Great Lakes Fishery Catch, Value Listed

The 1975 catch by U.S. and Canadian Great Lakes commercial fishermen amounted to 101.1 million pounds and was down nearly 25 million pounds or 20 percent from the exceptionally high total of 126 million pounds in 1974. Both the U.S. and Canadian catches—60.7 and 40.4 million pounds, respectively—were lower than the previous year, although the landed value of the 1975 Canadian harvest reached a record high of $9.6 million. For the United States, the ex-vessel value of the 1975 catch was $9.0 million compared to $10.5 million in 1974. These findings and those that follow are derived from a Great Lakes Commission analysis of final 1975 catch statistics compiled by Ontario's Ministry of Natural Resources and the Great Lakes Fishery Laboratory, U.S. Fish and Wildlife Service, in Ann Arbor, Mich.

A major factor in the 1975 U.S. production decrease is attributable to the Lake Michigan alewife harvest which went from a record level of some 45.5 million pounds in 1974 to 35.2 million in 1975, a drop of 22.7 percent. However, in addition to this decline of some 10.3 million pounds, most of the other prominent species in the U.S. catch also contributed to the overall decrease of 17 million pounds in the 1975 catch (see tables on next page). For the Great Lakes states, the extent of the 1975 catch by commercial fishermen in the jurisdictional waters of each was as follows (in thousands of pounds): Illinois, 240; Indiana, 199; Michigan, 12,009; Minnesota, 1,213; New York, 600; Ohio, 7,305; Pennsylvania, 313; and Wisconsin, 38,781. The alewife portion of the catch was: Illinois, 27; Indiana, 12; Michigan, 3,678; and Wisconsin, 31,498.

In Canada, the drop of nearly 8 million pounds in the lakes commercial catch from 1974 to 1975 was primarily due to declines in the Lake Erie production of yellow perch and of such low-value species as alewives, shad, and others used for animal food. Most of the other species in the Canadian catch, however, showed moderate increases in production or remained about the same as in 1974.

The data in the accompanying tables provide a summary of the weight and dollar value of the catch by commercial fishermen during the past two years for each of the Great Lakes and for the principal species caught in U.S. and Canadian waters. Some of the specific features and developments which have had noteworthy roles in the status of the fisheries in the several lake basins are indicated below.

LAKE MICHIGAN

Landings in the four states bordering this lake totaled 45.3 million pounds in 1975, down some 14.3 million pounds or 24 percent from the previous year but continuing to account for about 75 percent of the U.S. Great Lakes catch, by weight, and for half the value of the eight-state total. This disparity between weight and value for Lake Michigan's share of the total U.S. landing relates in large measure to the continuing predominance of the low-value alewife in the lake's production. The 35.2-million-pound harvest of this species in 1975 represented 72 percent of Lake Michigan's total in terms of weight, but the landed value of the alewives was less than 9 percent of the dollar receipts from the total catch. Indications are that the decrease of more than 10 million pounds in production of this species in 1975 was prompted by lake ice conditions in the spring and by a lower market demand rather than by a declining alewife population. This small, low-value fish is used for fish meal, oil, and in pet foods.

The 1975 catch of fish other than the alewife totaled 10.1 million pounds which was 4.0 million lower than the previous year. While lake whitefish landings remained virtually unchanged at 3.4 million pounds, the chub catch of 924,000 pounds was some 2.3 million below the 1974 figure. The markedly diminished chub yield is in part due to a decrease in the population of this species which has been declining since 1968 and also results from measures being initiated by the Lake Michigan states to sharply reduce the commercial catch of chubs. Another of the lake's high-value species is the yellow perch, and the 1975 production of 800,000 pounds was down 500,000, or 39 percent from 1974. Noteworthy is the $2.5-million landed value of the lake whitefish which accounted for 54 percent of the Lake Michigan fishermen's dollar receipts in 1975 and for over one-fourth (27 percent) of the value of the total U.S. Great Lakes catch.

