

## U.S. Concerned Over Lack of Accord with Japan on Fisheries

Claiming that the sockeye salmon resource in Bristol Bay (Alaska) has decreased so drastically during recent years as to jeopardize the traditionally abundant stock, and that halibut stocks in the eastern Bering Sea are on the brink of extinction as a commercial resource, National Marine Fisheries Service Director Robert W. Schoning has criticized the Japanese for their failure to respond adequately to the two crucial conservation problems.

Mr. Schoning's remarks were made following the November meeting of the INPFC (International North Pacific Fisheries Commission) held in Tokyo. He attended as a representative of the Commerce Department's National Oceanic and Atmospheric Administration, the parent organization of NMFS, and as an alternate Commissioner of the INPFC. Other Commissioner representatives on the U.S. delegation in Tokyo were Elmer E. Rasmuson, Donald L. McKernan, and Chairman Milton E. Brooding. Member nations consist of Canada, Japan, and the United States.

The U.S. delegation had five basic objectives in an effort to resolve urgent conservation problems confronting U.S. fishermen in the North Pacific:

1. To seek adequate protection for Bristol Bay sockeye salmon in 1974;
2. To substantially reduce the incidental catch of juvenile halibut by Japanese trawlers in the eastern Bering Sea;
3. To prevent Japanese violations under the treaty<sup>1</sup> and the Commission's conservation recommendations by more stringent enforcement efforts by Japan;
4. To encourage study by scientists of the three member countries of the vulnerability of western Alaska chinook salmon to Japan's high-seas salmon fisheries; and,
5. To expand INPFC studies to include all fisheries resources in the Bering Sea.

Describing the situation surrounding the Bristol Bay sockeye salmon as critical, Mr. Schoning said: "The expected run of five million sockeye salmon to Bristol Bay in 1974 is only about half our spawning requirement of nine million fish—and the State of Alaska contemplates no harvest in the major fisheries districts of Bristol Bay during the sockeye salmon season in 1974. In past years, these have been the largest sockeye salmon runs in the world."

He blamed adverse climatic conditions in recent winters for the 1973 "lowest return ever recorded of sockeye salmon to Bristol Bay," but added that small runs of the salmon *had* been predicted at the 1972 INPFC meeting and that the Japanese were aware of the need for cooperative conservation measures. At that time, Japan indicated it would operate its high-seas fishery with due concern for the Bristol Bay runs. Scientific information revealed at the recent Tokyo meeting clearly demonstrates, however, that Japan *increased* rather than decreased its fishing effort in 1973 in key areas where Bristol Bay sockeye salmon are vulnerable to capture during migration.

Mr. Schoning noted that evidence on hand shows clearly that any high-seas interception of Bristol Bay sockeye salmon in 1974 by the Japanese can have a strongly adverse effect on stock survival. As a preventive measure, the United States sought restrictions on salmon gillnetting in 1974 by the Japanese in high-seas areas when the Bristol Bay sockeye salmon is especially vulnerable to capture. The Japanese response, characterized by Mr. Schoning as "totally inadequate in view of the tremendous importance of Bristol Bay sockeye salmon to the livelihood of U.S. fishermen" merely noted an awareness of the problem but declined any assurance of positive action on the proposal that Japanese

fishing practices be altered.

The drastic reduction in the abundance of halibut in the eastern Bering Sea is illustrated by data that show a massive decline in the North American setline fishery in the eastern Bering Sea, which dropped from a peak of 11 million pounds in 1963 to under 200,000 in 1973. Whereas 104 Canadian and U.S. vessels participated in the fishery in 1963, only 7 vessels fished in 1973—a 93 percent reduction in number of vessels. In contrast, in the same time frame, Japan increased its annual trawl catch in the same area by about 500 percent—to more than 4 billion pounds of fish in 1972—which in 1971 included 11 million pounds estimated as the "incidental" halibut catch.

