Atmospheric Administration. Mr. Knecht has served as Acting Director of the office since its establishment in May.

The Office of Coastal Environment was formed to manage NOAA's responsibilities under the Coastal Zone Management Act of 1972, the Marine Protection, Research and Sanctuaries Act of 1972 (the Ocean Dumping Act), and related activities. Operating under NOAA's Associate Administrator for Marine Resources, OCE presently consists of the Coastal Zone Management Program, Marine Eco-Systems Analysis (MESA) Program, and Manned Undersea Science and Technology (MUS&T) Program.

"America's coastal areas are immensely productive, often ecologically fragile and much sought after for recreational activities," Mr. Knecht said. "Our aim is to help ensure their continued health, beauty, and productivity for our benefit. Our mission is to encourage and assist the States and other interested groups in the rational planning and coordinated management of these vital but often-neglected areas."

Mr. Knecht was formerly Deputy Director of NOAA's Environmental Research Laboratories, Boulder, Colo., and came to the Washington area in 1972 to head the Coastal Zone Management Task Force. He has been in government service in the Department of Commerce since 1949 as a research physicist in the National Bureau of Standards and later in the Environmental Science Services Administration and in NOAA.

Tokyo Fisheries Attache is Named

The Commerce Department's National Oceanic and Atmospheric Administration has announced the appointment of Lorry M. Nakatsu, 47, a career employee of the National Marine Fisheries Service, as U.S. Regional Fisheries Attache to Tokyo. He replaces Clinton E. Atkinson who has held the position since 1966 and who plans to retire in November 1973.

Mr. Nakatsu will be responsible for reporting on fisheries developments, representing the United States at fisheries meetings and activities, assisting the U.S. fishing industry in locating both markets and sources of supply overseas, and reporting on economic, political, scientific, and legal developments on fisheries matters which may affect the U.S. in East and Southeast Asia.

Until recently Mr. Nakatsu headed the Foreign Fisheries Program in the International Activities Staff of NOAA's Fisheries Service, and was responsible for collecting, analyzing, and evaluating information on significant fisheries developments in foreign countries. Earlier in his career, after being graduated from the University of Washington's College of Fisheries in Seattle, he served as a salmon biologist at the NMFS laboratory in that city. In 1960 he was named head of a newly established program in the NMFS Regional Office at Terminal Island, California, to monitor and analyze the world's tuna fisheries with emphasis on the Japanese fisheries. He was transferred to Washington in 1966 and on a number of occasions participated in fisheries negotiations with Japan, the Soviet Union, and Canada. He also served as an adviser to the U.S. delegation to the International North Pacific Fisheries Commission.

Mr. Nakatsu, who is of Japanese ancestry, has a fluent knowledge of the Japanese language, having served as a linguist with the U.S. forces in World War II and as a translator for nearly four years in post-war Japan.

Foreign Fishery Developments

OECD Fish Catch Drops, Imports Gain

The 1972 catch by the fishing fleets of member countries[1] of the Organization for Economic Cooperation and Development (OECD) totaled almost 23 million metric tons, a drop of 400,000 tons from 1971, according to OECD's *Review of Fisheries, 1972*. The total value of this catch will increase by 5 percent to about US $9.2 billion.

Reflecting rising demand and the increase in landed value, imports of fish products by OECD countries was nearly US$3.8 billion, up 24 percent from 1971 and their exports gained 20 percent in value to reach US$2.6 billion. This expansion reflected the movement of greater quantities of many products as well as generally rising prices.

In the first quarter of 1973, markets continued buoyant and prices rose steadily. With little immediate prospect of larger supplies either of fish or other animal foods, a further build-up of demand pressure is believed likely.

In a period of widespread economic uncertainty such as prevailed in 1972, the continuing expansion of international trade in fish and fish products was notable. The relatively high escalating prices generally paid for fish which were in short supply tended to stimulate fleets to more intensive fishing of many resources which were already heavily exploited. The outcome of a downward trend in vessel catch rates was intensification of management measures which tended to narrow the fishing areas for many countries. The multiplying claims to wider national fishery preserves raised considerable dismay among many major fishing nations.