LAKE ERIE

The Canadian-U.S. production of 39.0 million pounds last year was 9.5 million lower than the aggregate figure in 1974. As indicated in the accompanying table, a large share of the loss was in the Canadian portion of the Erie fishery which accounted for about 78 percent of the lake's total catch and also for 75 percent of Canada's Great Lakes production in 1975. Smelt and yellow perch continue as the principal species landed by the north shore commercial fishermen, but the yellow perch catch of 8.2 million pounds was 4 million below the 1974 total and down nearly 10 million pounds from 1973. Also contributing to lower Canadian production last year was the sharp decrease in low-value species such as shad, alewives, and others used for animal food; taken as a group, the harvest for 1974 and 1975 fell from 7.7 to 2.1 million pounds.

The four-state U.S. catch was about 8.5 million pounds in 1975, down 1.3 million (14 percent) from the previous year and less than 600,000 pounds above the all-time low of 1972. The principal species accounting for the 1974-75 drop were white bass, from 2.9 to 1.7 million pounds, and yellow perch, from 2.4 to 1.9 million. About 46 percent of the 1975 U.S. production in Erie came from the small western section of the lake which included Michigan landings of 500,000 pounds and about 3.4 million of Ohio's 7.3-million-pound total.

LAKE HURON

Total 1975 landings for the lake was 5.2 million pounds with U.S. (Michigan) production accounting for 36 percent of this weight and for 26 percent of the landed value. A moderate increase in the U.S. catch from the record low in 1974 was prompted by a gain in lake whitefish landings, this species being the highest in dollar value for both U.S. and Canadian fishermen. Chubs and yellow pickerel or walleyes are also important high-value species in the Canadian catch for Lake Huron, which includes Georgian Bay and North Channel, but their production is nil in Michigan waters due to state regulations limiting the areas of commercial operations.

LAKE SUPERIOR

The total catch of 8.5 million pounds in 1975 was 1.5 million below the previous

year and was primarily the result of a drop in Minnesota's smelt landings of about 1.2 million pounds. While production in Canadian waters was below the peak reached in 1974, the landed value of the catch exceeds the $1 million mark for the first time.

	Thousands of pounds		Thousands of dollars	
	1974	1975	1974	1975
U.S. total	77,673	60,660	10,504	9,046
Lake Ontario	332	233	117	98
Lake Erie	9,849	8,486	2,087	1,964
Lake Huron	1,718	1,858	464	630
Lake Michigan	59,720	45,348	6,243	4,562
Lake Superior	6,054	4,735	1,594	1,792
Canadian total	48,363	40,428	8,404	9,609
Lake Ontario	2,364	2,777	506	782
Lake Erie	38,686	30,549	5,634	6,009
Lake Huron	3,371	3,334	1,412	1,806
Lake Superior	3,942	3,769	852	1,011
U.S.-Canadian total	125,736	101,088	18,908	18,655

	Thousands of pounds		Thousands of dollars	
	1974	1975	1974	1975
U.S. total	77,673	60,660	10,504	9,046
Leading species total	73,097	56,218	9,507	7,686
Alewives	45,556	35,216	643	406
Carp	7,058	6,733	396	330
Whitefish	4,369	4,516	3,182	3,030
Yellow perch	3,951	3,037	1,489	1,545
Smelt	4,358	2,573	194	255
Chubs	4,887	2,444	2,837	1,629
White bass	2,918	1,699	766	491
Canadian total	48,363	40,428	8,404	9,609
Leading species total	37,035	33,989	7,262	8,306
Smelt	16,902	17,333	962	1,202
Yellow perch	13,366	9,419	4,246	4,387
White bass	2,356	2,580	406	709
Lake herring	2,135	2,205	390	426
Chubs	980	1,249	460	771
Whitefish	1,296	1,203	798	811

LAKE ONTARIO

U.S.-Canadian production was 3 million pounds in 1975 with about 92 percent of this weight total caught in Canadian waters. There are only two U.S. commercial fishing operations, both based at the east end of the lake. The combined harvest of yellow and white perch from the lake last year totaled nearly 1.1 million pounds. Nearly all the Great Lakes catch of white perch and also eels is taken in Lake Ontario, and for each of these species the 1975 total was about 400,000 pounds. (Source: *Great Lakes News Letter.*)

Maryland Seeks Help for Anadromous Fish

The Mid-Atlantic Fisheries Management Council has recommended that a fish ladder be built at Conowingo Dam to open up traditional spawning areas for shad, herring and other anadromous species of fish, according to the Maryland Department of Natural Resources. The council was established under terms of the Offshore Fisheries Conservation and Management Act of 1976.

