

Diurnal birds of prey with long fingered or pointed wings; long tail; short hooked bill with coloured facial skin at the base of the bill (cere); powerful, largely unfeathered legs with long sharp talons for grasping prey or gripping carrion. Sexes usually alike, but females larger. Juveniles darker than adults.

**NEW ZEALAND FALCON (Karearea) *Falco novaeseelandiae* Uncommon endemic**

♂ 43 cm, 300 g; ♀ 47 cm, 500 g. *Fast-flying raptor with rapid beats of long pointed wings*; also soars and glides. Adult has head, sides of face and vertical patch (like drooping moustache) below eye dark brownish black, faint rufous eyebrow; nape, back, wings and tail bluish black, faintly barred buff. Base of bill and chin white, throat and sides of neck buff streaked dark brown; breast and belly dark brown narrowly barred white; thigh and undertail rufous. Bill black, greyer at base; cere, legs and feet yellow; eye dark brown. Juvenile distinctly darker brown and less boldly marked. Bush Falcon (North and northwestern South Is) as above; eastern form (eastern South I) larger and paler; southern form (southwestern South, Stewart and Auckland Is) intermediate, more rufous on Auckland I. Often perches high in trees or on a rock, swoops to catch prey. Call a loud rapid 'kek-kek-kek'. **Habitat:** Forests and bush patches, open tussockland of South I. Juveniles wander to cities, orchards, riverbeds and offshore islands. **Breeding:** Sep–Feb. [Sp 143]



**RAPTORS**

The raptors, or diurnal birds of prey, are found worldwide from inshore marine habitats to the mountain tops. There are about 217 species of eagle, kite, hawk and harrier (Accipitridae), of which only 1 breeds in New Zealand and 1 is a vagrant, although

*Harpagornis moorei* and of a sea eagle *Ichthyophaga australis* show that New Zealand used to have a greater variety of raptors.

New Zealand raptors are medium-to-large, mainly brown birds. Raptors have long wings and tail; long, unfeathered powerful feet with

**143. NEW ZEALAND FALCON**

**Other names:** Karearea, Bush Hawk, Sparrow Hawk

**Size:** 45 cm; males 300 g, females 500 g

**Geographical variation:** Treated as one highly variable species, with three forms that differ in size, colour and habitats: the 'Bush Falcon' of forests of the North Island and the northwestern South Island, the 'Eastern Falcon' of the open country of the eastern South Island, and the 'Southern Falcon' of coastal Fiordland, Stewart Island and the Auckland Islands. The forms intergrade and show clinal variation with habitat rather than latitude.

**Distribution:** New Zealand only. They breed in native and exotic forest in the North Island, mainly south of a line from northern Taranaki to Whakatane (Bay of Plenty), although a few pairs breed in the Coromandel Range. In the South Island, they breed in dry tussockland and rough farmland in hills along the eastern side of the Southern Alps from Marlborough to Southland, and in forests of northwestern Nelson, the Southern Alps, West Coast and Fiordland. Rare on Stewart Island and its outliers. Well established on the Auckland Islands. Known from the Chathams from an egg collected before 1888 and from subfossil bones. Adults are quite sedentary, but juveniles wander widely in autumn and winter and account for most sighting of falcons on offshore islands, in farmland and orchards, and in towns and cities.

**Population:** Widespread but rare; in the 1970s there were c. 4000 pairs: 3150 pairs of Eastern Falcons, 650 pairs of Bush Falcons and 200 pairs of Southern Falcons.

**Conservation:** Protected threatened endemic. Falcons may have never been common in New Zealand, but the clearance of much

**Accipitridae and Falconidae**

there are occasional rumours of large eagles, presumably vagrants from Australia. There are 61 species of falcon and kestrel (Falconidae); again only 1 species breeds in New Zealand, but 2 are vagrants. Subfossil bones of a large, long-legged, short-winged eagle

very sharp talons; a small, broad, hooked bill with a waxy cere at the base of the upper bill; and large eyes.

