystems Analysis (MESA) Puget Sound project. The MESA program seeks to determine the impact of human activities on marine life and environment.

The present current-meter mooring was deployed in the central basin of Puget Sound in 650 feet (200 meters) of water north of West Point in September 1975. It will obtain data at two-to-three-month intervals until this September. During one month this summer, five moorings will be deployed in the central Sound to study spatial variations in circulation, and present plans call for additional studies at other Sound locations through next year. Vessel support for this work comes mainly from NOAA's 175-foot (53-meter) ship *McArthur*, based at the Pacific Marine Center in Seattle.

We're mainly concerned with determining behavior of the Sound and the impact of wastes," explained Glenn Cannon, the NOAA oceanographer directing these field studies. "The current-meter mooring is near the largest of four sewer outfalls entering the Sound from the greater Seattle area. This is an area where we've made measurements previously, so that we have some continuity."

The Sound is deep, and its circulation is complicated by rapid tidal currents, relatively high tides, and changing winds, Cannon said. "Based on our earlier studies of circulation near West Point, it looks as though the deep water in the Sound can mix itself in about a month, at least in winter. This rapid mixing means the Sound can

handle a large amount of waste, but there's bound to be a limit. We want to determine these mixing mechanisms, and their limitations."

Seasonal changes play a dominant role in the way Puget Sound water moves through the deep estuary and its complex of inter-island channels, he said. As the study progresses, the NOAA investigators will obtain the longest and the first full-year set of circulation measurements at a location in the Sound.

Cannon noted that Puget Sound is unique in the United States south of Alaska. "It's like a fjord in being deep," he said, "but a classic fjord is fed by some fresh water source near its head. The Sound gets a significant part of its fresh water near the seaward end of the estuary north of Seattle."

Understanding how Puget Sound removes pollutants by mixing will do much to help environmental managers preserve this unique, comparatively unpolluted estuary. It will also provide a useful tool for local governments as they make the costly decisions on how to bring their waste-treatment systems up to present federal standards. The Puget Sound study also has special implications for Alaska, where oil exploration and development will bring increasing population—and increasing environmental pressures—on the northern state's deep bays and inlets.

Foreign Fishery Developments

Irish Triple Fish Catch Since 1964

The Irish fishing industry has grown dramatically in the last 10 years, according to the NMFS Office of International Fisheries. From 1963 to 1974, the industry's contribution to Ireland's Gross National Product has increased from US\$2 million to US\$57.5 million¹. This total is expected to reach US\$205 million by 1984.

Growth began in 1964, after a study by U.S. fishery experts concluded that Ireland offered profitable commercial fishing opportunities, because of its proximity to major fishing grounds and both United Kingdom and European

markets. Since then the Irish government has encouraged expansion of shore-based facilities and processing plants by fostering investment and providing grants and loans. Development has been insured through the establishment of national catch quotas to conserve certain species. In the course of the last decade, Irish fisheries have developed into an integrated, export-oriented industry. Despite current marketing difficulties and rising costs of fishing operations, the Irish fishing industry is likely to continue expanding.

The total catch has nearly tripled in the past 10 years (see Fig. 1). Pelagic species, particularly herring, account

¹A conversion rate of US\$1.00 = 0.49 Irish pounds was used in this report. GNP data are from *The Irish Skipper*.

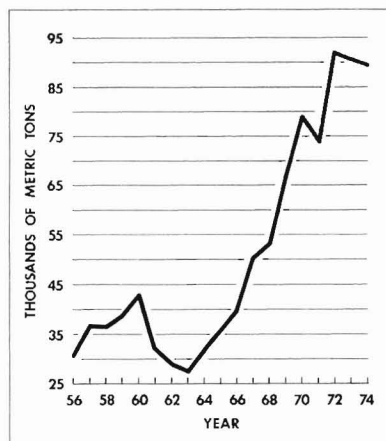


Figure 1.—Ireland's total fish catch, 1956-74.

for 60 percent of the catch by weight. The demersal catch, though less important, includes whiting, haddock, cod, plaice, skate, and other groundfish. Freshwater and Atlantic salmon fisheries are also important: exports of Atlantic salmon alone earn US\$6 million per year, or almost 25 percent of the total gross value of the entire Irish fisheries catch. However, only 15 percent of all fish taken off Ireland is landed by Irish vessels, which are not large enough to fish far from the coast. The rest is taken by fleets from other European countries.

