

Shags are medium to large aquatic birds. Most are all black, or black above and white below. Bill long, strongly hooked at the tip. Upright posture when perched. Short legs; feet are fully webbed. Many have brightly coloured facial skin when breeding. Sexes alike. In flight, wings short and broad, and neck is extended. Swim with head held uptilted and body low in the water.

BLACK SHAG (Kawau, Great Cormorant) *Phalacrocorax carbo* Common native

88 cm, 2.2 kg. Largest shag. Black with browner wings and tail, and white patch on cheeks and throat. Facial skin yellow, but early in breeding season it becomes orange-red below eye. Breeding adult also has a white thigh patch, a small black crest on nape and upper neck, and thin white streaks (filoplumes) on the crown and upper neck. Bill grey; eye green; feet black. Immature similar but dull brown above, brown mottled white below, and no throat patch. **Habitat:** Rivers, streams and lakes, also estuaries, harbours and sheltered coastal waters. **Breeding:** Apr–Jan. [Sp 91]



SHAGS

33 species worldwide in freshwater and marine habitats; 12 species breed in the New Zealand region, including 8 endemic species.

In New Zealand, all members of the Phalacrocoracidae are called shags, whereas elsewhere the term 'cormorant' is used for members of the genus *Phalacrocorax*. Foot colour varies between the three genera in New Zealand: black in the mainly freshwater *Phalacrocorax*, pink in the marine *Leucocarbo*, and yellow in the marine *Stictocarbo*.

Shags are medium to large, long-necked aquatic birds with a stiff, wedge-shaped tail, and moderately short, rounded wings, which black-footed shags hold out to dry when perched. They feed by diving from the water surface to catch fish and crustacea with their long hooked bill. They use their webbed feet to swim underwater. The outermost toe is

Phalacrocoracidae

longest, and a web connects the inner toe with the long hind toe. In the breeding season, bare skin on the face becomes brightly coloured and contrasts with the eye and bill.

Shags sometimes feed in flocks, but they typically roost in flocks and breed in colonies on cliffs or rocky islets, or in trees overhanging water, sometimes together with other shags. They have an elaborate series of ritualised courtship displays at or near the nest, a bulky platform made of sticks or seaweed. Their eggs have a chalky encrustation on the surface. Both sexes share incubation. The chicks are naked at hatching but soon develop down. Both parents regurgitate food for the chicks. If a predator approaches, chicks in tree nests overhanging water will jump well before they can fly, but they are adept at climbing back up to the nest.

91. BLACK SHAG *Phalacrocorax carbo*

Plate 23

Other names: Kawau, Black Cormorant, Great Cormorant

Size: 88 cm, 2.2 kg

Geographical variation: At least three subspecies: *novaehollandiae* breeds throughout Australia, New Guinea and New Zealand.

Distribution: Breed widely from eastern North America (Newfoundland to Maine), Greenland, Iceland, across Europe and Asia, Africa and Australasia. In New Zealand, they breed throughout the main islands and on the Chatham Islands; vagrant to Macauley Island (Kermadecs), The Snares and Campbell Island. They are found in sheltered coastal waters, estuaries, harbours, rivers, streams, dams and lakes up to the subalpine zone. It seems that some young disperse widely – a nestling banded at Lake Wairarapa was

recovered at Lord Howe Island, and one banded in New South Wales was recovered near Westport. There is much local movement between feeding and roosting or nesting areas, but no evidence for regular long-distance migration in New Zealand.

Population: Widespread and moderately common (5000–10,000 pairs). Most nest in small colonies of 5–20 pairs, but colonies of over 50 pairs have been recorded in the Waikato, in the Lake Wairarapa wetlands, and at several sites on Chatham Island.

Conservation: Partially protected native. For many years, Black Shags were persecuted by fishermen who saw them as competitors for commercial fish species and for young trout. Black Shags were given partial protection in 1986 after studies had shown that they ate

many young eels and so were probably of some benefit to game-fishers. They are often caught in fishing nets and occasionally on hooked lines.

Breeding: Nesting colonies are commonly in willows, pines, pohutukawa or beech trees overhanging water, or on cliff ledges in river gorges. Some are on coastal cliffs or in low scrub on offshore stacks, and occasionally they nest on old maimai, on the ground (e.g. Wairau Lagoons, Farewell Spit) or in trees well away from water (e.g. in karaka trees in Gollans Valley, near Wellington). The nest is usually a large platform built of sticks, twigs, and flax, raupo and cabbage tree leaves, up to 10 m above the water or ground.

The breeding season is quite variable from colony to colony, and breeding may be delayed at some sites by disturbance from duckshooters. Most eggs are laid in June–October, but birds at Gollans Valley regularly lay in late April. They lay 2–3–5 bluish-green eggs (61 x 38 mm) 2 days apart. Incubation lasts 27–31 days. Chicks are able to scramble from the nest at c. 4 weeks old, but fledge at c. 7 weeks old. They are fed by their parents for 7–10 weeks after fledging. Some young breed at 2 years old, but most start at 3 years

old. A Black Shag banded in Europe lived nearly 20 years.

Behaviour: Generally feed alone, but sometimes they form flocks of 100+ birds where food is abundant. They often roost in small groups on logs, on rocks and in trees. They are generally silent away from their colonies, but at the nest they make a variety of croaks, grunts and wheezy whistles.

Feeding: Diet is mainly small and medium-sized fish (<35 cm long), including mullet, wrasse, red cod, spotties, smelt, eels, bullies, galaxids, trout and perch; the proportion of species varies greatly according to habitat. Freshwater crayfish, large invertebrates and molluscs are also taken. Black Shags feed in lakes, pools in rivers, estuaries and tidal inlets, and stay close inshore, mainly in water less than 3 m deep, but have been caught in crayfish pots set 12 m deep. Their dives usually last c. 20 seconds, with c. 6 seconds rest between dives, but dives of up to 58 seconds have been recorded.

Reading: Dickinson, P. 1951. *Aust J Mar Fresh Res* 2: 245–251. Falla, R.A. & Stokell, G. 1945. *Trans Roy Soc NZ* 74: 320–331. Sim, D. & Powlesland, R.G. 1995. *Notornis* 42: 23–26. Stonehouse, B. 1967. *Ibis* 109: 600–605.