

are delegated to regional advisory committees who conduct on-the-spot regional reviews and report to the Board on the operations and scientific programs with a view to their improvement. The executive functions are delegated to an executive committee elected from Board members and approved by the Minister.

The Board's operations are decentralized with only a small administrative, supervisory and publications staff in Ottawa. The responsibilities of the Ottawa office include planning and program co-ordination and administration of a grant program to encourage university research in the fields of marine and aquatic science.

The commercial and recreational fisheries program is designed to add to fundamental knowledge concerning Canada's vast living marine and freshwater resources. Included are life history, population and behaviour studies leading to a sound scientific basis for the conservation and management of the commercially important fisheries including those for lobsters, crabs, shrimps, oysters, scallops, clams, marine mammals and other economically important aquatic species, such as salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies in fish and shellfish diseases, fish predators and such basic studies as fish genetics, physiology and behaviour, the latter with a view to improving fish cultural and farming methods and also to improving fish farm and hatchery stocks. In addition to these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

On the Atlantic Coast this work is conducted out of research stations in St. Andrews, NB, and St. John's, Nfld.; work on arctic fisheries and on sea mammals is directed from a laboratory in Ste-Anne-de-Bellevue, Que.; freshwater work is carried out from a station in Winnipeg, Man.; and work on the Pacific Coast is directed from research laboratories in Nanaimo, BC. The Board operates 16 research vessels for its biological studies varying from small inshore and lake craft to specially built seagoing ships. The Board acts as Canada's research agent for three international fisheries commissions and two international sea-mammal commissions to which Canada is party.

The aquatic environment program studies the marine and freshwater environment in which aquatic organisms live, in order to increase knowledge in primary and secondary productivity and the occurrence of ocean and freshwater life of importance to man. Considerable importance is placed on increased research efforts associated with pollution prediction, abatement and elimination, including the effects of freshwater and marine eutrophication. Investigations are also conducted into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structures of large ocean areas including the ocean bottom where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms, as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas, are regularly observed and correlated. These studies, as well as special studies of interest to the Armed Forces, the Ministry of Transport and the international fishery commissions, are carried out by groups operating from Dartmouth, NS, Winnipeg, Man., Burlington, Ont., and Nanaimo, BC, with strong ship support from the Armed Forces and the Ministry of Transport, and with the co-operation of the Department of Energy, Mines and Resources.

Investigations aimed at improving methods of preserving, processing, storing and distributing fish products, as well as of utilizing all parts of the fish, are carried out. These include developments in refrigeration and the use of antibiotics as fish preservatives, improvements in canning, smoking and salting of fish, and the development of new products for the utilization of abundant species that are not now used for food. Fundamental research on the structure and composition of fish proteins, marine oils, hormones from aquatic organisms and other products from the sea is under way. These studies are carried out in research laboratories at Halifax, NS and St. John's, Nfld. on the Atlantic Coast; at Vancouver, BC, on the Pacific Coast; and, for inland products and processing, at Winnipeg, Man.

9.2.5 Department of Communications

The Communications Research Centre (CRC) of the Department of Communications, with a staff of about 500, carries out research and development in a number of communication-related areas. The main CRC site is at Shirley Bay, Ont., 15 miles west of