**Reading:** Brown, L.H. *Birds of Prey*. London: Hamlyn. Cade, T.J. 1982. *The Falcons of the World*. London: Collins. Newton, I. 1976. *Population Ecology of Raptors*. Berkhamsted: Poyser.

***Falco novaeseelandiae* Plate 33**

lowland native forest has reduced their range, and selective logging of large podocarps has removed their preferred nesting sites. These changes are partly offset by the good hunting opportunities along forest edges created by roading or partial forest clearance and by the introduction of mammals (especially rabbits and hares) and of small birds (especially finches and Skylarks).

Although Falcons have been protected since 1970, they are sometimes shot by pigeon fanciers and poultry farmers when a young bird discovers an easy source of food. Falcons are likely to be illegally caught for falconry, an activity that is strictly controlled in New Zealand. Trained Falcons bred in captivity under permit have been used in experiments to scare birds from airfields and vineyards. **Breeding:** Most established pairs remain on territory all year. In late winter and early spring, pairs are often seen together doing aerial displays, including food passes and aerobatics. The nest is a simple scrape on a sheltered cliff ledge, on a slip face, under a rock overhang or a fallen log, or high in a tree in a clump of *Astelia*. Laying is in September–December. They lay 2–3–4 eggs (49 x 37 mm, 47 g), which are buff to rich reddish brown with chocolate blotches. Incubation is shared in shifts of 1–4 hours and takes c. 30 days.

The chicks are mainly brooded by the female for the first 10–14 days and are fed by the female only. However, the male gathers most of the food for the female and the chicks and passes the food to the female by dropping it as both birds fly close to the nest. When the chicks are c. 2 weeks old, the female starts hunting too. Male chicks fledge at c. 32 days, but females stay until c. 35 days old. They

retain some natal down until about 6 weeks old. Their parents continue to feed them with aerial food passes (drops or talon-to-talon transfers) and at perches for over a month, but chicks start hunting when about 7 weeks old and most are independent 2 months after fledging. They soon disperse widely. Although some attempt breeding at 1 year old, most do not start until they are 2 years old. **Behaviour:** Falcons are fiercely territorial in the breeding season and make repeated dive attacks on people near the nest; this is often the first sign that a pair has established a territory in an area. This attack is accompanied by a characteristic 'kek-kek-kek-' call, which is also the main call heard from both sexes outside the breeding season.

**Feeding:** Falcons are fierce and fearless predators of live prey, especially small birds (finches, Skylarks, Blackbirds and Song Thrushes), small mammals (young rabbits and hares) and large insects (grasshoppers and beetles). They take some large birds, including New Zealand and Feral Pigeons, Magpies and even White-faced Herons and Black-backed Gulls. They usually wait on a perch until they see the quarry and then

directly attack, or sometimes head off in another direction to gain height before turning to dive from behind. Some attacks are mounted by the Falcon flying swiftly around a tree or a corner of forest or a building to startle a feeding flock, and then selecting and attacking one bird. They catch prey by the sharp talons, not the bill, but kill large prey by biting the back of the neck. Rarely feed on carrion.

**In the hand:** Juveniles are like adults, except the upperparts of juveniles are uniformly coloured rather than having pale feather-tips, and they lack barring on the flanks. Females are much larger than males, and wing measurements of adults do not overlap, despite marked differences in size between the various forms: females 268–308 mm cf. males 226–267 mm. Bush Falcons are smallest, e.g. wing averages 273 mm in females and 236 mm in males cf. 281 mm and 248 mm respectively for Southern Falcons and 297 mm and 255 mm in Eastern Falcons.

**Reading:** Fox, N.C. 1978. *Notornis* 25: 203–212. Fox, N.C. 1978. *Notornis* 25: 317–331. Fox, N.C. 1988. *Notornis* 35: 270–272. Lawrence, S.B. & Gay, C.G. 1991. *Notornis* 38: 173–182.