Canadian Survey Shows Sportfishing is a Big Business

Highlights of Canada's nationwide angling survey released in mid-year by Fisheries Minister Roméo LeBlanc leave no doubt that sportfishing is big business in that nation.

The survey, carried out in 1976 and covering the year 1975, reveals that 6.4 million persons of all ages went sportfishing in Canada in 1975. Of this total, 5.4 million were Canadians, and over a million were visiting anglers, primarily from the United States. Anglers under 16 and those under the legal licensing age in certain provinces made up to 1.7 million of the total, Fisheries and Environment Canada reports.

In total, anglers fished 75 million days and caught almost a quarter of a billion fish. While brook trout, perch, walleye, and northern pike topped the list of most fish landed, the agency listed several marine species among the nation's "premier gamefish." Those were the Pacific and Atlantic salmon, steelhead trout, and bluefin tuna. The insport catch was: Atlantic salmon, 467,000; coho or silver salmon, 1,221,000; chinook salmon, 503,000; and bluefin tuna, 540. The rod-and-reel landed bluefin tuna averaged 845 pounds each. The Pacific salmon (coho and chinook) catch includes the Canadian Great Lakes catch.

Table 1 also lists the top 16 species of fish landed by anglers in Canada. However, Fisheries and Environment Canada points out that Atlantic cod and mackerel, a significant part of the east coast tidal sport fisheries, are underrepresented owing to the limited survey of anglers who fished those waters. Species are ranked in order of total numbers of fish caught and retained by anglers. The first four (yellow perch, brook trout, walleye, and northern pike) account for over half the total.

The survey is the most comprehensive of its kind ever carried out in Canada, and the first devoted exclusively to sportfishing. It was planned and organized by the Recreational Fisheries Branch of the Fisheries and Marine Service in cooperation with the sport fisheries licensing and management agencies of the provinces and territories. Separate surveys were conducted early in 1976 by all 13 of the provincial, territorial, and federal agencies involved. Some 50,000 questionnaires were mailed out, of which approximately 30,000 completed questionnaires were returned. These were processed by the Recreational Fisheries Branch and provided the basis for the nationwide figures given in the survey report. Several provinces also used their surveys to develop supplementary information for their own specific purposes. It is planned to repeat the survey every 5 years.

"The number of anglers and the dollars involved reflect the importance of Canada's recreational fisheries," said LeBlanc. "I am sure the information provided by the survey will do much to increase public understanding of sport fisheries and should have a significant influence on the future management of Canada's fisheries resources."

A final report giving comparable information broken-down by province, territory, and federal area of jurisdiction will be available in published form later this year. Additional details may be obtained by writing to the Director, Recreational Fisheries Branch, Fisheries and Marine Service, 240 Sparks Street, Ottawa, Ontario, Canada K1A 0E6.

Note: Unless otherwise credited, material in this section is from either the Foreign Fishery Information Releases (FFIR), compiled by Sunee C. Sonu, Foreign Reporting Branch, Fishery Development Division, Southwest Region, NMFS, NOAA, Terminal Island, CA 90731, or the International Fishery Releases (IFR) or Language Services Daily (LSD) reports produced by the Office of International Fisheries, NMFS, NOAA, Washington, DC 20235.

Table 1.—Numbers of fish caught and retained, by species (in thousands).

Fish species	Residents	All nonresidents	Total
Yellow perch (*Perca flavescens*)	37,413	5,898	43,311
Brook trout (*Salvelinus fontinalis*)	37,628	801	38,429
Walleye (*Stizostedion vitreum*)	14,664	6,797	21,461
Northern pike (*Esox lucius*)	12,305	3,990	16,295
Catfish (*Ictalurus nebulosus*)	7,924	143	8,067
Smallmouth bass (*Micropterus dolomieui*)	6,366	1,489	7,855
Rainbow trout (*Salmo gairdneri*)	7,012	729	7,741
Atlantic tomcod (*Microgadus tomcod*)	6,309	—[1]	6,309
Lake Trout (*Salvelinus namaycush*)	5,638	648	6,286
Atlantic cod (*Gadus morhua*)	4,433	—[1]	4,433
Bass (unspecified)	4,068	289	4,357
Largemouth bass (*Micropterus salmoides*)	3,353	665	4,018
Trout (unspecified)	3,658	79	3,737
Perch (unspecified)	3,013	170	3,183
Whitefish (unspecified)	1,967	222	2,189
Atlantic mackerel (*Scomber scombrus*)	1,763	—[1]	1,763
Others[2]	41,582	7,654	49,236
Canada total	199,096	29,574	228,670

[1]Numbers caught and retained are not considered to be statistically reliable.
[2]Although retention of over 18 million rainbow smelt (*Osmerus mordax*) is included, the methods of catch and the size of the species is such that a relative comparison, for purposes of this table, is not meaningful.

