

RESULTS

A. GENERAL SURVEY

1. Fiordland

Three regions were visited in Fiordland: Lake McKerrow—Martins Bay, 17–29 January 1959; Lake Manapouri—Doubtful Sound, 12–24 February 1959; Lake Monk—Long Sound, 16–28 January 1960.

Lake McKerrow lies at the northern end of Fiordland, where deeply dissected upland consisting of diorite gneiss is replaced by the southern end of the Southern Alps (Mt Tutoko, 9,042ft, as a prominent peak) and the glacial erosion ceases to reach the coast. The lower Hollyford River runs out from Lake McKerrow to the northern end of Martins Bay. The climate is mild and wet, the precipitation being one of the highest in New Zealand, exceeding 250 inches a year (though the number of raindays is less than that in the southern part of Fiordland). The vegetation differs from the rest of Fiordland in that the podocarp element in *Nothofagus* forest is conspicuous and the coastal vegetation of *Dacrydium cupressinum*/*Metrosideros umbellata*/*Weinmannia racemosa* stands forms a wide belt occupying the flat area from Martins Bay to the north-eastern side of Lake McKerrow as far inland as the Hokuri Creek. The delta which has developed at the head of Lake McKerrow supports *Nothofagus*/*Weinmannia* forest but the *Nothofagus* forest on the alluvium in the Hollyford Valley contains strong elements of *Dacrydium cupressinum*, *Podocarpus spicatus* and *P. dacrydioides*. Patches of podocarp forest also grow on the sunny side of the slopes above Lake McKerrow. Two areas were selected on the alluvium of the Hollyford River for the census of breeding bird populations. Area 1 is on the delta which developed where the Hollyford River enters Lake McKerrow. The total area is about 150 acres in size, but about one-third of the area is occupied by a swamp and patches of pure tree fern stands. The rest has a canopy of *Nothofagus* spp. mixed with only a few trees of *Weinmannia racemosa* and *Podocarpus* spp. *Nothofagus* is of various sizes and smaller ones are about the same height as *Griselinia littoralis* and *Carpodetus serratus* which form the secondary layer of the forest. Tree ferns and *Ripogonum scandens* are numerous in wetter parts of the area and most of the trees are covered with moss. *Pseudowintera colorata*, *Coprosma* spp., *Pennantia corymbosa*, etc., form the shrub layer which is dense on the forest edge along the river bank and lake shore, as well as around the swamp. Along the lake shore and river bed, patches of *Phormium tenax* and *Cortaderia* are common. Behind these are found some scattered *Sophora microphylla* and *Cordyline*. Three population counts were made in this area before 7 a.m., after which the noise of extremely abundant cicadas made an accurate count impossible. Area 2 was selected from the *Nothofagus* forest with a strong element of *Podocarpus* on the Hollyford Valley floor near the Pyke Junction. It is 17 acres in area and covered with *Nothofagus* spp. of various sizes and scattered *Weinmannia racemosa*, *Podocarpus spicatus*, and *Dacrydium cupressinum*. The last two are sometimes over 80ft in height. *Fuchsia excorticata*, *Griselinia littoralis*, *Aristolelia serrata*, *Neopanax* spp., and *Carpodetus serratus* are common in the secondary layer and *Pseudowintera colorata*, *Neomyrtus pedunculata*, *Coprosma*, tree ferns, etc., form the shrub layer. As in Area 1 the ground is covered with moss or ferns and there is no humus under the thin litter of *Nothofagus* leaves. Two counts of birds were made in this area.

The region of Lake Manapouri—Doubtful Sound has typical Fiordland topography and vegetation. Indentations of the fiord are largest in this region, the narrow sea stretching 25 miles inland from the west coastline. *Nothofagus* forest with some podocarp species extends from sea level to 2,700–3,300ft in altitude and extends eastwards to the arms of deep, cold lakes. To the west of Wilmot Pass