Mr. Schoning stated that the major cause of decline in halibut stocks is mortality associated with the high incidental catch of juvenile halibut by the large trawl fleets of Japan and the Soviet Union, which results in the destruction of fish that, if allowed to achieve their full growth potential, would permit maintenance of a viable setline fishery. He noted that the best cooperative efforts of Canada and the United States, working toward restoration of halibut stocks through the International Pacific Halibut Commission (on which Mr. Schoning serves as a U.S. Commissioner) for 50 years, have, therefore, been unsuccessful, despite stringent conservation regulations imposed on North American setline fishermen.

At the Tokyo meeting, Canada and the United States, with the concurrence of scientists from the three member nations, urged that the INPFC adopt minimum conservation proposals aimed at protecting juvenile halibut from capture by trawls. The proposed measures were intended to effectively prevent the commercial extinction of this important food fish, yet minimize disruption to Japan's trawl fisheries.

<sup>1</sup>International Convention for the High Seas Fisheries of the North Pacific Ocean.



The proposed restrictions would apply during periods when Japan's trawling effort is relatively low but coincides with periods when a high proportion (sometimes reaching 40 percent of total catch) of juvenile halibut is taken in trawl catches. Japan said, however, that it would not agree to the proposals because a substantial reduction in the halibut catch by trawlers also would result in a large decrease in trawl catches of other species.

Japan noted that it would take certain domestic actions to conserve the halibut resource, such as a continuation of the domestic size limit in the Bering Sea, maintenance of a large no-trawling area in the southeastern Bering Sea, and the placing of additional restrictions on trawling in specific periods and areas. Mr. Schoning said that the U.S. delegation views the domestic regulations proposed by Japan for 1974 as ineffective as a means of helping to restore the badly depleted halibut resource in the eastern Bering Sea.

He added: "The U.S. and Canadian delegations were extremely distressed by Japan's negative attitude toward their conservation proposals which in our view, would have caused only a 10 percent loss in Japan's total trawl catch in the eastern Bering Sea. Whereas the United States and Canadian halibut fisheries in the eastern Bering Sea have, for all practical purposes, been eliminated, the Japanese appear to be fearful of the impact on their industry, which we look upon as minimal, particularly in view of evidence that a reduction is needed in trawling to maintain all elements of the complex of groundfish species at high levels of productivity.

"We are talking in these exchanges of protecting a valuable resource which is in imminent danger of commercial extinction, not just sharing the catch. North American fishermen have suffered from severe restrictions imposed on them by the United States and Canada over a period of years in efforts to save the halibut resource.

Many of the fish we have refrained from taking in our continuing conservation efforts have not, however, accrued to either the resource or our fishermen, but rather have been taken by the expanding Japanese and Soviet trawl fisheries."

The INPFC meetings ended on a note of impasse with respect to the halibut issue inasmuch as a unanimous vote is a requisite to the adoption of new conservation measures. The United States and Canada may—as they have done in the past—adopt halibut conservation measures through the International Pacific Halibut Commission.

The U.S. delegation at the Tokyo meeting stressed its serious concern over continuing Japanese violations under the treaty. Clearly, some Japanese fishermen have been ignoring INPFC's conservation recommendations and Japan's domestic regulations as well. The Japanese delegation replied that violations of the treaty's salmon abstention provisions by Japanese nationals have been met with severe punishment. Japan promised that in 1974 it would increase patrols near the abstention line and would improve communications between patrol vessels and the salmon fleet. Mr. Schoning said he remains to be convinced, in view of previous assurances and unfavorable results as evidenced during 1973 when three Japanese vessels were caught fishing illegally for salmon in the Gulf of Alaska, 600 miles east of the abstention line.

Concerning halibut enforcement measures, the Japanese reported that they had increased substantially the number of inspectors aboard their trawl vessels in 1973; they said that in 1974 they would intensify enforcement of existing regulations with regard to halibut at ports of landing. The Japanese Government also agreed to permit U.S. scientific personnel aboard their trawl vessels in 1974 (as they did in 1972 and 1973), pending approval of such arrangements by the fishing companies, to observe the incidental catches of king and Tanner

crabs, and halibut. Japanese spokesmen stated that they would adopt a law prohibiting the export of undersized halibut.

