

Passerines are the largest group of birds. They are small to medium sized land birds found worldwide, except on Antarctica. All species have four toes, three pointing forward and one back, well-adapted for perching. Most species are song-birds, with complex musical calls, but there are exceptions (e.g. crows). They show great diversity of form, behaviour and breeding biology.

RIFLEMAN (Titipounamu) *Acanthisitta chloris*

Locally common endemic

8 cm; ♂ 6 g, ♀ 7 g. NZ's smallest bird. Rounded wings; very short stumpy tail; bill fine and slightly upturned. Male bright yellow-green above, green on rump; female streaked dark and light brown above, brownish yellow on rump. Both whitish below, conspicuous white eyebrow stripe, and yellowish flanks. Immature like female but streaked on breast. Feeds by working its way up trees and shrubs, flicking wings and exploring bark and lichen of trunks, branches and leaves. Call a very high-pitched sharp repeated 'zipt', beyond the hearing range of some people. **Habitat:** Native forest and scrub; favours beech and tawa forest. Some in exotic forest, gorse and willows, especially in South I. **Breeding:** Sep–Feb.

[Sp 283]



NEW ZEALAND WRENS

Acanthisittidae

All 4 species; family endemic to New Zealand; 1 (the Stephens Island Wren *Traversia lyalli*) became extinct in 1894, 1 is probably extinct, and 2 remain.

The New Zealand wrens are an ancient family of tiny birds with no close affinity to other groups of birds. They have short, rounded wings and a very short tail. Females are larger than males.

283. RIFLEMAN *Acanthisitta chloris*

Plate 66

Other name: Titipounamu
Size: 8 cm; males 6 g, females 7 g
Geographical variation: Two subspecies: the North Island Rifleman *granti* on the North Island, Great and Little Barrier Islands; and the South Island Rifleman *chloris* on the South Island, Stewart Island and its outliers.
Distribution: New Zealand only. Subfossil remains are scarce, but Riflemen were apparently widespread at the time of European settlement, then declined with the loss of lowland forest. In the North Island, apart from a small remnant in kauri forest at

Warawara in Northland, they are now absent north of the Waikato and the Coromandel Peninsula. Elsewhere, they are widely but patchily distributed in forests and older stands of scrub. They are common on Little Barrier Island, and some are on Great Barrier Island. In the South Island, they are widely distributed through forests and scrubland from Marlborough and northwestern Nelson to Fiordland. They are common in forest on D'Urville Island, Stewart Island and its outliers, including Codfish Island. Throughout New Zealand, best numbers are in high-

altitude beech forest and in lowland podocarp forest, and they like mature tawa forest in the North Island, and manuka/kanuka and hakea scrub in the eastern South Island. They also use some older exotic forests, especially those with a dense understorey of native shrubs and with trees left in gullies, but are uncommon in young stands of pine, kahikatea and scrub where nest-holes are rare.

Population: Widespread and locally common, especially so in beech forest and older stands of tawa and podocarp forest.

Conservation: Protected endemic. Riflemen seem to have a stable distribution, but their poor dispersal across water or open habitats has led to a fragmented distribution in some parts of the country, and there are small isolated pockets in Northland and the eastern Hawke's Bay and Wairarapa hill country.

Breeding: Pairs remain on their territory all year. Some pairs have one or more helpers attending their nests. The male starts building several nests before the female finally joins in. The usual tree-hole nest is completely enclosed except for a small side entrance tunnel, and is well lined with leaf skeletons, fern roots, twigs and feathers. It is placed from near the ground to about 18 m (usually 3–6 m), but occasionally they use a small crevice in a bank or a disused rabbit burrow. They readily use a 15 cm square nest box with a 2 cm diameter entrance hole, especially where natural holes are scarce.

First clutches are laid in late September to early October, with replacement clutches and some second clutches being laid to the end of December. Courtship feeding is common early in the breeding season from about 12 days before laying to the completion of the clutch. They lay 2–4–5 white eggs (16 x 12.5 mm, 1.3 g) at 48-hour intervals. Both sexes incubate for 19–20 days, males incubate about 50% more during daylight hours than females. Chicks hatch about the same time. Both parents brood them for the first 10–12 days and feed them (mainly the male and occasionally helpers) until they fledge at 21–24–27 days old. After fledging, the chicks continue to be fed for 4–5 weeks, when they become fully independent. Riflemen often

start building a second nest while still feeding chicks in the first nest and start incubating while still feeding fledglings. Most pairs lay replacement clutches if their first nest fails, and about 50% of pairs lay a second clutch after successfully raising a brood. Pairs remain together year after year. Young females sometimes pair up with a regular male helper on independence, and young of both sexes can start breeding at c. 9 months old. Annual survival of adult Riflemen near Kaikoura was c. 73% for males and 53% for females, giving life expectancies of 3.2 and 1.6 years respectively, but two banded males are known to have lived at least 6 years.

Behaviour: Pairs remain on territory all year, but helpers assist in raising young, especially late in the breeding season. Regular helpers are mainly unpaired males, some of which subsequently pair with one of the offspring raised. Casual helpers occasionally feed chicks in one or more broods; they are sometimes unpaired adults, but most are chicks from the first brood, helping with their parents' second brood. Males are very protective of their female early in the season and remain close to her until she lays, but later in the season they allow unpaired males to assist in raising their broods. The main call of Riflemen is a very high-pitched, sharp 'zipt-zipt-zipt-zipt', often uttered by a pair as they feed a few metres apart. The call is so high-pitched that many older people can not hear it.

Feeding: Diet is almost entirely invertebrates; beetles, spiders, small weta, flies, moths and caterpillars are the most important food, with bugs, snails and lacewings also recorded. Some ripe fruit is taken. Riflemen glean most of their food from small crevices and epiphytic mosses and lichens on the trunks and large branches of trees at almost any level of the forest, although they only rarely feed on the forest floor.

Reading: Gaze, P.D. 1978. *Notornis* 25: 244. Gray, R.S. 1969. *Notornis* 16: 5–22. Moeed, A. & Fitzgerald, B.M. 1982. *NZ J Zool* 9: 391–403. Sherley, G.H. 1990. *Behaviour* 112: 1–22. Sherley, G.H. 1993. *NZ J Zool* 20: 211–217. Sherley, G. 1994. *Notornis* 41: 71–81.