Japanese Seiner Takes Indian Ocean Skipjack

The Japanese Kyokuyo Fishery's tuna purse seiner *Wakaba Maru No. 2* (499 GT) sucessfully completed its first voyage in the Indian Ocean, and returned to Singapore on 13 April with 315 tons of skipjack it had caught in 27 days of fishing after leaving the port on 11 March. The vessel left on 21 April for a second fishing voyage in the Indian Ocean after selling the catches to a U.S. packer.

On its first voyage, the *Wakaba Maru No. 2* made a total of 17 sets in waters between 30 and 200 nautical miles off the coast of Sumatra, averaging 11.6 tons of daily catches or 18.5 tons per set. The vessel's highest catches were between 40 and 50 tons a day, a record essentially equaling those in the established fishing grounds off Papua New Guinea. Fish sizes were relatively small nearer the coast, ranging from 1.45 to 2.3 kg, but they grew distinctly larger in the offshore area between 2 and 5.5 kg.

The fishing ground west of Sumatra was chosen because of the infrequent occurrences of stormy weather in this area during the monsoon season. The lack of drifting wood and the presence of strong ground swell rendered contacts with fish schools difficult, but the favorable weather encountered in this area eventually contributed to the good fishing of the first voyage. The *Wakaba Maru No. 2*'s current operation represents the first venture into the Indian Ocean by the Japanese tuna purse seining industry. (Source: FFIR 78-7.)

Canada Puts $1.25 Million Into Atlantic Salmon Work

Funds totalling $1.25 million for the Economic Growth Component of the Canada Works program will be devoted to projects related to Atlantic salmon enhancement in the Maritimes and Newfoundland during the current fiscal year, according to Fisheries and Environment Canada. Fisheries Minister Roméo LeBlanc said that approximately $750,000 will be spent in New Brunswick and Nova Scotia on such projects as design and feasibility studies for a possible major salmon hatchery at Sherbrooke Lake, N.S., and feasibility and site selection studies for a possible new hatchery in northeast New Brunswick.

In addition, part of the funds will be used to complete the new fishway at Tusket River Falls, N.S., and some $100,000 will be devoted to major fish passage feasibility studies on the Nepisiguit and Tetagouche Rivers in New Brunswick. As well as these specific projects, approximately $150,000 of the Canada Works funds will be spent on general surveys of stream obstructions and fish habitats in New Brunswick with a view to improving salmon runs.

The enhancement projects tie in with a comprehensive review and analysis of the Atlantic salmon fisheries started last year by the Canadian government. The review, expected to be completed later this year, is examining the biological, economic, and social factors associated with the Atlantic salmon fishery and will lay the groundwork for a comprehensive management plan, including the feasibility and appropriateness of a major enhancement program for eastern Canada. Commercial fishing for Atlantic salmon in the New Brunswick and Quebec-Gaspé areas has been banned since 1972 as a conservation measure to allow the stocks to rebuild.

British Columbia "B" Salmon Vessels Aided

Licences of 103 salmon fishing vessels in the "B" category in British Columbia, Canada, will be extended by 5 years, enabling them to continue fishing until 31 December 1983, according to Fisheries and Environment Canada. The licences were due to expire at the end of this year.

The vessels involved are those which have been continuously owned and licensed by the original licensees since the Salmon Vessel Licence Control Program was put into effect in 1969. This program, which set a life span of 10 years for the "B" licences, was aimed at improving economic conditions in the west coast salmon fishing industry where the fleet has been too large in numbers in relation to the salmon available.

All other "B" category salmon vessel licences will expire either at the end of this year or at the conclusion of their 10-year life span, depending on when the vessel was designated as falling in this category. This involves a total of about 480 vessels.

Since 1969, vessel owners have had the option of changing from the higher category "A" licence to the lower category "B" licence, which carries a considerably lower licence fee. Roméo LeBlanc, Fisheries Minister, explained that the extension is being granted to the original "B" licensees because they had no choice in the matter when the program was introduced in 1969, whereas those who subsequently opted to switch to the "B" category, did so with the full knowledge of the conditions of the licences.

In order to maintain their status for an additional 5 years, the 103 vessels which are eligible to continue in the B.C. salmon fishery are subject to the following conditions:

1) The licence privilege is nontransferable; 2) the vessel must be owner-operated; and 3) proof must be provided that the vessel is catching salmon each year. LeBlanc added that the appeal process remains open for individuals affected by the decision who feel there are extenuating circumstances in their particular case.

Scotland Nuclear Center Aids Fish Cultivation

The first nursery for commercial breeding of flounder and sole has been constructed adjacent to an electrical nuclear center in Hunterston, Scotland. The nursery, administered by Golden Sea Produce[1], occupies approximately 2.5 hectares next to the center and is

[1]Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

complete with large tanks similar to swimming pools where these species are raised for commercial purposes.