The NOAA-NMFS delegate, Mr. Schoning, said that preventing the export of undersized halibut—thus reducing the market incentive for capture—is helpful, but emphasized that the most effective action would be to put into effect strong measures to minimize the capture and resultant mortality of juvenile halibut taken by trawlers. To that suggestion Japan would not agree.

The Japanese delegation indicated a willingness to work with the United States and Canada in conducting research concerning the vulnerability of western Alaska chinook salmon to Japan's high-seas fishery in the central Bering Sea. The sharp increase in Japanese catches of chinook salmon, many believed to be from North American stocks, is of increasing concern to U.S. fisheries.

The NMFS Director said he was pleased that the Japanese delegation had reversed its 1972 position and agreed to accept the U.S. proposal that the Commission study all Bering Sea fisheries resources, whereas in the past the Commission had undertaken studies only on stocks taken in substantial quantities by more than one party. Of the three member nations of INPFC, only Japan carries on a substantial groundfishing effort in the Bering Sea. The United States is concerned about the total catches by foreign vessels in the area, and is determined to restore or maintain the various stocks—such as pollock, yellowfin sole, and shrimp—at an optimum level, though no extensive U.S. fishing effort is yet involved.

Ample evidence exists of an ecological inter-relationship among all stocks, which can be affected by an imbalance of populations of various species. In view of the tremendous expansion of total landings of all stocks in the Bering Sea (which have increased from about 28 million pounds in 1954 to nearly 5 billion



pounds in 1971), the United States has criticized Japan because of its narrow interpretation of the treaty, which in the past permitted Commission studies in the Bering Sea only as they related to halibut. Some fish hitherto precluded from scientific study by the Commission have been severely reduced in numbers.

"We went to Tokyo expecting responsible and meaningful action by the Commission in addressing these issues. Now it is abundantly clear that the United States should seek other alternatives designed to protect halibut and

salmon in these areas and the livelihood of our fishermen, and to conserve all living resources in the North Pacific—resources that have been maintained too long to risk losing them now because of Japan's failure to take appropriate action," Mr. Schoning said.

The NMFS Director expressed the hope that the forthcoming Law of the Sea Conference scheduled for 1974, will lead to a meaningful solution to frustrating fisheries problems such as those experienced recently at the Tokyo conference.

## **New Acoustical Scanner of Seafloor Is Tested in Gulf for Fishery Application**

The latest thing in seafloor surveyors has been tested in the Gulf of Mexico by fishery scientists of the Commerce Department's National Oceanic and Atmospheric Administration to develop information on underwater obstructions to fishing.

Called the "Shadowgraph System," the acoustical device looks like a torpedo with wings and is towed behind a ship. Its purpose is to convey information to the tow ship concerning configuration of the seafloor detected by electronics systems.

In the recent series of tests to determine the Shadowgraph System's capability as a fisheries research tool, personnel from NOAA's National Marine Fisheries Service deployed the instrument from the research vessel *Oregon II* jointly with the underwater photography sled called RUFAS (Remote Underwater Fisheries Assessment System), towed by the research vessel *George M. Bowers*. The two were used together so that the engineers could evaluate the merits of an acoustical image as opposed to an optical image of portions of the seafloor.

Participants in the experiment were the NMFS Southeast Fisheries Center (Miami, Fla.), the NMFS Fisheries Engineering Laboratory (Bay St. Louis, Miss.), Navy's Naval Coastal Systems Laboratory (Panama City, Fla.),

NOAA's National Ocean Survey, and the U.S. Coast Guard. A committee consisting of representatives of the U.S. Geological Survey, the Louisiana Shrimp Association Offshore Oil Operator's Committee, the Bureau of Land Management, and the Corps of Engineers provided assistance and direction during planning phases.

