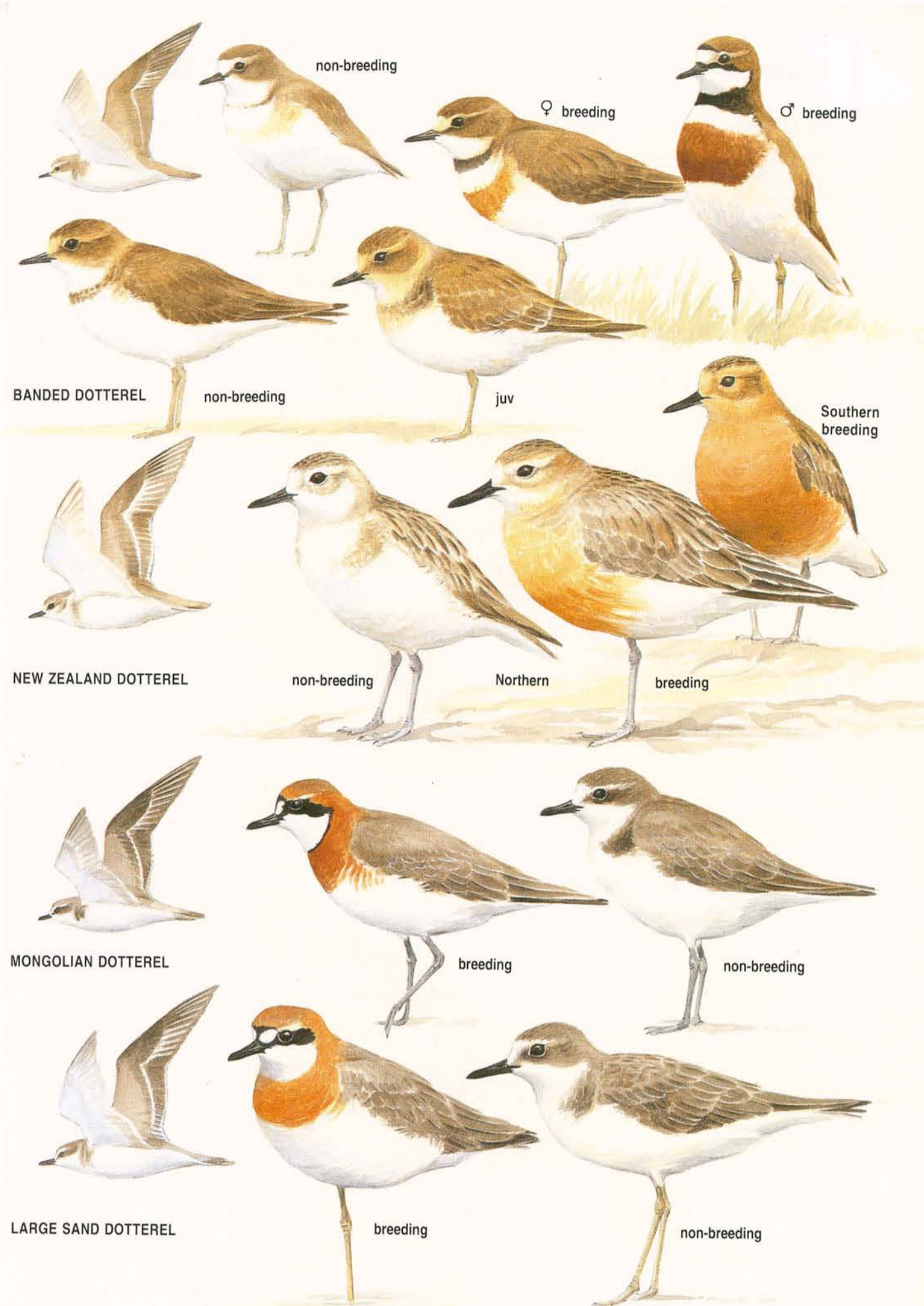


A large diverse group of birds of estuaries, coasts, riverbeds and farmland. Most are long-legged and feed in or near shallow water. Bill shape is varied; short and stubby in those (e.g. dotterels) that peck from the surface, but longer in those that feed in shallow water (e.g. stilts), or probe deeply (e.g. godwits). Flight strong and direct. Often form flocks while roosting or flying, but disperse to feed. Many species seen in NZ breed in the Arctic and arrive in September, with remnants of breeding plumage, and depart in March, often in breeding plumage. Most subadults and a few adults spend the southern winter here.

BANDED DOTTEREL (Tuturiwhatu) *Charadrius bicinctus* Abundant endemic

20 cm, 60 g. Medium-sized dotterel with a confusing range of plumages according to age, sex and time of year. Breeding adult has white underparts except for 2 bands, a thin black band on the lower neck and a broad chestnut band on the breast. Male has bolder and darker bands, and also has a thin black band above white forehead, and a dark line through eye. Non-breeding adults of both sexes are highly variable: black facial markings are lost; breast bands fade and often lost except as yellow to grey-brown tabs at the shoulders; upper band usually shows as a faint incomplete necklace of spots, but some retain a distinct upper band. Juvenile like non-breeding, but whole head washed yellowish buff, brown mottling on breast usually forms dark shoulder tabs, and upperparts grey-brown with fawn or off-white edges to the feathers. All have short dark grey bill, black eye, variable yellowish-grey-green legs. Main calls a loud 'pit' and a fast rolling 'che-ree-a-ree'. **Habitat:** Breeds on sandy beaches, shellbanks and riverbeds. After breeding, form flocks at estuaries, lake margins and sometimes short grassland, e.g. airfields. Some, especially those breeding in high-country South I, migrate to Australia. **Breeding:** Jul–Jan. [Sp 176]



PLOVERS, DOTTERELS and LAPWINGS Charadriidae

About 65 species, most of which are migratory. There are about 29 plovers and dotterels, of which 5 (formerly 6) breed in New Zealand and 8 visit as migrants from the Northern Hemisphere; 26 lapwings, 1 of which breeds in New Zealand. Some authorities place the Red-kneed Dotterel with the lapwings rather than the plovers.

