

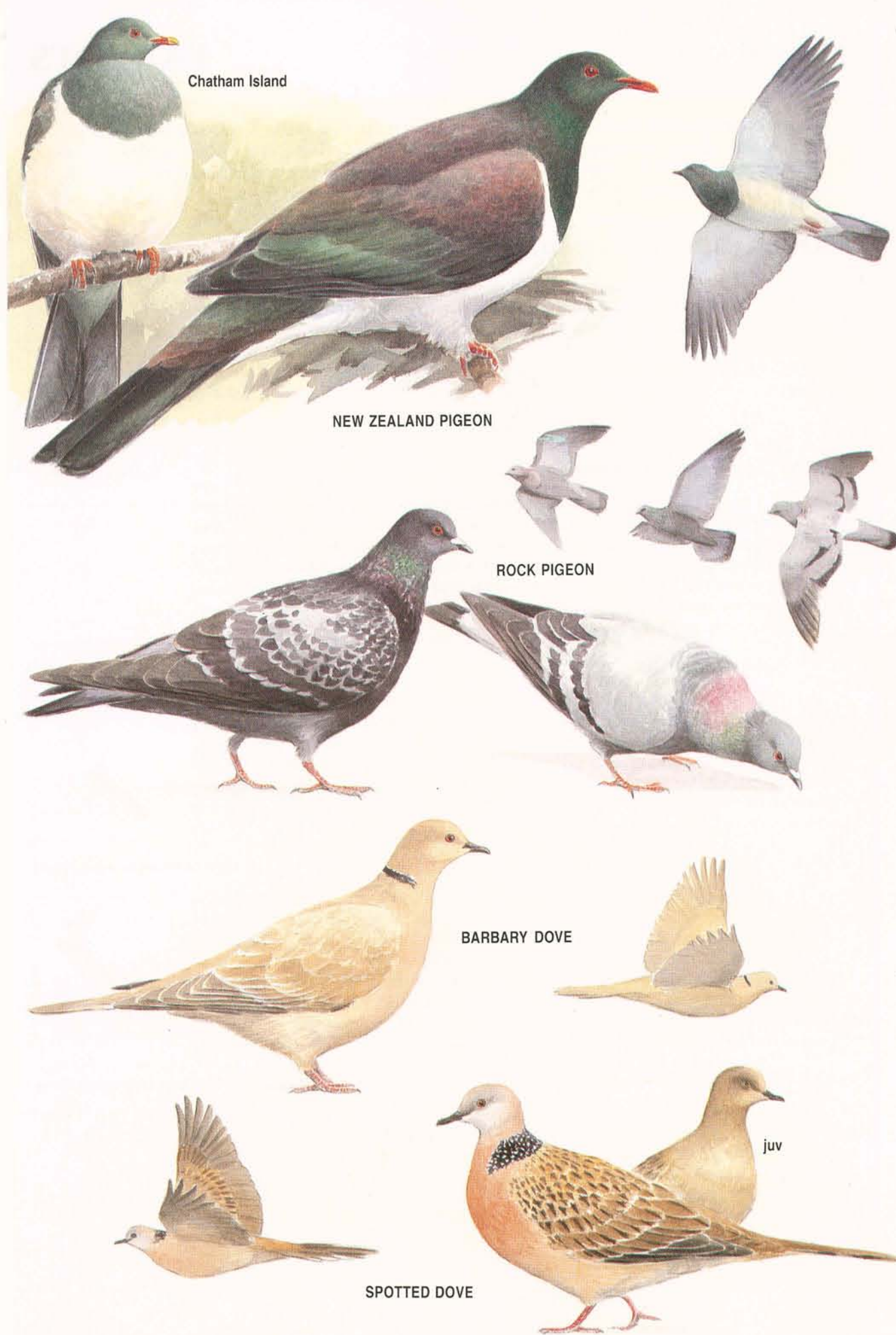
Medium to large landbirds with short bill, small head, rounded wings and short feathered legs. Sexes alike. Calls simple and often repetitive variations of 'coo'. Flight strong, direct and often noisy. Aerial displays of stall dives are part of breeding displays. Can breed at any time of year if food supplies are suitable. Lay 1-2 white eggs on a flimsy platform of sticks. Short incubation and nestling periods; young fed 'crop milk' and, later, other regurgitated food. They often fledge well below adult weight, with short wings and tail, and dull bill and feet. All are herbivorous; the New Zealand Pigeon feeds on fruit and foliage, the three introduced species feed on seeds, especially grain.