Since the shad and herring fisheries of the Atlantic are dependent upon spawning success in the Susquehanna and other such rivers and streams on the east coast, the council is concerned over the blockage of breeding areas by power company dams. The council voted 15-3 late last year to instruct its execu-

Icy Winter Hurts South Carolina's White Shrimp

"We found no live shrimp anywhere," said biologist Charles H. Farmer about winter shrimp surveys by South Carolina's Wildlife and Marine Resources Department. Farmer, head of the Marine Resources Division's Crustacean Management Program, said that the prolonged cold spell of a 6-week period in January and February had a drastic effect on the white shrimp that spend the winter along the South Carolina coast.

Since these same shrimp are thought to make up a substantial portion of the commercial shrimp crop of May and June, Farmer predicts a sharp decline in the white roe shrimp harvest during the early part of the season. Last year's commercial catch of shrimp in May and June totaled 658,000 pounds, worth almost $2.5 million to the industry. This spring, said Farmer, the opening of the season could be delayed to protect the few spawning shrimp that might remain. The white shrimp that spawn in the spring produce the fall crop of white shrimp.

"Only a relatively few spring spawners are necessary to produce a normal fall population," according to Farmer, "but we may have already reached the critical point." During a recent week-long survey of shrimp from Winyah Bay to Hilton Head, Farmer was unable to locate a single live shrimp, either inshore or offshore.

A water temperature of 47°F, over an extended period of time, is considered critical to the survival of shrimp, said Farmer.

Since early January, water temperatures along the South Carolina coast have consistently remained between 41° and 45°F. Even if the weather warmed up, Farmer believed that it would have little effect on shrimp populations. "The damage is already done," he said.

During a normal year some white shrimp may migrate into the state from Georgia, but since northern Georgia has suffered similar conditions of very cold water this winter with a subsequent reduction in white shrimp, Farmer expects no relief from that area. One bright spot for commercial shrimpers is that brown shrimp, which make up the majority of the catch during June, July, and August, have not been hurt by cold winters in the past.

tive regional director to write the Federal Power Commission urging that it require the Susquehanna Power Company to build a fish ladder at the dam if a permit to continue operations at Conowingo is to be granted.

The Fisheries Administration of Maryland's Department of Natural Resources called for a fish ladder at Conowingo when Fisheries Administrator R.J. Rubelmann said Maryland would not renew an agreement in which the power company paid the State a $4,000 annual fee in lieu of constructing the ladder. Fisheries agencies of Pennsylvania and New York, the Susquehanna River Basin Commission, and the National Marine Fisheries Service have also recommended that construction of a ladder be made a condition of any permit issued by the Federal Power Commission for operation of Conowingo Dam.

A drastic decline in the shad fishery of Maryland has occurred within the last 5 years, dropping from over a million pounds annually to 180,936 pounds last year. The Mid-Atlantic Fishery Management Council is made up of members from New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia in addition to the regional director of the National Marine Fisheries Service.

Pacific Coast Troll Salmon Catch Reviewed

Preliminary estimates of the troll catch of chinook (king) and coho (silver) salmon for Alaska, British Columbia, Washington, Oregon, and California for 1976 reached 64.5 million pounds, according to data compiled by David W. Ortman, Idaho Fish and Game Department, for the Pacific Marine Fisheries Commission. The 1976 total is up almost 2 million pounds from the 10-year average catch of 62.7 million pounds. Chinook catches at 26.3 million pounds were less than the 10-year average of 27.1 million pounds. Coho catches at 38.2 million pounds exceeded the 10-year averages in all regions except British Columbia.

TROLL CHINOOK FISHERY

Alaska's troll-caught chinook landings were about 3.9 million pounds in 1976. This was less than the 4.3 million pounds for 1975 and the 5.1 million pounds for 1974. The 10-year average is 4.3 million pounds. The chinook landings by British Columbia troll fishermen were 11.4 million pounds. This was down 800,000 pounds from 1975 and was 700,000 pounds less than the 10-year average. Washington's 1976 troll chinook landings were 4.6 million pounds, 2.0 million pounds more than 1975 and 1.9 million pounds greater than the 10-year average.

