

Section 4.—Forest Administration, Research and Conservation

Subsection 1.—Federal Forestry Program

Administration.—The Federal Government is responsible for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, forest experiment stations, military areas and Indian reserves. The Federal Government also administers the Canada Forestry Act which provides, among other things, authority for the operation of forest experiment stations and forest products laboratories.

The Act also authorizes the granting of federal assistance to the provinces to enable them to improve the management of their own forests. Under the Federal-Provincial Agreements signed under authority of the Act, seven of Canada's ten provinces have undertaken a forest inventory with federal financial assistance, and six provinces have reforestation agreements. The history of the Federal-Provincial Agreements and their relation to the Canada Forestry Act is described in a special article appearing in the 1956 Year Book, pp. 459-466. In 1957 the Federal Government broadened the implementation of the Canada Forestry Act by providing financial assistance to the provinces for forest fire protection. A total of \$5,000,000, available over a five-year period, may be applied to capital expenditures, such as the cost of fire protection equipment and improvements, and of forest access roads, trails and buildings required for forest fire protection.

The Forestry Branch of the Department of Northern Affairs and National Resources has been continuing work on the aerial forest mapping of federally administered lands and other territories. For example, forest inventory maps have been prepared from air photographs for portions of the Yukon and Northwest Territories and data have been collected on the ground to support the interpretation of the photographs. The development of instrumental aids in forest photography and in interpretation is being continued by this Branch.

Forestry Research.—In the field of forestry the chief responsibility of the Federal Government is to carry out research in problems affecting the forests of Canada and their development, conservation and more effective utilization. To this end, forest research and forest products research facilities have been expanded greatly throughout the country during the past five years. The Forestry Branch of the Department of Northern Affairs and National Resources conducts research in forest economics, silviculture, management, forest ecology, tree physiology, tree breeding, forest inventory methods, forest fire protection, and in forest products. An extensive program of research is under way on the 186 Forest Experiment Stations in operation across the country (*see* p. 15) and on other lands, where an increasing proportion of the research in silviculture and forest management is done in co-operation with provincial forest services and wood-using industries.

Research in forest economics is concentrated on problems associated with the production of wood in the forest, land use, land tenure, taxation, forest legislation and administrative techniques, forest management, forest labour and the valuation of forest lands. Economics research also involves continued study of the broad developments in the forest industries.

Research in silviculture and management is concentrated mainly in (a) assessing the factors responsible for success or failure in securing natural regeneration following practical cutting methods and different treatments of seed beds, (b) comparing different methods of seeding and planting, and (c) determining the effects of different methods of harvest cutting on the development of residual trees and stands. Studies are made of growth and yield and of successional changes in most of the important forest types. Techniques used in mensuration are constantly under review and study; new methods are tested and developed. Application of silvicultural techniques as well as research in regulation of cut and in methods of protection are aimed at determining how forests may be maintained at the highest levels of production. The relationships between forest growth and site are being studied with a view to the assessment of long-term productivity.