

Vancouver and Ottawa. It covers such aspects as wood protection, the use of wood in construction, testing wood and paperboard products, and methods of using reconstituted or composite wood products. Attention is also given to developing management systems for specific forest environments to optimize production of wood as well as other goods and services.

Environmental and amenity forestry research. In this category attention is being paid to research aimed at abating pollution of water and air caused by forest products industries. To help finance research directed specifically toward the reduction of water and air pollution caused by pulp and paper operations, the federal government has established the Cooperative Pollution Abatement Research (CPAR) program which provides up to \$1.2 million in funds annually. Authorized in 1970, this program is administered by the Canadian Forestry Service. The development and promotion of forestry techniques aimed at rehabilitating land despoiled by strip mining or environmental disasters is also receiving attention.

Trees in the urban environment are a matter of current concern. This relates to such objectives as breeding trees specifically for urban use; the promotion of green belts; and solving tree problems, such as Dutch elm disease, which have a major impact in eastern urban areas. The monitoring of forestry practices to determine both their environmental and social impact is an important phase of work. This encompasses such matters as the side effects of pesticides, herbicides, and fertilizers; the effects of clear-cutting; the implications of site preparation practices; and problems associated with the monoculture of tree species. Forest and plant ecology studies to expand knowledge and understanding of managed and natural forest ecosystems are receiving attention. The response of such ecosystems to stresses of various origin is of particular importance. This work is closely related to management methods developed for amenity forests where commercial harvesting is not a primary goal. It involves such matters as manipulating forests for optimum water yield, recreational opportunities, game, and fish.

Other activities. The Canadian Forestry Service also seeks to develop the type of information which will result in the formulation of improved government and private policies and programs bearing on the forestry sector. Research aimed at accumulating basic knowledge on a wide variety of forestry and tree topics ranges from such aspects as taxonomic research to the relationships of fundamental meteorological processes to trees and forests.

In the operational area, the Service is concerned with such matters as the country-wide forest insect and disease survey, forestry services for other federal government departments, and environmental impact assessments for major projects such as the James Bay Development in Quebec and the Mackenzie River pipeline in the North. The Service has responsibility for effective communication with the international forestry community as well as fulfilling Canada's international forestry commitments. Finally, the efficient, rational use of the forest resource is promoted by technical extension and liaison services. By its program of public information, involving publications, films, interviews, etc., the Service also seeks to establish public awareness and understanding of the forest environment.

9.2.6.3 Fisheries and marine research

Programs of fisheries research directly supporting national and international fisheries activities are conducted from research stations of the Fisheries and Marine Service in coastal and inland areas across Canada. These programs are designed to add to fundamental knowledge of 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 lobster, crabs, shrimps, oysters, scallops, clams, marine mammals, salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies on fish and shellfish diseases and fish predators, and research on fish genetics, physiology and behaviour, the latter with a view to improving fish culture and farming methods and 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, Dartmouth, NS, and St. John's, Nfld.; work on arctic fisheries and on sea mammals is directed