

Fisheries Research.—Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sport fisheries on the respective lakes. In Algonquin Park, detailed studies concerning lake trout, smallmouth bass and brook trout are in progress and management techniques are being tested against the background of a creel census which has been continuous since 1936. Studies are also being conducted on walleyes, parasitology and limnology. A selective breeding experiment concerning the hybrid between lake trout and brook trout is progressing; the deep-swimming character of the lake trout and the character of maturity at early age of the brook trout are those being selected for combination in the hybrid. Co-operation by Ontario in the field of sea lamprey control is being extended through the Great Lakes Fishery Commission.

Manitoba.—Commercial fishing has been carried on in Manitoba since 1895. The province has almost 40,000 sq. miles of freshwater and 400 miles of coastline on Hudson Bay but, altogether, about 155 lakes and rivers, covering 22,000 sq. miles, are commercially fished. Some 3,500 persons are employed in primary commercial fishing and an equal number derive part of their living from fish processing and the supply of materials and services to the industry. The industry is particularly important to people living in remote northern communities where fishing provides a major part of their cash income but, even so, over two thirds of the catch is taken in the southern parts of the province. In 1963-64, Lake Winnipeg produced 10,428,000 lb., Lake Manitoba 7,561,000 lb., Lake Winnipegosis 5,656,000 lb., and other southern lakes 580,000 lb. The northern lakes produced 11,532,900 lb. The total value to the fishermen in 1963-64 was \$4,356,000 and the value as marketed was \$7,429,000. The average annual marketed catch for the past five years was 33,100,000 lb. worth \$3,900,000 to the fishermen and \$6,700,000 at the wholesale level after processing. About half the catch is taken during open water and the remainder through the ice in winter.

There are 15 kinds of fish caught commercially in Manitoba but those of highest annual value to the fishermen are pickerel, whitefish, sauger and pike. Over 90 p.c. of the catch is exported, mostly to the United States. A quantity of the less valuable kinds and some processing waste are used as food on mink ranches and for the making of meal; a small industry to process white whales (beluga) for oil and animal food has been established on Hudson Bay. Capital investment in gear, boats, warehouses, etc., approaches \$6,000,000.

Supervision of commercial fishing operations and the enforcement of the Manitoba Fishery Regulations occupy a staff of Conservation Officers who patrol the province using diesel boats during the open water season, snowmobiles and light trucks during the winter and aircraft in remote areas. The Fisheries Branch of the Department of Mines and Resources, in co-operation with the Department of Health, conducts a systematic program of plant inspection to raise the standard of sanitation and improve the processed product.

A continuing program of biological research is conducted by the Fisheries Branch to provide management information in the interest of a sustained annual yield and a program has been established to test and prove new improved netting and gear which will increase production and lower operating costs. Close liaison is maintained with the federal Department of Fisheries and the Fisheries Research Board in the effort to develop new fish products and effect more complete utilization of the province's fishery resources.

Fish culture activities include two pickerel hatcheries (Lake Manitoba and Lake Winnipegosis), a whitefish hatchery (Lake Winnipeg), a trout hatchery (Whiteshell Provincial Park) and two spawn-taking camps. Fish to replenish the commercial fishing waters are raised in the pickerel and whitefish hatcheries and several kinds of trout as well as splake and sockeye salmon are raised in the Whiteshell hatchery to be planted in sport fishing waters.

Sport Fisheries.—Angling continues to be one of the most popular and most rapidly growing forms of outdoor recreation in Manitoba, and since ice-fishing has come into vogue