The artificially raised fish will be sold to restaurants and individual consumers. If flounder sales this year reach more than the anticipated 100 t, this nursery will produce one-tenth of the total flounder consumption in the United Kingdom.

The fish center will take advantage of the residual ocean water used by the nuclear factory to eliminate excessive heat, but which never has contact with radioactivity. Normally, this water is returned to the sea at higher temperatures, but in Hunterston it is diverted to supply a constant stream of warm water through the breeding tanks. The cold water of the North Sea during the winter months inhibits growth of the fish due to decreased food consumption. At the nursery, the warmer water encourages consumption and growth year round.

Through this species cultivation process, very young fish that by law cannot be caught will be made available for sale. The nursery will also offer large flounder for fillets, directly competing with fishermen who also supply this resource.

In the tanks, each fish is numbered and closely observed by Golden Sea Produce scientists who select the best individuals to create various specialties. This process reportedly may form two separate flounders: Those that grow rapidly and become "baby" flounder, and those that are more conducive to a longer life for the famous fillets.

Although most of the complications with flounder have been resolved, the same is not true with sole. It is a more delicate species and the main problem lies in its refusal to eat, thereby limiting growth.

The nursery's success is due to work initiated more than 10 years ago by the White Fish Authority in the same electrical center. This commission began experimenting with flounder and scientifically proved its ideal adaptability for artificial breeding. The optimum thermal scale for the fish was also discovered in their experiments. Flounder does not flourish in temperatures less than 13°C or above 21°C. Sole, however, can survive at temperatures higher than 8°C, and develops very well between 12° and 19°C. Scientists attempt to reduce the maximum limit to 18°C. (Source: LSD 78-11.)

PRC Elver Exports to Japan Reach Record High

Japanese imports of elvers from Mainland China during March and April this year set an all-time high in volume for this period of the year at nearly 9 tons. The import price was near an all-time high at ¥227,900/kg (US$471/pound at ¥220=US$1) in March, although it dropped to ¥168,700/kg (US$349/pound in April. (Source: FFIR 78-7.)

Japan Okays Papua New Guinea Fishing Terms

Negotiations on a provisional fishing agreement which governs Japanese fishing operations within Papua New Guinea's 200-mile zone came to a settlement earlier this year as the Japanese delegation signed a protocol accepting in full the access and fishing fees as originally proposed by the government of Papua New Guinea.

Under the provisional agreement covering the 9-month period between 1 May 1978 through 31 January 1979, Japanese fishermen within Papua New Guinea's 200-mile zone will pay access fees at the rate of approximately ¥9,900 (US$43.42 at ¥228=US$1) per year for each linear meter of vessel length, and lump sum fishing fee of approximately ¥330 million (US$1.4 million) for the 9-month period. No limit has been placed on the number of vessels or the amount of catches.

The newly agreed access fee represents a considerable jump over the previous fee schedule of about ¥150,000/year/vessel. Japanese fishing vessels in waters off Papua New Guinea include 14 tuna purse seiners, and approximately 400 skipjack pole-and-liners and tuna longliners. Annual catches by this fleet usually consisted of 4,600 by tuna purse seiners, between 2,000 and 3,000 by tuna longliners, and between 5,000 and 50,000 by pole-and-liners.

Japan's total acceptance of Papua New Guinean terms on access and fishing fees was expected to influence the then ongoing negotiation with the Gilbert Islands and one scheduled with the Solomon Islands, according to informed sources in Tokyo. (Source: FFIR 78-7.)

GOOD TUNA CATCHES REPORTED OFF JAPAN

Unusually good catches of bluefin and skipjack tuna have been reported in waters off the Japanese home islands this year. Catches of bluefin tuna up to May totaled 3,000-4,000 t, almost double the amount caught over the comparable period last year. Informed sources predicted that good fishing for bluefin tuna was likely to continue for some time, since the fishing ground, located in a warm water mass surrounded by large stationary cold water masses to the west of the Izu Islands, appeared to be quite stable.

Catches of skipjack tuna this year up to May totaled approximately 20,000 t, more than 1.5 times the catches recorded over the comparable period last year. The Japanese Fisheries Information Service Center was reportedly predicting continued good fishing for bluefin and skipjack tuna off the Japanese home islands into the fall of this year. (Source: FFIR 78-8.)

Black Cod Test Fishing Conducted off Mexico

Five Japanese fishing vessels reportedly arrived in Mexico early this year to undertake test fishing for black cod in waters off the Pacific coast under the license of the Mexican government. The test fishing program, if successful, will be allowed to evolve into a joint venture with an expanded fishing fleet. Mexico reportedly wishes to export the bulk of the catches to the United States, allowing some to be shipped to Japan. (Source: FFIR 78-7.)