NEW ZEALAND PIGEON (Kereru, Kukupa, Parea) *Hemiphaga novaeseelandiae* Common endemic

51 cm, 650 g (mainland); 55 cm, 800 g (Chathams). Largest pigeon in NZ. Head, throat, upper breast and upperparts metallic green with purplish sheen and bronze reflections, especially around neck (mainland), or with ashy-grey wash (Chathams); sharp line separates upper breast from white lower breast, belly and legs. Eye crimson; bill red with orangish tip; feet crimson. Juvenile similar, but upperparts duller, smudgy upper breast, dull bill and feet, and often the tail is shorter. In flight, strong steady wingbeats, broad rounded wings and long broad tail; *noisy swish of wings* is distinctive. Call a single soft penetrating 'kuu'. **Habitat:** Native forests, especially in lowland areas, scrub, forest patches among farmland, rural and city gardens and parks. **Breeding:** Variable, depending on availability of ripe fruit; usually Oct-Apr.



[Sp 254]



PIGEONS and DOVES

Columbidae

About 290 species worldwide; 1 is endemic to New Zealand and 3 have been introduced.

Usually the larger members of the family are called pigeons, and the smaller ones, doves.

Pigeons and doves have plump bodies with short legs and necks, small heads and short, straight bills. The plumage is soft, dense and loose, and some have brilliant or iridescent colouring. They feed mainly on vegetable matter and can be split into two groups: grain-eaters and fruit-eaters. Both groups supplement their diet with foliage, buds and flowers. Pigeons and doves have a large crop for storing grain or fruit. The fruit-eating pigeons play an important ecological role in forest regeneration, transporting intact seeds of trees and shrubs and depositing them at a new site.

Unlike most birds, pigeons can drink without raising their heads to swallow. They are strong fliers and have aerial displays in which the bird stalls and dives with wings and tail held stiffly, and they also clap their wings together above their backs during display flight.

The nest is rudimentary, usually a flat basket of interwoven twigs in a tree or on

the ledge of a cliff or an artificial structure. All species lay only one or two small eggs; most granivorous species lay two eggs, and most fruit pigeons lay only one. The total clutch weight, at on average 9% of female body weight, is the lightest of all bird groups. The breeding season is usually determined by suitable food being available, and normally several broods are reared each year. This is helped by having very short incubation and fledging periods, and the young usually fledge well below adult weight. Clutches are sometimes overlapped, eggs being incubated in one nest while chicks are still being fed in another.

Apart from Emperor Penguins and flamingoes, pigeons and doves are the only birds to produce food for their chicks. They feed their chicks (sometimes called squabs) crop-milk, a protein-rich, cottage-cheese-like secretion from the crop wall. At first, crop-milk is the only food, but as the chicks grow, regurgitated foods form an increasingly large part of the diet.

Reading: Goodwin, D. 1970. *Pigeons and Doves of the World*. London: British Museum. Robertson, H.A. 1988. *J Zool (Lond)* 215: 217-229.

254. NEW ZEALAND PIGEON

***Hemiphaga novaeseelandiae* Plate 59**

Other names: Kereru, Kukupa (northern North Island), Parea (Chathams), Woodpigeon

Size: 51 cm, 650 g (NZ); 55 cm, 800 g (Chathams)

Geographical variation: Two subspecies: the Kereru or Kukupa *novaeseelandiae* breeds on the North, South and Stewart Islands and on many forested offshore islands; the Parea *chathamensis* breeds on the Chatham Islands.

Distribution: New Zealand only, although they were on Norfolk Island (subspecies *spadicea*) until the early 1800s. New Zealand Pigeons are found throughout the North, South, Stewart and Chatham Islands, and until the mid-1800s on Raoul Island, Kermadecs. They are also on many forested

offshore islands. On the mainland, they are most common in Northland, the King Country, Nelson and the West Coast. They favour native lowland forests dominated by podocarps, tawa, taraire and puriri, bush patches on farmland, gardens, and parks of cities. Their breeding and wintering distributions are similar, but birds move long distances (100 km) to good sources of fruit or foliage outside the breeding season.

