

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.

KOKAKO *Callaeas cinerea*

Rare endemic

38 cm, 230 g. Large dark bluish-grey bird with a black facial mask, short strongly arched black bill, long black legs, long tail and rounded wings. North I adult has blue wattles; South I adult has orange wattles. Juvenile has smaller pinkish wattles, smaller facial mask, and dull brown wash in plumage. Leaps around in trees and takes short flights, never sustained for long. More often heard than seen. Calls mostly at dawn; *song is a slow string of very loud rich mournful organ-like notes*. **Habitat:** Tall podocarp hardwood forest in North I, Little Barrier, Tiritiri Matangi and Kapiti Is; formerly beech and mixed forest in South and Stewart Is, probably extinct. **Breeding:** Oct–Mar.



[Sp 321]



WATTLEBIRDS

Callaeidae

3 species, all endemic to New Zealand.

The origin of the wattlebirds and their relationship with other perching birds are obscure and ancient. They have colourful fleshy wattles at the gape, short, rounded

wings, limited flight and prefer to progress with leaps and bounds on strong legs. The tail is long and drooping. The bill size and shape is highly variable within the group, but all feed on forest invertebrates and fruits. Their calls are loud and varied.

321. KOKAKO *Callaeas cinerea*

Plate 70

Size: 38 cm, 230 g
Geographical variation: Two subspecies: the North Island Kokako *wilsoni* of the North Island and some offshore islands, and the South Island Kokako *cinerea* of the South and Stewart Islands.

Distribution: At the time of European settlement, the North Island Kokako were widespread in the forests of the North Island and Great Barrier Island. They have gone from forests in Hawke's Bay, the Wanganui hinterland, the Ruahine, Tararua and Rimutaka Ranges, and the Wairarapa. The few that survived at the north end of Great Barrier Island have been transferred to Little Barrier. They are now in low numbers in the much-reduced native forests of Northland (Puketī, Raetea, Waipoua, Mataraua and Waima), Hunua Ranges and in southern Waikato and northern Taranaki. Their main strongholds are tall, mixed lowland forest of podocarp and hardwood in parts of the Bay of Plenty (Mamaku, Horohoro and Rotoehu Forests), the Pureora and Mapara Forests of the King Country, and the northern Urewera Ranges of East Cape. Kokako prefer tall, mixed lowland forest of podocarp and hardwood that has a high diversity of plant species. They have been successfully transferred to Little Barrier and Kapiti Islands. Some are held in captivity at the National Wildlife Centre at Mt Bruce, and at Otorohanga.

At the time of European settlement, South Island Kokako were in the western part of the South Island from northwestern Nelson to Fiordland, also Banks Peninsula and, probably, large areas of beech forest east of the Southern Alps. They were also in forest and scrub on Stewart Island. They probably died out on the South Island about 1960, and only a few, if any, remain on Stewart Island. **Population:** North Island, c. 1400 birds, mainly in the northern Urewera.

Conservation: Protected threatened endemic. The decline of Kokako probably has many causes. In the North Island, the clearance and fragmentation of tall lowland forest has turned prime Kokako habitat into isolated pockets. Logging, including 'selective log-

ging', removes many of their main food plants. Predation of eggs, chicks and adults by introduced mammals, especially ship rats and possums, and by Australasian Harriers, and the destruction of understorey food plants by the browsing of goats, deer and possums have limited their breeding success. Experimental control of introduced mammals has increased the number of Kokako at Kaharoa and especially at Mapara, and is being tried elsewhere on the mainland. Birds have been shifted from the mainland to predator-free islands with the aim of improving the total to over 2500 birds, in at least four groups, by the year 2010.

Breeding: Kokako remain in territorial pairs all year. The female builds the nest over several days in dense foliage or beneath the cover of the canopy, 3–16–30 m above ground. It is always well concealed from above, and the birds approach from below. Nests are a twig base on which is woven a cup of long stems of epiphytic orchid, filmy fern, rata vine and lycopod, often lined with tree-fern scales, moss, lichen or rotten wood, or they are built directly in a clump of epiphyte. Eggs are usually laid in October–December, but in years when there is a good supply of fruit they may continue laying until March and raise two, exceptionally three, broods.

They lay 2–3 eggs (37 x 26.5 mm), pinkish grey with brown and mauve spots and splotches. The female incubates for c. 20 days and both parents feed the chicks during the c. 31-day fledging period. The young stay in the adults' territory and are fed by them for up to 12 months, but they are usually independent after 4 months. Females are known to breed in their first year. The oldest Kokako recorded lived at least 11 years, but some probably live to 20+ years.

Behaviour: Pairs or solitary birds (probably mainly males) hold their territory all year and for many years. They sing loudly and for prolonged periods, mainly about dawn, rarely during the rest of the day. Pairs sing delightful organ- or flute-like duets of long, melodic syllables, short clucks and buzzes. The main call is a slow, rich 'ko-ka-ko-o-o-o',

tailing off at the end. The singing bird flaps its wings as it calls. Kokako prefer to bound along branches and from branch to branch rather than fly. Flights are usually short and seldom sustained for more than 50 metres. **Feeding:** Diet is mainly foliage and fruit, supplemented with invertebrates. All year, they feed on leaves at all levels of the forest. When available, they feed on the fruits of podocarp and hardwood trees and on berries from a variety of shrubs, epiphytes and

vines. They take insects during summer and autumn, especially when feeding chicks.

Reading: Clout, M.N. & Hay, J.R. 1981. *Notornis* 28: 256–259. Innes J. 1999. *Recovery Plan for North Island Kokako*. Wellington DoC. Innes, J. & Hay, R. 1995. *Notornis* 42: 79–93. Innes J. *et al.* 1999. *Biol Cons* 87: 201–214. Lavers, R.B. 1987. *Notornis* 25: 165–185. MacMillan, B.W.H. & McClure, B.R. 1990. *Notornis* 37: 107–119. Meenken, D.S. *et al.* 1994. *Notornis* 41: 109–115.