Intensified demand for high valued shellfish exerted growing pressure on supply which could only be enlarged within limitations and consequently

[1] Australia, United States, Canada, Japan, United Kingdom, Norway, Iceland, Denmark, Portugal, Spain, France, W. Germany, Belgium, Ireland, Italy, Greece, Netherlands, Sweden, Turkey, and Finland.

shellfish prices advanced to record levels on world markets. Most notable were increases in imports of shellfish by France and Japan. Shortages of certain U.S. fillets and blocks caused similar rise in prices for those products. Indications are that per capita consumption resumed its upward trend and would have been more pronounced had supplies of products been available. In practically all countries, an imbalance between supply and demand for protein foods resulted in steep price rises for many agricultural and fishery products.

Improved earnings in the fishing sector were noted even though many of the major catches were less than in previous years. Vessel construction and operating costs continued to increase. Although earnings were favorable, there was no evident reduction in government financial aid given to fisheries. Some reductions were noted in operational subsidies in a few countries but little, if any, reductions were made in the supports provided to shipbuilding. Indications were that more favorable financial returns stimulated more fishermen and vessel owners to take advantage of whatever assistance was available to improve their fishing equipment.

An intensification of international cooperative action showed some progress toward the advancement of fisheries and the conditions under which fisheries are operated. The U.N Conference on the Law of the Sea continued its extensive preparatory arrangements for the conference scheduled to get under way in 1974. The Sea-Bed Committee provided a forum for most countries to express their views on fisheries jurisdiction and certain lines of agreement were beginning to emerge. The U.N Conference on Human Environment led to a number of anti-pollution and conservation measures.

International trade by leading countries showed that the United States imports neared US$1,467 million followed by Japan ($618 million), the United Kingdom ($313 million), France ($227 million), West Germany ($174 million), and Italy ($172 million). The leading exporter was Japan ($527 million), followed by Canada ($380 million), Norway ($363 million), Denmark ($250 million), and the United States ($160 million).

Australian Abalone Exports Expanding

The astonishing expansion of the abalone fishing industry in Australia is the subject of a paper by Dr. D. G. James and Dr. June Olley of the Commonwealth Scientific and Industrial Research Organization, Tasmania. It is to be presented to the forthcoming World Technical Conference on Fishery Products, being convened by the Food and Agriculture Organization of the UN (FAO), in Tokyo from 4 to 11 December 1973 at the invitation of the Government of Japan.

The paper on the abalone points out that in the ten years since the fishery started commercially it has grown in value to US $10 million a year in export earnings—more than 10 percent of Australia's total export earnings from fishery products.

The abalone, which is a snail-like marine mollusc, is taken by divers who prise it off rock ledges. The commercial fishery is around the coasts of Tasmania, Victoria and South Australia. It has been controlled through the state government fishery departments from the start to conserve stocks.

Divers are licensed and the number permitted to operate in any area is limited. There is also a minimum size limit to protect the young stock so that the fishery is managed in order to ensure that the maximum sustainable yield is not exceeded. Strict quality and hygiene standards are enforced, all processing premises and operations being subject to inspection and regulation by the Commonwealth Department of Primary Industry.

Practically the entire catch is exported in various forms as Australians have not so far acquired a taste for abalone. The mollusc is produced frozen, canned, and dried. Abalone steaks are also produced. There is, too, a market in Japan for raw abalone for eating as "sushi" and "sashimi". This requires the abalone to be, preferably, delivered alive, which calls for air freight transport. The problems of this are being investigated. As the authors say, "The future of this trade depends on rapid handling and immediate marketing on arrival in Japan".

The paper will be one of about 80 to be presented at the Conference which will review, for the first time, the world situation in the fishery products industries.

ROK Eyes Fish Lead

The Republic of Korea (ROK) in 1976 plans to increase her fishery production to 2,151,000 metric tons from 1,324,000 tons harvested in 1972, according to the NMFS International Activities Staff. The Republic of Korea, which in 1972 was the twelfth largest fishing nation in the world and the fifth leading fish exporter, in 1976 plans to move ahead to fifth place in output and second place in exports, and in 1981 hopes to become the world's leading fish exporter.

Based on 1960 as 100 percent, ROK fish production in 1972 increased 370 percent in quantity and her fish exports (worth US$150.8 million) jumped 2,143 percent in value. Fish production target for 1973, set at 1,526,000 metric tons, and fish export target, fixed at $189 million, represent gains of 426 percent and 2,700 percent, respectively, as compared to 1960. In 1976, ROK plans to export oysters worth $30-50 million. The ROK Government, which concluded a shellfish sanitation agreement (also includes price agreement) with the United States in November 1972, is placing high priority on oyster cultivation because of the expanding export trade for that product and declining worldwide trend in oyster production due to water pollution.

