

STATUS OF THE PIED TIT (*Petroica macrocephala toitoi*) IN THE WAITAKERE RANGE, AUCKLAND

Interim Report

By JEAN F. SKINNER

The Waitakere Range, which rises to 460 m (1500 ft) above sea level, is a plateau dissected by streams running out to the West Coast and south to the Manukau Harbour. Its fringes exhibit typical ridge and valley characteristics, but its central portion includes extensive plateau remnants. The annual rainfall is about 1200 mm on the margins and up to 2000 mm in the higher central parts (Mead 1972). It forms an island of bush bounded on two sides by the sea, by farmland to the north, and by Auckland City to the east.

The study has been confined to the Parks and Water Catchment, an area of about 6300 hectares (15,700 acres), the bulk administered by the Auckland Regional Authority, the remainder by Auckland City Council.

The forest was extensively milled until the 1930s. One third was heavily milled but not burnt over. Most of the coastal land was cleared and burnt for farming, and farms were also established on the Scenic Drive, the Piha Road, around Lower Nihotupu Dam and the head of Anawhata Catchment. Some areas of virgin bush, as well as milled-over land, were burnt in attempts to farm them. There are estimated to be more than 2400 hectares (6000 acres) of abandoned farmland in the Range. Land behind Cornwallis beach was burnt for gumdigging, and in 1924 the area on the north side of the Huia Road was planted with *Pinus radiata*.

There is almost virgin bush in some parts of the Water Catchment, young forest is regenerating well in areas which were heavily milled but not burnt, and *Leptospermum* scrub has taken over the former farmland.

These changes in the vegetation must have affected the populations, including the Pied Tit (*Petroica macrocephala toitoi*). In 1975 I began work on its present status. It had previously been reported as few (Oliver 1955) and "existing in small but established populations" (Turbott 1974). There were eleven records in *Notornis* between 1950 and 1972 — random sightings on day trips to the area.

My husband and I found the territories recorded between 1975 and 1978 by walking the tracks and recording birds on a map. Our observations indicate that this species is highly territorial, staying in the same place throughout the year, a conclusion reached by Wilkinson (1930). We believe that our records do represent established territories of separate pairs, and we were able to check this, particularly when we heard males countersinging. We have rechecked about 40% of

the territories, some of them many times, and in all seasons, and have consistently relocated them.

In 1976, with co-operation of the Regional Representative, Mrs Sylvia Reed, I began organising twice-yearly surveys of all species within the Centennial Park area, and up to 40 members of the Ornithological Society took part. This enabled some Pied Tit territories to be checked, and additional territories found were later checked by us before inclusion on the territorial map. The A.R.A. rangers too have been most helpful in reporting sightings.

The distribution of vegetation in the Range clearly has an important bearing on Pied Tit distribution. This was substantiated when I superimposed on my own map the map prepared by J. T. Diamond (Esler & Astridge 1974) which indicated where forest had been burnt to clear land for farming and gumdigging. It could be seen that Pied Tits are not present in the *Leptospermum* scrub now covering areas burnt for farmland or gumdigging, but there are a few where *Leptospermum* and *Pinus radiata* merge on the old gumdigging land (see Fig. 1).

Most territories have been found in least modified areas, that is, virgin bush (Mead 1972) and regrowth in unburnt areas where the larger trees are predominantly Rimu (*Dacrydium cupressinum*). Pied Tits show a marked association with these trees. They tend to perch, sing and hunt insects high in the branches — unlike their behaviour in other parts of New Zealand. They will come down to investigate an intruder, are attracted to a *tsst* call through the teeth, squeak grass (*Dianella intermedia*) and, at certain times, particularly in spring or in the juvenile stage, to taped call and squeak bottle, but they soon return to the tree tops.

During the early spring they are comparatively easy to locate by their territorial song but, later in the year when they give only the *tsst* call or are silent, they can easily be overlooked if one is not familiar with their habits.

In the breeding season many juveniles have been found, some of these with their parents. On one track with a flourishing population conventional nest boxes were introduced but not used, indicating no lack of natural sites.

Recently we have concentrated our efforts on one block, crashing bush to do transects between tracks. Here, territories in rimu-dominated bush appear to have an area of about 1.2 hectares (3 acres). Where birds did not at first appear in a likely area, we found that when we sat and periodically gave the *tssting* call through the teeth, the male would investigate after about five or ten minutes.

While this investigation has been spread over much of the Waitakeres, we have intensively covered only a limited area. So far, we have located 117 territories. Depending on the type of bush, these territories probably average about 2.5 hectares (6 acres). With intensive study of further areas we expect to find more.