EXPORTS AND IMPORTS

More than half of the total catch is exported. The major export commodities are herring, salmon, and shellfish. The United Kingdom is the largest importer of Irish fishery products. In 1973, exports to that country totalled US\$7.8 million. Other significant markets for Irish fishery products are France, the Netherlands, and the Federal Republic of Germany. Exports to each of these countries averaged US\$3.1 million. Imports by the United States remain comparatively small, about US\$422,000 in 1973. In 1974 the value of exports of all types of fish and fishery products reached US\$25 million compared to US\$22.5 million in 1973 (see Table 1).

The value of fishery imports, mainly fish meal and canned fish, has declined. In 1974, imports were estimated at US\$9.8 million compared to US\$10.2 million in 1973. Domestic consumption in recent years has risen in response to

Table 1.—Ireland's fishery exports, 1971-74.

Year	Quantity (metric tons)	Value (US\$)
1971	37,859	11,945,956
1972	48,758	16,246,452
1973	51,465	22,547,950
1974	47,554	25,950,950

Source: OECD Review of Fisheries, 1974.

vigorous sales promotion. Per capita consumption of fish and fishery products in 1974 was 11.8 kilograms (26 pounds) and is expected to increase 10 percent by 1980.

FLEET

The Irish fisheries are coastal and the fleet consists almost entirely of short-range craft. The fleet consists mainly of the Scottish-type trawlers, with capacities of 51-75 gross registered tons, although in recent years there has been a trend toward the acquisition of larger vessels. The remainder of the fleet consists of 1,200 smaller craft of up to 7 meters in length, powered mainly by outboard engines. Ireland had 6,138 fishers (3,890 part-time) in 1974, or about one percent of the total labor force.

GOVERNMENT SUBSIDIES

Industry growth is supported by the Board Iascaigh Mhara (BIM) or the Irish Sea Fisheries Board, a government development corporation. BIM is

Taiwan Exports Eels to Japan

A meeting in Taipei, Taiwan, of Japanese eel importers and Taiwanese eel producers resulted in agreement that 14,000 metric tons of eels would be exported from Taiwan for sale in Japan during 1976. Of the total amount, 11,000 metric tons will be live eels and 3,000 metric tons will be processed eels. The export price for live eels was set at \$6,000-\$7,000 per ton.

Taiwanese eel culturists have agreed to import Japanese eel (*Anguilla japonica*) elvers to raise to maturity. Final details of the trade agreement were worked out at another meeting in May. (Source: *China Post*.)

According to the NMFS Office of International Fisheries, Japan imported 7,689 metric tons of live eels from Taiwan in 1974 and 10,843 metric tons

divided into four major sections: fisheries resources, domestic and export markets, investment, and shipbuilding. The bulk of aid for capital development is in the form of grants for the purchase of new fishing boats. Purchasers receive outright grants on 25 percent of the cost for fishing vessels measuring 20 to 86 feet long, in addition to a loan covering the remaining costs at 4 percent interest over 10 years. The capital development fund allocated for the fishing industry in 1975-76 was US\$9.8 million or 40 percent greater than in 1974-75. Development plans for the industry include: 1) strengthening the existing coastal fleet and expanding into mid-water fishing; 2) expanding and integrating shore-based facilities to insure maximum employment and more effective marketing; and 3) developing mariculture for fish and shellfish.

FISHERIES LIMITS AND NEGOTIATIONS

Currently, Ireland claims a 12-mile fishing zone, but Irish fishers are demanding its extension to 50 miles. Fishers are also demanding that Ireland renegotiate the EEC Fisheries Agreement, which allows EEC countries to fish up to 6 miles off the Irish coast, in light of the rapidly diminishing stocks and the extended jurisdiction developments.

in 1975. Average prices per ton in those years were \$5,980 and \$5,950, respectively. Japanese eel culturists have been hit hard by increased prices for fuel used to maintain water temperatures during the winter months, but Taiwanese eel culturists, benefiting from their milder winters, appear able to expand production to meet the Japanese market demand.

Japan imported only 13 metric tons of live eels from the United States in 1974 and only 8 metric tons in 1975. Furthermore, average prices per ton for live American eel exports to Japan were \$4,430 in 1974 and \$2,890 in 1975. U.S. eel exports to Japan have been held back by transportation costs, by a general world economic slump during 1975, and by the Japanese market preference for *Anguilla japonica*, the domestic eel. (Source: *Japan Exports & Imports* and others.)