Oregon's troll chinook landings for 1976 will be about 2.1 million pounds. This will be about 900,000 pounds less than the 1975 landings and 200,000 pounds larger than the 10-year average of 1.9 million pounds. The troll season opening was delayed this year from 15 April to 1 May. In addition, a small part of the Oregon coast from Tillamook Head to the mouth of the Columbia River was closed from 15 June to 1 July. These changes made a small reduction in catch.

The estimated 1976 California troll chinook landings are 4.3 million pounds. This represents the poorest chinook landings since 1958 when landings totaled only 4.1 million pounds. San Francisco-Monterey area trollers landed only 2.3 million pounds of chinook, down 100,000 pounds from 1975. San Francisco-Monterey area landings amounted to only 50 percent of the 10 year average for that area.

TROLL COHO FISHERY

Alaska's 1976 troll coho landings were about 4.7 million pounds compared to 1975 landings of 1.5 million pounds. The figure was approximately 17.5 percent above the 10-year average of 4.0 million pounds. British Columbia's troll coho landings for 1976 are expected to be about 12.1 million pounds. This will be 3.0 million pounds more than the 1975 landings and 4.9 million pounds less than the 10-year average of 17.0 million pounds.

Washington's troll coho landings for 1976 totaled about 7.2 million pounds, approximately 1.8 million pounds above the 10-year average. Oregon's troll coho landings for 1976 will be about 10.5 million pounds, a record high. This will be about 5.8 million pounds above the 1975 landings and 4.0 million pounds larger than the 10-year average.

California's troll coho landings were 3.7 million pounds, the fourth highest year on record. This is significantly better than 1975 landings of 1.3 million pounds and the recent 10-year (1966-75) average of 2.7 million pounds. The leading port was Eureka with 1.5 million pounds followed by Crescent City with 750,000 pounds. Approximately 92 percent of California's statewide coho landings were landed during the first 2 mo (15 May-15 July) of the coho season.

Publications

NMFS Scientific Reports Published

NOAA Technical Report NMFS CIRC-396. Leatherwood, Stephen, David K. Caldwell, and Howard E. Winn. **"Whales, dolphins, and porpoises of the western North Atlantic. A guide to their identification."** August 1976. 176 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

ABSTRACT

This field guide is designed to permit observers to identify the cetaceans (whales, dolphins, and porpoises) they see in the western North Atlantic, including the Caribbean Sea, the Gulf of Mexico, and the coastal waters of the United States and Canada. The animals described are grouped not by scientific relationships but by similarities in appearance in the field. Photographs of the animals in their natural environment are the main aids to identification. A dichotomized key is provided to aid in identification of stranded cetaceans and appendices describe how and to whom to report data on live and dead cetaceans.

NOAA Technical Report NMFS Circular 397. Larson, Ronald J. **"Marine flora and fauna of the northeastern United States. Cnidaria: Scyphozoa."** August 1976. 18 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

ABSTRACT

This manual is an introduction to the scyphomedusae found in coastal waters from Maine to the Chesapeake Bay. It includes a discussion of their identification, collection, rearing, preservation, and nematocysts. Also included is an introduction to the natural history of the scyphopolyps and medusae, a discussion of stinging scyphomedusae, a glossary of terms, an illustrated synopsis of ephyrae, an illustrating key to the scyphomedusae (including the Stauromedusae), an annotated systematic list, a bibliography of major references, and finally an index.

NOAA Technical Report NMFS SSRF-703. Vondruska, John. **"Aquacultural economics bibliography."** October 1976. 123 p.

ABSTRACT

This aquacultural economics bibliography includes recent published and some unpublished United States and foreign literature (originally in or translated into English). Based upon U.S. aquacultural activity and interests, the 262 entries are listed alphabetically within eight categories: catfish, trout, salmon, oysters and other mollusks, shrimp and other crustaceans, other animal species, seaweeds, and general. Included literature concerns production economics, methodology, demand, supply, markets and marketing, institutions, constraints, state of the art, investment analysis, data, and other subjects. Some entries are general, or primarily descriptive, or of primarily noneconomic content.