The Shadowgraph System, whose full name is the "Reconnaissance and Surveillance System C Mark I Mod C (Shadowgraph)" was developed by the Navy Department. Spearheading the two-week-long project were U.S. Representative John B. Breaux of Louisiana, and the Gulf States Marine Commission, in response to requests by Louisiana commercial fishermen for Government assistance in locating and marking underwater sites containing debris that fouled and snagged their fishing nets.

During a one-week feasibility test off Panama City, Fla., participants reported that they had been able to take acoustical "pictures" of objects such as 55-gallon drums. These and other targets were placed on predetermined spots on the ocean floor to test the resolution capability of the electronic system and the clarity of the images received aboard ship on an electric image scope and on strip charts. The latter provide a permanent record of

data thus collected. The ships and their towed underwater vehicles ranged over waters off the Louisiana and Mississippi coasts. The Shadowgraph located and marked numerous bottom obstructions, and on several occasions scanned fish schools. The RUFAS system was rendered ineffective, however, because of high turbidity of the water during the study.

The Shadowgraph System's main feature is a torpedo- or fish-like device approximately 10 feet long and six feet wide, weighing about 450 pounds. The sonar-equipped winged cylinder, easily launched from the fantail of a ship, was towed in a search pattern over areas of interest at depths of 10 to 25 fathoms during the test. Its ability to side-scan, or "look" to right and left is considered an important asset in that it expands considerably the scanned area. Extremely high resolution is possible because of the high-frequency signals of the instrumentation. The picture-taking capability of the mechanical fish is based on the sonar principle in which a sound signal is bounced against an object encountered, bounced back to the instrumentation to reflect details of the scene under observation, and recorded via electronic circuitry on a pictorial receiver or scope.

After the experiment was completed, observers said that the Shadowgraph "appears to do an excellent job of obtaining bottom profile data," and that "a sufficient data base has been generated upon which a test could be designed that would resolve the question of marine resource assessment utilizing high resolution side scan sonar." They added that the tests provided a technique for deployment of side scan sonar from fisheries research vessels; and that the data base possible through additional work with the Shadowgraph System can provide the fishing industry with accurate and dependable information concerning underwater obstructions to fishing. Detailed findings have been presented before a meeting of the Gulf States Marine Fisheries Commission.



# NMFS Issues Great Lakes Fish Poster

Great Lakes fish are the subject of the fifth in a series of fish posters, depicting aquatic inhabitants of U.S. waters that is issued by the Commerce Department's National Oceanic and Atmospheric Administration. The Director of NOAA's National Marine Fisheries Service, Robert W. Schoning, made the initial presentation in December 1973 at a Chicago (Ill.) meeting of the Seafood Council of Illinois, the Midwest Federated Fisheries Council, and NMFS representatives.

The latest four-color poster displays 52 species of fish that inhabit bays and open waters of the Great Lakes. Each species is or has been important to food and recreational fisheries of the region, or has special regional significance to Great Lakes ecology. All species do not occur in every Lake—some have become rarities in particular locations.

Developed by Bob E. Finley, Chief, Consumer Education Services Office of the NMFS, the 30-inch-wide by 48-inch-long charts are printed on washable non-glare plasticized paper that hangs flat against a surface without curling. A list of common and scientific names of the fishes is included, as well as artwork showing the natural habitat.

Copies may be ordered from Government bookstores and the Superintendent of Documents, Washington, DC 20402, for \$1.75 for the latest poster, \$2.00 for earlier ones.





## NOAA Forms Ocean Remote Sensing Lab

A laboratory dedicated to studying the oceans from satellites, aircraft, and other remote platforms has been created in Miami, Fla., the U.S. Commerce Department's National Oceanic and Atmospheric Administration has announced.

The new Ocean Remote Sensing Laboratory will be one of the Atlantic Oceanographic and Meteorological Laboratories (part of NOAA's Environmental Research Laboratories, with headquarters in Boulder, Colo.) which occupy a major oceanographic research facility on Virginia Key near Miami.