In New Zealand, the terms plover and dotterel mean the same thing; there is no clear distinction. All are plumpish with a thick, short neck, short tail, small, rounded head

with a high forehead and bill shorter than the head, pointed and slightly swollen at the tip. The plumage is a blend of black, white, brown and grey, sometimes more colourful in breeding plumage. They often have a bold pattern in flight. They have a characteristic 'walk and stop' way of feeding.

Lapwings tend to be inland on pasture and around coastal wetlands. They have wattles on the face and spurs on the bend of the wing, and are noisy on the ground and in flight, by night as well as by day.

176. BANDED DOTTEREL *Charadrius bicinctus* Plate 40

Other names: Tuturiwhatu, Double-banded Plover (Australia)

Size: 20 cm, 60 g; Auckland Island birds larger

Geographical variation: Two subspecies: *bicinctus*, the common breeding bird of the North, South and Chatham Islands and partial migrant to Australia; and *exilis*, confined to the Auckland Islands.

Distribution: Breed only in New Zealand. They are found throughout the North and South Islands, and on several offshore islands (including Great Mercury and Ruapuke), Stewart Island, the Chatham and Auckland Islands. A high proportion of the population migrates to southeastern Australia in winter, a few regularly visit Lord Howe and Norfolk Islands, and some straggle to Vanuatu, New Caledonia and the Kermadecs.

Some Banded Dotterels breed around the sandy coasts, especially near stream or rivermouths of both main islands, but their breeding concentrations are on the shingle riverbeds of Hawke's Bay, Manawatu and the Wairarapa in the southern North Island, and especially on the braided riverbeds of Marlborough, Canterbury, Otago and Southland in the South Island. The main stronghold is Canterbury, where 5000 pairs breed on riverbeds and river terraces, and the coastal lakes, lagoons and beaches, and another 5000 pairs breed on rivers in the Mackenzie Basin.

The migration routes taken by the various regional populations of Banded Dotterel have been studied in a co-operative programme of colour-banding in New Zealand and Australia. After breeding, most birds from the inland and high-altitude southern South

Island migrate to Australia in March, whereas those breeding in the Canterbury lowlands and in the northern South Island mostly migrate to northern New Zealand in February. For example, winter band recoveries in Australia are: Southland 74%, Central Otago 95%, Mackenzie Basin 65%, Canterbury 27%, Westland 15%, Marlborough–Nelson 3%, North Island 1%. Westland birds move mainly to Farewell Spit. Birds breeding at coastal sites are mainly sedentary, from the Southland coast to North Island beaches. Birds breeding inland in the North Island generally winter on nearby coasts or move to Auckland or the Bay of Plenty in January–February. Movements of birds breeding in the Chatham and Auckland Islands are not known.

Population: c. 50,000, mainly in the South Island. Probably 30,000 reach Australia each winter. On the Auckland Islands, there were at least 730 *exilis* in November 1989.

Conservation: Protected endemic. Widespread and moderately common. They suffer from predation by introduced mammals and loss of some habitat to hydroelectric development and irrigation schemes, but seem to be holding their own.

Breeding: Banded Dotterels start returning to North Island breeding sites in July, but those in inland Canterbury arrive in August–September. Nest sites are in consolidated sand, shingle, shell and dirt, with or without prostrate vegetation. Males prepare a series of scrapes, one of which is chosen as the nest. Eggs are laid in July–November in lowland areas, September–December in the Rangipo Desert of the central North Island and in the Mackenzie Basin, but start as late as Novem-

ber on the mountain ranges of Central Otago. They lay 2–3–4 eggs (34 x 25 mm, 12 g), pale grey through blue-green to olive and brown, with black spots, streaks and blotches. Both sexes incubate for 25–27 days, starting usually after the second or third egg; the female incubates for most daylight hours, the male may incubate mainly at night. Hatching is synchronised. The chicks soon leave the nest and feed independently. The fledging period is 5–6 weeks. Most birds breed in their first year. The oldest banded bird lived over 10 years.

Behaviour: Gregarious at winter roosts but often form loose flocks, and are even territorial, while feeding. They breed solitarily with well-defended territories. Their usual calls are a fast, rolling 'che-ree-a-ree', accented on the second syllable, in defence of the breeding or winter feeding territory, and a loud, high-pitched, far-carrying 'pit' or 'chip',

given in flight or on the ground.

Feeding: Diet includes a variety of terrestrial and aquatic invertebrates, supplemented by occasional berries of prostrate plants. On pasture and tilled ground, they mostly take earthworms and beetles. On riverbeds, marsh-turf habitats of lakeshores and estuarine mudflats, they take worms, the larvae of chironomids, mayflies and caddisflies, and emerging adult insects. Like all plovers, they feed visually by using 'run-stop-look-step-peck' on dry sand and 'run-stop-peck' on wet sand and saltmarsh; they also foot-tremble in damp habitats.

Reading: Bomford, M. 1988. *Notornis* 35: 9–14. Pierce, R.J. 1980. *Notornis* 27: 309–324. Pierce, R.J. 1989. *Notornis* 36: 13–23. Pierce, R.J. 1999. *Notornis* 46: 101–122. Robertson, H.A. & Dennison, M.D. 1979. *Notornis* 26: 73–88. Walker, K. et al. 1991. *Notornis* 38: 257–265.