

Provincial Hatcheries.—Ontario operates 17 hatcheries and rearing stations, the main species reared in these operations being brook trout, rainbow trout, lake trout, smallmouth and largemouth bass, and maskinonge. A program of modernization of the hatchery system is being undertaken—the Normandale Hatchery in Norfolk County has recently been completely renovated and the North Bay Station is under reconstruction.

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 walleye, parasitology and limnology. A selective breeding experiment concerning the hybrid of 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. Investigations include the study of exotic species of fish for use in the Great Lakes. Kokanee (sockeye salmon) plantings have been made in Lake Ontario and Lake Huron.

Manitoba.—Commercial fishing has been carried on in Manitoba since 1880. The province has almost 40,000 sq. miles of fresh water and 400 miles of coastline on Hudson Bay but, altogether, about 300 lakes and rivers, covering 30,000 sq. miles, are commercially fished. Some 3,400 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, almost two thirds of the catch is taken in the southern part of the province. In 1966-67, Lake Winnipeg produced 8,063,600 lb., Lake Manitoba 6,510,200 lb., Lake Winnipegosis 4,330,100 lb. and other southern lakes 659,100 lb. The northern lakes produced 10,367,300 lb. The total value to the fishermen in 1966-67 was \$4,787,502 and the value as marketed was \$7,544,700. The average marketed catch for the five years 1963-67 was 32,003,600 lb., worth \$4,293,000 to the fishermen and \$7,138,000 at the wholesale level after processing. About half of 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 \$4,000,000.

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 Natural 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.