

ranger divisions. South of this area, in the highly developed agricultural counties, municipalities are responsible for fire control. The vast inaccessible areas to the north of the fire districts, totalling over 134,000 sq miles, do not support significant stands of merchantable timber and, except for communities or other special values, are not protected. Within the fire districts, agreements were in effect in 1970 with 200 municipalities for the prevention and control of forest fires. An agreement was also in effect with the federal government for fire protection of 958,000 acres of Indian lands in the province.

Organized forest fire detection is accomplished by aerial patrol or combined aerial patrol and lookout tower systems, although towers are quickly being phased out in favour of aircraft. Public reporting of forest fires (unorganized detection) continues to be an important and very necessary part of the over-all detection program. The basic fire-fighting strike force comprised 135 trained, five-man fire crews and 42 fire-bombing aircraft. These forces, with the aid of timber operators, municipal fire brigades and the general public in some instances, provided the initial attack on the 1,604 fires that occurred in 1972.

Fire-bombing aircraft provided initial attack on 283 fires. Those aircraft dropped 130,938 gallons of water and long-term retardant which has proven to be an effective operational tool. Avengers and a Tracker provided the main long-term retardant delivery system. Water-based aircraft can also deliver long-term retardant in Ontario. Prescribed burning as a silvicultural and hazard reduction tool was continued in 1972 with five burns covering 2,455 acres.

An integral float tank water-bombing system is installed on float-equipped aircraft. The aircraft fleet, as at January 1, 1973 comprised 25 Turbo Beavers, ten Otters, Three Twin Otters, one Beechcraft Duke and one Beechcraft KingAir 100; six Grumman G-89 Tracker air tankers; one Jet Ranger, one Hughes 500 and one G-4-A helicopter were leased for the fire season. Five more G-4-A helicopters were available to the Ministry as required. The communications system included 186 ground stations, 277 lookout tower radios, 20 patrol vessel radiotelephones, 674 mobile radiotelephones, 1,344 portable fireline radios, 41 aircraft radio installations and 74 portable aircraft radiotelephones.

Forest pest problems in 1971 were again dominated by the spruce budworm which infested over 13 million acres but spraying operations to control this insect were limited to 80,000 acres, in four separate high-value local areas. Smaller acreages on Crown owned and Crown managed areas totalling 15,000 acres were also treated for white pine weevil, pine and spruce sawflies, white grubs, white pine blister rust, annosus root rot, and mice.

Manitoba. The administration of provincial Crown forest lands in Manitoba is the responsibility of the Department of Mines, Resources and Environmental Management which consists of a Resources Management Division, a Mines and Departmental Services Division, an Environmental Management Division and a Water Resources Division. A special planning section is charged with developing short- and long-range forestry plans and programs relating to the forest inventory, timber utilization and industrial development, reforestation, silviculture and forest protection.

The Research Branch of the Environmental Management Division undertakes the necessary practical research for the qualitative development of these programs and the various projects and activities within them. The Branch co-operates with several federal services which maintain two research areas in the province and works closely with federal authorities in investigating and controlling forest damage resulting from insects and diseases.

The Resources Management Division is charged with the administration of the Forest Act and Regulations, and the implementation of forestry programs and projects developed. It also provides considerable input with respect to plans developed for specific areas within the four regions into which the province is divided, each headed by a regional director responsible for the field administration of the forests and other resources in the region. Policy guidelines are established by head office which co-ordinates control measures for the propagation, improvement and management of the forests, for the harvest of forest products, and for forest inventory surveys. A provincial forest nursery is maintained to supply stock for reforestation of denuded Crown land and some natural seed areas have been established for nursery stock. Seedlings are supplied to farmers for woodlots and to commercial Christmas tree producers; an average of more than 4 million are planted each year in reforestation projects on Crown lands. Conventional planting programs are being reduced and reforestation of cutover lands is being achieved by scarification and seeding. The program of forest stand improvement comprises thinning, clearing and chemical spraying to remove undesirable species and