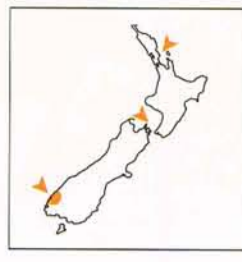


Birds of marsh and open water. Most are black, brown and purple-blue. Sexes alike. Wings short and broad. The bill extends onto their forehead as a shield, usually with diagnostic colour. Their strong legs and long toes aid walking on floating vegetation. Toes may be lobed (coots) for specialised swimming. They run well, walk with flicking tail, exposing a white undertail, and swim with bobbing head.

TAKAHE (*Notornis*) *Porphyrio mantelli*

Rare endemic

63 cm, 3 kg. Like an enormous Pukeko. *Flightless*. Colour ranges from iridescent dark blue head, neck and breast and peacock-blue shoulders to olive-green and blue back and wings. *Bill and shield massive, scarlet*, paler toward the tip; legs and feet red; eye brown. Immature duller; bill and shield dark grey. Mainly vegetarian; *leaving behind chewed and abandoned stems of tussock or other grasses* and 8 cm long *sausage-shaped fibrous droppings*. Male and female duet with a loud Weka-like, but *slow and deep, 'coo-eet'*; alarm note a *deep resonant 'oomf'*. **Habitat:** Natural range now tussock grassland and beech forest in mountains west of Lake Te Anau. Introduced to rank grassland on Tiritiri Matangi, Kapiti, Mana and Maus Is. **Breeding:** Oct–Jan. [Sp 164]



RAILS, GALLINULES and COOTS Rallidae

About 140 species, of which 8 breed in New Zealand. Midden evidence shows that 8 other endemic species became extinct between the arrival of Maori, and European settlement, and the Chatham Island Rail *Rallus modestus* became extinct in about 1900. Two other species are vagrants to New Zealand, and a Corncrake *Crex crex* was reputedly killed near Nelson in 1865, but this record has not been officially accepted.

higher and show good ability to colonise isolated islands. Island forms tend to become flightless.

The rails are mainly aquatic birds, all capable of swimming well. In New Zealand, they range in size from the small Marsh Crake to the large flightless Takahe. Apart from the Pukeko and Weka, rails and crakes are secretive birds, usually skulking in freshwater swamps, and estuarine mangroves and reedbeds. On some mammal-free islands, however, they live on the forest floor. Rails have slim bodies that help them move through dense vegetation, moderately long powerful legs with long unwebbed toes that help them walk in wetlands, a short tail, which is flicked up and down as they walk or swim, and short broad wings. Apart from the flightless Weka and Takahe, rails have low, laboured flight by day, but at night they fly

The two species of gallinule breeding in New Zealand, the Takahe and the Pukeko, are believed to represent two invasions from Australia of the cosmopolitan Purple Swamphen *Porphyrio porphyrio*; the Takahe arrived several million years ago, and the Pukeko much more recently. Typical of ancient New Zealand birds, the Takahe has become larger and flightless.

The gallinules and coots have a bony frontal shield extending from the bill to cover the forehead. The legs of coots are quite short, and the toes have lobes of skin that help them swim.

Most species nest solitarily, but Pukeko form groups and several females can lay in the same nest. The cup-shaped nest is generally well concealed in dense swamp vegetation or among *Carex* clumps; however, coots construct an exposed floating platform attached to raupo or rushes. The downy young are capable of walking, running and swimming within days of hatching.

Reading: Ripley, S.D. 1977. *Rails of the World*. Toronto: M.F. Feheley.

164. TAKAHE *Porphyrio mantelli*

Plate 37

Other names: Notornis, Moho
Size: 63 cm; 3 kg
Geographical variation: The subspecies *hochstetteri* was originally throughout the South Island, while the larger, extinct *mantelli* was in the North Island.
Distribution: Takahe are widespread as subfossils and in middens, but there were only four confirmed sightings during the nineteenth century, all in or near Fiordland. They were thought extinct until 1948, when G.B. Orbell found them again in the Murchison, Kepler and Stuart Mountains, west of Lake Te Anau, Fiordland. Their natural range is now confined to the Murchisons. There are successful small groups established on four islands, Tiritiri Matangi (Hauraki Gulf), Kapiti and Mana (western Wellington) and Maud (Marlborough Sounds); introduced captive-bred stock in the Stuart Mountains; and a few captive breeding birds at the National Wildlife Centre (Mt Bruce), Te Anau Wildlife Centre and Burwood Bush (near Te Anau).
Population: At their rediscovery in 1948, the total was c. 250, at most 300, birds. They declined in the 1960s and 1970s, and since 1982 total numbers in the wild have fluctuated between 110 and 225 birds. In 2004, there were c. 150 Takahe in Fiordland, c. 75 on offshore islands and c. 30 in captivity.
Conservation: Protected endangered endemic. The aims of current management efforts are to raise breeding success and so restore the population in the Murchisons and expand numbers elsewhere in Fiordland to about the 500 that the area is thought able to support, and to consolidate the four island

populations. Breeding is closely monitored, and eggs that are infertile and 'extra' eggs beyond one per clutch are removed so that every Takahe has one fertile egg to incubate, and the 'surplus' goes to the Burwood Rearing Unit to be raised for release into the wild. A special effort is made to prevent Takahe from being imprinted on people, and so chicks are fed by puppets. The main competitor, red deer, and the main predator, the stoat (and possibly the Weka), are being controlled to improve the quality of the mainland habitat.

Breeding: Laying is in October–December. They lay 1–2–3 pale buff eggs (74 x 49 mm, 97 g) with irregular, widely spaced brown blotches. Both sexes incubate for 29–30–31 days. Eggs hatch c. 48 hours apart, and the chicks soon leave the nest and are attended by both adults. Young are capable of breeding at the end of their first year but usually begin in their second year. They may stay with their parents for 1–2 years and share the chick-rearing role. They are potentially very long-lived (14–20 years).

Behaviour: Takahe are fiercely territorial in the breeding season, and some males will attack human intruders. Following breeding, the family party usually stays together close to the nesting territory, and sometimes yearlings will help their parents with incubation and care of young. The main contact call by day or night is a loud, Weka-like 'coo-eet', and the alarm note is a very deep, resonant 'oomf'. Pairs often duet.
Feeding: The main foods of the naturally distributed high-altitude birds are snow tussocks (*Chionochloa* spp.) and, in winter in

the beech-forested valleys, the rhizomes of the fern *Hypolepis millefolium*. On islands, they take mainly introduced grasses. They dig up fern rhizomes and pull out snow-tussock leaf bases with their bill. Holding them in their feet, they macerate the bases, digesting only the plant juices, not the fibres, which remain

as typical green, sausage-shaped droppings of largely unaltered fibres.

Reading: Crouchley, D. 1994. *Takahe Recovery Plan*. Wellington: DoC. Mills, J.A. & Lavers, R.B. 1974. *Notornis* 21: 312–317. Mills, J.A. et al. 1984. *NZ J Ecol* 7: 57–70. Mills, J.A. et al. 1991. *Ornis Scand* 22: 111–128.