According to Dr. John A. Apel, director, research emphasis will be on studying such physical and chemical aspects of the oceans, estuaries, and oceanic boundary layer as can be determined via remote sensing from spacecraft, aircraft, buoys, and ships; and to develop new instruments and techniques with which to do this.

"We have barely crossed the threshold of knowing how to use satellite sensors to observe the oceans," he says, "and technology in this area is progressing at an extremely rapid rate. We expect that 'ocean-tuned' satellites will eventually give oceanographers a flow of information and a breadth of vision comparable to that which meteo-

rologists have had from weather satellites.

"At present we are conducting research that uses oceanic data from existing satellites—for example, the high-resolution images from NOAA spacecraft and NASA's first Earth Resources Technology Satellite, ERTS-1, which were not designed primarily to gather oceanic data. And we are helping guide programs in new ocean-looking satellites and sensors, now in their early development stages.

"The other side of our effort is to apply the remote-sensing tools of the trade to ocean research conducted from ships and aircraft. Some of these are microwave radiometers, laser and lidar (the laser equivalent of radar) sensors, acoustic sounders, infrared and visible sensors, precise radar altimeters, and microwave scatterometers."

Among the Ocean Remote Sensing Laboratory's planned projects are studies of major current systems and hurricane-ocean interactions using data from GEOS-C, the geodetic satellite planned for a 1974 launch; Gulf Stream dynamics and internal waves using data from the second Earth Resources Technology Satellite (ERTS); and various studies of surface and internal wave dynamics in the sea, using available satellite data and acoustic remote sensing from ships.

supply in the coming months. For this reason, the number of permits issued to foreign fishing vessels will be limited only to those which have customarily been calling at Canadian ports and which can also show that a genuine hardship will result if fuel is not made available to them.

Under no circumstances will fuel be supplied to foreign fishing vessels if there is any danger that Canadian requirements for fishing purposes cannot be met.

Because Canadian fishing vessels often fuel in United States ports as well as the fact that their vessels are traditional customers, the restrictions will not apply to United States fishing vessels. This arrangement will continue as long as reciprocal privileges are available to Canadian fishermen in United States ports.

## OIL RATIONED FOR ICELANDIC VESSELS IN FOREIGN PORTS

Icelandic fishing vessels are now subject to oil rationing in many foreign ports, especially in Western Europe reports the Worldwide Information Service. In some ports the maximum has been set at 40 tons, and if more oil is requested, special permission has to be gained from London. There is no shortage of oil at present in Icelandic ports, yet foreign vessels do not get unlimited oil supplies.

Eighty percent of Iceland's oil supplies comes from the Soviet Union and this has been so since 1953. Originally the oil was bought in exchange for fish and fish products. The remaining 20 percent, which is mainly lubricants and aviation fuel, comes from the west.

Iceland's fishing fleet is heavily dependent upon Soviet oil. Prices are expected to go up tremendously and the foreseeable price increases in oil and fishing gear (produced from oil) are expected to cost the Icelandic fishing fleet at least US\$12,000,000 in 1974. Many fear that the price of oil will go still higher.

### *Fishery Notes*

## Alaska Sockeye Salmon Get More State Protection

The Bristol Bay and Alaska Peninsula red salmon runs will be managed for maximum escapement next season under a policy adopted by the Board of Fish and Game.

Carl Rosier, director of the department's commercial fisheries division,

### *Foreign Fishery Developments*

## Petroleum Shortages Hit Fishing Vessels

### CANADA'S FOREIGN FISH FUEL CUT SPARES U.S.

In view of possible shortages of petroleum products in Canada, the supply of fuel for foreign fishing vessels will be cut back. The order, announced November 30, 1973 under the Coastal Fisheries Protection Act, became effective immediately, according to Fisheries Minister Jack Davis.

It is anticipated that the kind of fuel that has been made available to foreign fishing vessels may be in short