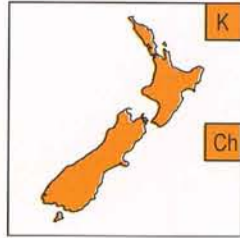


Birds of marsh and open water. Most are black, brown and purple-blue. Sexes alike. Wings short and broad. The bill extends onto their forehead as a shield, usually with diagnostic colour. Their strong legs and long toes aid walking on floating vegetation. Toes may be lobed (coots) for specialised swimming.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

PUKEKO (Purple Swamphen) *Porphyrio porphyrio*

Abundant native

51 cm; ♂ 1050 g, ♀ 850 g. Deep blue with black head and upperparts. Undertail white, flirled with every step. Bill and shield scarlet; eye red; legs and feet orange-red. Sexes alike. Immature has much brown and buff in the plumage and on bill and legs. Voice a loud unmusical screech. Runs well and swims with tail held high. Clambers about and may perch in scrub and trees. When disturbed in the open, runs to cover or flies, legs dangling, for a short distance. Flies high at night, calling – a loud harsh screech. **Habitat:** Wetlands, estuaries, short damp pasture and parks. Often in extended family groups. **Breeding:** Aug–Mar.



[Sp 163]



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.

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

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

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.

163. PUKEKO *Porphyrio porphyrio*

Plate 37

Other names: Purple Gallinule, Purple Swamphen

Size: 51 cm; males 1050 g, females 850 g

Geographical variation: About 15 subspecies have been described. The form *melanotus* breeds in northern and eastern Australia, Tasmania and New Zealand, including the Kermadec and Chatham Islands.

Distribution: The range of the Pukeko, or Purple Gallinule/Swamphen as it is known overseas, includes southern Europe, Africa, India, Southeast Asia, New Guinea, Melanesia, western Polynesia, Australia and New Zealand. It is found throughout the North, South and Stewart Islands and many of their offshore islands, including Great Barrier, Great Mercury, Waiheke and Kapiti Islands, and on the Chatham Islands. A few are in the Denham Bay swamp and the Blue Lake on Raoul Island, Kermadecs. A vagrant to the Three Kings Islands and to Campbell Island. Because few are known from subfossil material or middens on the New Zealand mainland, it seems likely that the Pukeko became established within the past 1000 years and became abundant only several hundred years ago as forest was cleared.

Population: Abundant in most districts throughout their range, especially favouring rough damp pasture near wetlands.

Conservation: Partially protected native; legally harvested during the duck-shooting season but not a highly prized gamebird. In some areas, Pukeko are regarded as a pest for their grazing and damage to grain and vegetable crops. They have adapted well to the changes humans have made to swamps and forests, and so have prospered particularly on farmland.

Breeding: Eggs are usually laid in August–

February, with the peak in October–November, but a few may breed in any month. Pukeko build their nests on a tussock or rush clump usually standing in water, the grass or rushes being beaten down into a platform; usually several nests are made at once. Territories are often occupied by groups rather than pairs. Groups can consist of two laying females and at least two males, and all share the incubation. Groups can contain non-breeding 'helpers', offspring from previous broods that help in feeding and caring for the chicks. Each adult female lays 4–5–6 buff eggs (50 x 35 mm) with blotches of brown distributed evenly or in a ring at the larger end, but as several females can lay in the same nest, clutches of 10–15 eggs are not uncommon. The incubation period is 23–25–27 days. Young Pukeko may breed at the end of their first year but often not until their second year. Life expectancy depends on the harshness of the climate; it averages 3–4 years in Otago but 5–6 years near Auckland. The oldest Pukeko recorded in New Zealand lived over 9 years. **Behaviour:** In places with plenty of cover, Pukeko prefer to run (if on land) or swim to cover, but in more open places they readily take flight for short distances. When they do fly, their take-off is laboured: running across the surface with rapid wingbeats, taking to the air with feet dangling and head and neck stretched out. Sometimes they land in the top of raupo, scrub or willows, and clumsily perch and clamber about there. They often call loudly, with a harsh screech.

Feeding: Diet is a wide variety of swamp and pasture vegetation; also animals, mainly small insects and spiders, but also frogs, small birds and eggs. From late summer to mid-winter, they form flocks to graze on pasture,

especially clovers, usually near a swamp, pond, ditch or clump of rushes, to which they return if disturbed. Larger food, e.g. raupo *Typha* or other seed-head stem, may be held by one foot like a parrot and stripped or macerated by the powerful bill.

In the hand: Birds may be sexed by the measure-

ments front of nostril to tip of bill and depth of bill, males being larger.

Reading: Carroll, A.L.K. 1966. *Notornis* 13: 133–141. Carroll, A.L.K. 1969. *Notornis* 16: 101–120. Craig, J.L. 1980. *Anim Behav* 28: 593–603. Craig, J.L. et al. 1980. *Notornis* 27: 287–291. Fordham, R.A. 1983. *NZ J Ecol* 6: 133–142. Jamieson, I.G. 1994. *NZ Geographic* 21: 54–70. Jamieson, I.G. & Craig, J.L. 1993. *Natural History* 102: 50–57.