Aquaculture in the Soviet Union[1]

The Soviet Union has large natural and artificial inland water reservoirs with which to develop fresh water and subsaline water type farms as the major source of providing the population with fish. Soviet research institutes have also for several years been working on the development of marine fish-breeding. Thus, for instance, they have found a way to breed the kalkan, a Black Sea variety of plaice.

At the present rate of development, the annual fish culture production will reach 30 to 40 million tons by 1980 and account for approximately 65 percent of the total catch of fish in the world.

There are at least two reasons for this fish-breeding "boom." First, the concept of the inexhaustible reserves of fish in the world ocean has proved to be an illusion. And second, the accelerated development of marine biology, ecology, and engineering, makes it possible to turn fish breeding into an intensively developed branch of the economy like cattle breeding, increases productivity many times per area unit, and makes it highly profitable and capable of withstanding competition.

An experimental farm was set up in Posiet bay in the Far East in 1972 to grow and cultivate scallops, oysters, trepang and some other kinds of fish. In the near future this region will become one of the basic sites of the development of marine fish culture in the USSR.

In the Taganrog bay of the Azov Sea and along the Baltic coast, fish have been grown in sea ponds for two years now. Each acre of the water area yields up to 12 metric tons of herbivorous fish, of carp and a sturgeon hybrid. Trout grown in the subsaline water fish ponds of the Pyarnu bay in the Baltic Sea develop one and a half to two times faster than in fresh water and have a higher percentage of fat.

A whole network of fish-breeding farms soon to be built in the USSR will make it possible to reduce commercial fishing of some valuable kinds of sea fish, whose population has been declining at a disastrously rapid rate, without affecting the amount of fish products in the Soviet people's diet.

Another important part of the problem of controlled fish-breeding is the artificial breeding of marine fish which, Soviet scientists believe, could increase and supplement the natural population. This is a very complex problem as it includes the study of all the stages of the fish life cycle. The fry obtained must be in no way inferior to the fry produced by natural spawning.

The artificial reproduction of fish was first tackled in the USSR on quite a wide scale as far back as the 1930's and 1940's in connection with the adoption of measures for the control of the fishing economy in the Caspian and the Azov seas. At present 70 million sturgeon fry are let out annually into the Caspian and Azov seas. This greatly exceeds the potentials of natural spawning.

Much has been also achieved in the artificial breeding of the Atlantic and Pacific salmon. The Soviet Union has several large fish nurseries for the breeding of the Baltic salmon and dozens of fish farms for the breeding of the Pacific salmon. The production of these nurseries is numbered in millions of fry, while the commercial return sometimes amounts to 5 to 7 percent. Along with Japan and the United States, the USSR can be considered with the largest producers of salmon fry in the world.

At present Soviet research institutes are also studying the life cycle and migratory patterns of such sea water fish as plaice, cod and ocean herring. The researchers are working out techniques to stimulate growth, methods of incubation and ways of providing the larvae with food.

At the Pacific Scientific-Research Institute of Fishing Economy and the Institute of the Biology of the Sea of the Institute of the Biology of the Sea of the USSR Academy of Sciences in Vladivostok, a series of experiments are being carried out to breed many sea animals and plants, such as large sea staff and other algae, scallops, oysters, trepang, plaice, red rock trout, mullet and others.

[1] The author, Sergei Doryshev is in charge of a laboratory at the USSR Scientific-Research Institute of Fishing Economy and Oceanography. His article is provided courtesy of the Novosti Press Agency, Moscow.

Japan Explores Papua New Guinea Shrimp

The Papua New Guinean government recently permitted three Japanese fishery firms to conduct experimental shrimp fishing in the Gulf of Papua for six months, until the end of December, according to Japanese press reports. Two of the firms, Kyokuyo and Hokoku Suisan, which are conducting fishing in Papua New Guinea in partnership with Australian interests (Gollin Kyokuyo Fishing Company and New Guinea Marine

Products Company) plan to operate five and four vessels, respectively, and a Taiyo-affiliated trading firm will employ two vessels, for a total of 11.

Papua New Guinea, an Australian territory which is scheduled to become a self-governing state in December 1973, for several years has been focusing attention on the development of the fishing industry for establishment of an independent economy and has been actively seeking foreign fishery investments, particularly from Japan.