Catalogs of Specialized U.N. Books Are Available

Catalogs describing publications of two specialized agencies of the United Nations, the Food and Agriculture Organization (FAO) and General Agreement on Tariffs and Trade (GATT) have now been published.

"FAO Books in Print, 1976-77" is an 87-page catalog covering such subjects as world agriculture, food and nutrition, plant and crop science, animal science, forestry, fisheries, land and water management and conservation, commodity production and marketing, pest control, farm management and rural development. Publications include monographs, series publications, manuals, periodicals, and statistical compilations. Titles are indexed by author and by subject.

"Publications of the General Agreement on Tariffs and Trade, 1976" describes available titles of interest to the business, finance, marketing, and export/import community. Publications cover decisions, resolutions, recommendations, and reports adopted by the Contracting Parties to GATT; international trade by commodity, region, and country; trade in agricultural products; trade of developing countries; tariff structure, schedules, and protocols.

Both catalogs are available free on request from Unipub, exclusive U.S. distributor for FAO and GATT publications. Send requests to: UNIPUB, Box 433, Murray Hill Station, New York, NY 10016.

SALMONID CULTURE HANDBOOK UPDATED

The long-awaited Fish Bulletin 164, "Trout and Salmon Culture (Hatchery Methods)," is now available, the California Department of Fish and Game has announced. Bulletin 164, which replaces Bulletin 107, is available at $3 per copy from the Office of Procurement, Documents Section P.O. Box 20191, Sacramento, CA 95820. Bulletin 107 has been out of print for several years, the DFG said.

Lugworm Culture Methods and Economics Detailed

For years the lowly lugworm has been used as a major bait by both commercial and sports fishermen in the British Isles, on the European continent, and in Korea, Japan, and South Africa. But, because they are difficult to harvest in the U.S., lugworms are used only occasionally as bait. Instead, bloodworms and sandworms are North America's major bait worms and they are used chiefly along the east coast between New York and North Carolina and on the California coast where they sell for about $1.85 per dozen. Demand often exceeds supply which forces prices up still further.

For the past 3 years, however, researchers at the University of West Florida, under funds from the Florida Sea Grant Program, have been investigating the feasibility of raising lugworms commercially, thus making them more readily available as a sports fishing bait. Results of this research are now available in Florida Sea Grant Report No. 16, **Lugworm Aquaculture,** by Charles N. D'Asaro and Henry C.K. Chen.

According to Chen, commercial fishermen are unanimous in feeling that the lugworm is not practical for their needs because of the price which is much higher than the cut bait they routinely use. But with sport fishermen it is a different story. Their fishing time is often limited. So when they have an opportunity to fish, they want a bait that is reliable, regardless of a somewhat higher cost. Lugworms, according to D'Asaro, are delicious to the fish and are durable worms which will definitely do the job. They are particularly effective with redfish, he says.

The report not only details a hatchery plan but also contains economic data on marketing and financial aspects of lugworm hatchery operation. According to the report, one million worms must be marketed per year if the operation is to be commercially successful. To realize this level of production, approximately 1.5 acres are needed in grow-out space.

Also needed are some inexpensive plastic liners for constructing the grow-out units, the right kind of food for the worms, and of course, the necessary "know how" to make the entire system work. Not a great deal of patience is required, however, since marketable worms can now be ready for harvest in 90 days.

Single free copies of this report may be obtained from the Marine Advisory Program, G022 McCarty Hall, University of Florida, Gainesville, FL 32611.

Germany Prints Annual 1974-75 Fishery Report

The Ministry of Food, Agriculture and Forestry of the Federal Republic of Germany has published its "Annual Report on German Fisheries 1974-75." The report contains over 250 pages and is in German, with English summaries at the end of each chapter. Tables are titled in both English and German, and detail all aspects of German fisheries, including landings, trade, fleet fishermen, fishing grounds, and research. The report uses data and statistics from 1973 and 1974. For a copy of this report, write to the Federal Statistical Office, Ministry of Food, Agriculture and Forestry, Bonn, Federal Republic of Germany.