On the Chathams, they are mainly in the forests of southern Chatham Island, especially around the Tuku River, but a few are seen elsewhere on Chatham Island, and on Pitt and South East Islands.

Population: Kereru are widespread and locally common, but in serious decline in

many places; Parea: c. 150 in 1994.

Conservation: Protected threatened endemic. In the early 1900s, the New Zealand Pigeon was in serious decline from overhunting and clearance of lowland forest, but with protection since 1921, and perhaps the planting of food plants such as tree lucerne and willows, it increased. Although still widespread and locally common, Kereru are now threatened because in many places adult mortality (from illegal hunting, predation, starvation) exceeds breeding productivity, which is low because of loss of eggs and chicks to rats, stoats and possums, and competition for fruit by possums may reduce breeding attempts. Experimental control of predators has improved breeding on the mainland, and Kereru have increased greatly on Kapiti Island in the decade since possums were eradicated.

The Parea is endangered but now increasing. They were common in the 1870s, but by 1990 the population had declined to as few as 40 birds. Predator control and fencing in and around the Tuku Valley has led to improved breeding and rapid population growth. Birds are now venturing into parts of Chatham Island where they have not been seen for many years.

The conservation of New Zealand Pigeons is particularly important because they play a key ecological role in the regeneration of native forests by dispersing the seeds of large-fruited trees and shrubs, some of which (e.g. miro, tawa, taraire, puriri and karaka) are too large to be dispersed by other birds.

Breeding: The timing of breeding is closely linked to the timing of fruits being available; they can lay at any time of the year, but also some or all pairs fail to breed in years when fruit is in poor supply. Kereru lay mainly in September-February, and Parea mainly June-October. During the season, each pair can lay 2-3 clutches, which can be overlapping, birds incubating while still feeding a chick in another nest. Pairs usually occupy the same area each breeding season. The nest is a platform of sticks on a horizontal fork or in a tangle of vines 2-15 m above the ground, and the egg or chick can often be seen through the nest.

They lay 1 white egg (48 x 33 mm, 30 g).

Both adults incubate for 27-30 days (Kereru) or 27-29 days (Parea); females incubate from late afternoon to mid-morning, males through the middle of the day. Both adults brood the chick. It is at first fed just crop-milk, a protein-rich secretion from the crop wall of the adults, but as it grows, regurgitated fruits form an increasingly large part of the diet. The chick fledges at 30-45 days old (Kereru) or 36-53 days old (Parea), well below adult weight and with a conspicuously short tail. The chick is fed by regurgitation for several weeks after fledging. The first chick raised is evicted when its parents re-nest, but the last chick raised stays close to its natal territory for at least 2-3 months. First breeding can be at less than 12 months old, but is usually at 1-2 years old. The oldest banded bird in the wild lived at least 6 years, but some are likely to live 10 or more.

Behaviour: The most conspicuous breeding display is the display dive; a bird dives from the perch, stalls, and then dives on stiffly held wings. This display is done by both sexes, but particularly by males, close to the time of egg-laying, often, but not always, close to the nesting area. Other breeding displays include close chases, head-and-neck-bobbing, and a display where the male bounces up and down on a branch while posturing and calling. Incubating or brooding birds defend their nest with grunts and wing-flicking.

Feeding: Herbivorous; fruits are preferred and in some parts of the country are the sole diet. The preferred fruits eaten by Kereru are of miro, tawa, taraire, puriri and pigeonwood; other main fruits are of kahikatea, coprosma, titoki, nikau, karaka, privet, elder and plums. Supplejack and cabbage-tree fruits are also eaten but are much less preferred. On the Chathams, the main fruits eaten by Parea are of matipo, hoho, mahoe and karamu. When fruit is in short supply, New Zealand Pigeons feed on foliage, especially old leaves of kowhai, tree lucerne, broom and clover, leaves of coprosma, hoheria and *Parsonsia*, and young leaves or buds of willow, elm and poplar. Flowers of kowhai, tree lucerne, broom and laburnum also form an important seasonal part of their diet.

Reading: Clout *et al.* 1988. *Notornis* 35: 59-62. Clout *et al.* 1986. *Notornis* 33: 37-44. Clout *et al.* 1995. *Ibis* 137: 264-271. McEwen, W.M. 1978. *NZ J Ecol* 1: 99-108. Pierce, R.J. & Graham, P.J. 1995.

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