

For the first time in the history of the Forest Service a regular aeroplane patrol provided by the Royal New Zealand Air Force was used for detection and control of forest fires, on this occasion during the Taupo-Wairakei outbreak. On the initial patrol, fire was discovered in the incipient stage in the centre of a large area of indigenous forest, allowing of its suppression without any material damage, whereas without detection from the air there is little doubt that widespread damage would have resulted. So valuable did the experience prove that arrangements have been concluded for a regular air patrol over the Kaingaroa and adjacent forests throughout the next fire season.

45. *Fire Districts*.—One new district, known as "Woodhill-Helensville Fire District," was constituted at the request of the Public Works Department. The area is 20,800 acres, which brings the grand total to 64 with an area of 3,878,800 acres.

The outbreak of fire in the Guildford Fire District disclosed the fact that the administering authority had failed to provide adequate fire-fighting equipment, including transport, and it is clear that when the constitution of fire districts is brought under review as previously suggested in this report powers should be secured to compel administering authorities to take certain measures and provide sufficient equipment to give reasonable protection to their forests.

46. *Forest (Fire-prevention) Regulations 1940*.—No amendment to the regulations was made during the year, and administrative experience of the regulations—as amended early in 1943—during the 1943–44 fire season revealed no serious legal defect, and reports indicate that generally the provisions operated smoothly throughout the sawmilling industry. Although the widest possible publicity was given to the requirements of the regulations when they were issued, several cases of professed ignorance came under notice, particularly in respect to the obligations of persons employed in a State forest or in a fire district to do their utmost to suppress fires and to notify the nearest Forest Officer of any outbreak. In several instances outbreaks of fires were unknown to the Service until discovered by visiting forest officers, and it appeared evident that very little effort by workers in the locality at the time of the outbreak would have been necessary to subdue the fires in their incipient stages and thus prevent the burning-over of extensive areas. The neglect or indifference shown by workers in the past regarding forest fires must be stopped, and legal proceedings for a breach of the regulations are consequently taken in every such case detected.

With a view to removing any doubts regarding the personal responsibilities of workers, arrangements are being made for the regulations (incorporating amendments) and relevant fire provisions of the Forests Act, 1921–22, to be printed in poster form and for a copy to be displayed in every sawmill operating in a State forest or in a fire district. A leaflet directing attention to his lawful obligations is to be placed in the pay envelope of every worker affected at the beginning of the next fire season.

One other important feature of the regulations not yet fully appreciated is the fact that it is now the entire responsibility of the operator (not necessarily the owner) of an engine to see that it is fitted with safe and efficient means for preventing the escape of dangerous sparks, flame, or live coals, and that it is an offence for any person to operate an engine not so equipped. This provision is to be brought to the notice of operators, and another cause for a plea of ignorance will be removed.

47. *Animal Damage*.—No reports of particularly spectacular damage by game or fur animals have been received affecting State forests; but the amount of damage done continues at an undeniably high level. The number of men at the war and the scarcity of petrol and ammunition have plainly decreased the number of shootists killing deer and pigs, and complaints from farmers about deer depredations on farm-lands have increased. In State forests, however, with fewer areas in the young stage owing to decreased planting since the outbreak of the war and with annually larger areas in the thicket stage where deer do little or no damage, it cannot be held that damage has increased, although the deer population has undoubtedly done so. The movement of deer herds into thicket areas, where dense young forest provides harbourage with marginal grazing, is very noticeable, and in such areas of dense young coniferous forest over ten years of age shooting of the pest in numbers is extremely difficult. In Rotorua district a distinct movement of the Sambar deer from its previous areas into such good covert has been reported.

Similar increase in opossum numbers has been reported in Auckland in the vicinity of exotic stands of ten years upwards, and this conservancy, which some ten or fifteen years ago had few opossums, records 823 killed in State forests last year. Destruction of forest pests has, on the other hand, been assisted by the high price ruling for deer-skins for export (4s. 3d. to 5s. 6d. per pound) and by the high subsidy given by the Department of Agriculture for rabbit-skins.

Numbers of animals reported killed in State forests during the year are: rabbits and hares, 8,300 (14,600); deer (all species), 1,925 (627); pigs, 655 (502); goats, 55 (0); opossums, 2,302 (1,810). The large increase in the reported deer kill over last year was principally due to the results reported by two parties of Internal Affairs Department men in Kaingaroa and Blue Mountains State Forests.

48. *General Ecology*.—No special research was carried out, but marked increase in the incidence of fur and game animal pests in certain State forests has been referred to in the previous section.

49. *Insect Damage*.—No marked serious outbreaks of any insect pest have been reported, all station records dealing with normal seasonal occurrences of *Sirex*, *Hylastes*, *Pachycotes*, and *Navomorpha*. One report recorded that an alder break in Rotorua was