The shrimp exploratory survey is the administration's second fishery development project, the first being the skipjack fishing and canning venture by the Papua New Guinea Canning Company, which is likely to begin commercial-scale operations next year with the participation of Japanese, American, and Australian interests.

Publications

Recent NMFS Scientific Publication

NOAA Technical Report NMFS CIRC-376. Colton, John B., Jr., and Ruth R. Stoddard. "**Bottom-water temperatures on the continental shelf, Nova Scotia to New Jersey**." June 1973. 55 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Price: 60 cents. (No abstract.)

Monthly Fishery Market Review

Tight Supplies, Heavy Demands Are the Rule

FISH FILLETS

Supplies of major groundfish fillets (cod, flounder, haddock, and ocean perch) available for consumption in June were well above a year ago (Table 1). Gains in consumption of fillets, however, fell far short of matching the increases experienced on the supply side. The result has been a large inventory buildup of major fillet items during the first half of the year.

The fact that consumption has not kept pace with growing supplies does not appear to be closely related to higher prices (Table 2). Rather, stockpiling of fillets appears to have become a major inventory strategy this year. Fillet inventories are now more than double year ago levels (Tables 3-6). In the coming months, the meat and poultry shortage is expected to become acute. Demand for fishery products, in turn, likely will increase and the heavier inventories will be available to satisfy any increase in demand.

It is also expected that import prices for fillets, cod in particular, will increase for the following reasons: a) poor catches in most major supplying nations; b) strong world demand; and c) continued currency realignments.

Given this outlook, many U. S. processors, by purchasing heavily now, may be trying to hedge against future fish supply difficulties and price competition with foreign buyers.

BLOCKS, STICKS, AND PORTIONS

The block shortage continued to worsen in June compared with a year ago, although there was some very slight improvement in holdings from the previous month (Table 7).

Imported block prices had been soaring all year (Table 8), and by June the margin between the raw material (blocks) and the finished goods (sticks and portions) had narrowed to a point where the replacement cost of the raw material was higher than the revenue received from sales of the finished goods (Figure 1). The announcement of the price freeze in early June placed sticks and portions producers in a cost-price squeeze since imported block prices were free to increase while stick and portion prices remained fixed under the freeze regulations.

There is little hope for immediate improvement in block supplies; however, relaxation of price controls in Phase IV will permit processors of sticks and portions to pass on some of their higher raw material costs.

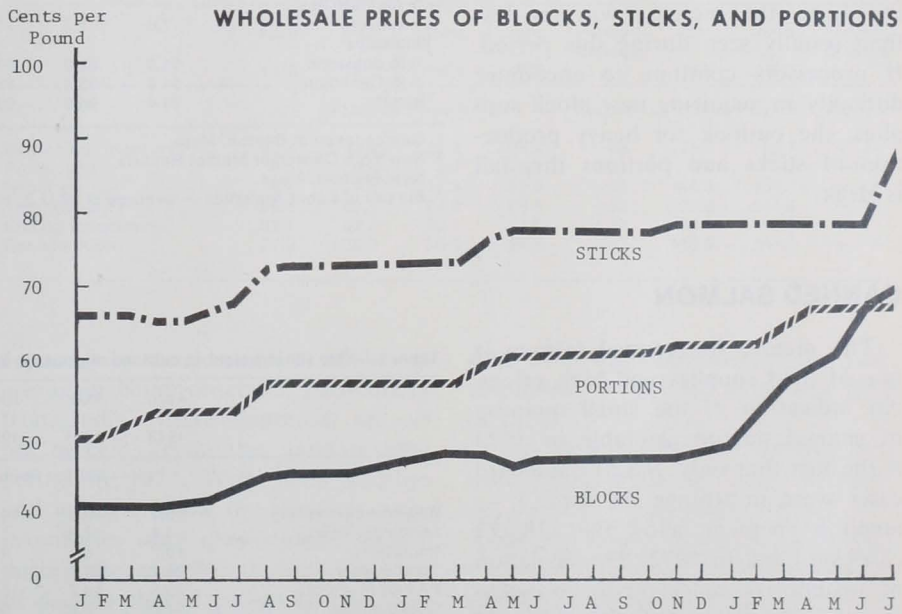

Figure 1.—Wholesale prices of blocks, sticks, and portions.