Finally, it should be emphasised that this is an interim report.

WAITAKERE RANGE

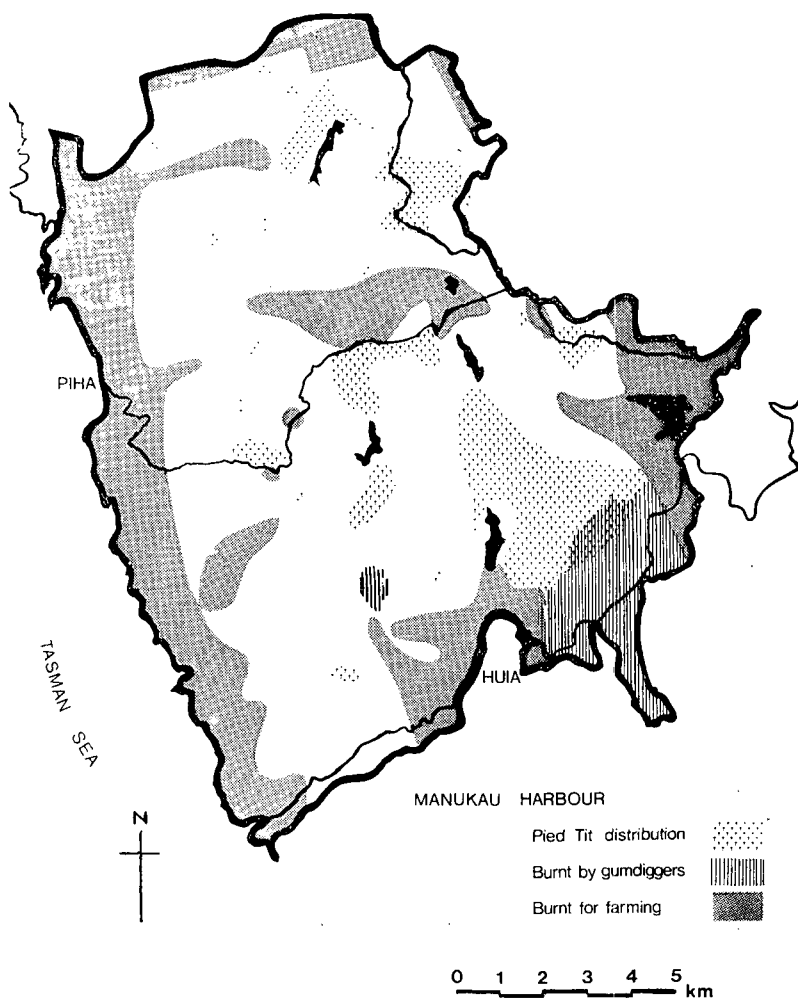


FIGURE 1 — Pied Tit distribution related to the vegetation history.

DISCUSSION

Two interesting points are raised. Firstly, the tendency of Pied Tits in the Waitakeres to keep to the canopy of the higher trees for much of the time contrasts markedly with behaviour in other parts of New Zealand. For example, Fleming (1950) stated "*Petroica macrocephala* customarily feeds by darting from a watching perch to

pick up insects on the bark or limbs of trees, or, particularly, on the forest floor." Oliver (1955: 479-480) stated, "It is much in evidence in forest clearings and manuka scrub." In southern Fiordland, Turbott (1959) found that it was "generally distributed from the valley floor through the forest, but was occasionally seen in the subalpine scrub. It was the most conspicuous forest bird, especially as the males were singing, and being rather evenly distributed was recorded in more observation periods than any other species; though it was probably no more numerous than gregarious species like silvereyes and redpolls which were encountered less frequently. Tomtits were present at all levels in the forest, singing and possibly also feeding in the canopy and in the second tier, and feeding in the shrub layer on the ground. Birds were more easily seen at the lower levels and this may give a biased impression of their feeding behaviour. In addition to the ripe small-leaved coprosma fruits in the underscrub, the feeding birds were taking insects off the ground or from branches and trunks of the trees and bushes, often flying up and capturing an insect without alighting, and occasionally taking one in the air."

Elsewhere, for example Little Barrier and Central Plateau of North Island, we too have found a similar behaviour pattern, completely different from that in the Waitakeres. Observations are needed in various forest types in other districts for a full comparison with our findings to be made.

Secondly, in our future studies we hope to establish whether the Pied Tit population is thriving and increasing, as present observations suggest, and whether earlier sightings were so few merely because of the birds' different behaviour in the Waitakeres.

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Mrs JEAN F. SKINNER, P.O. Box 60083, Titirangi, Auckland 7.