

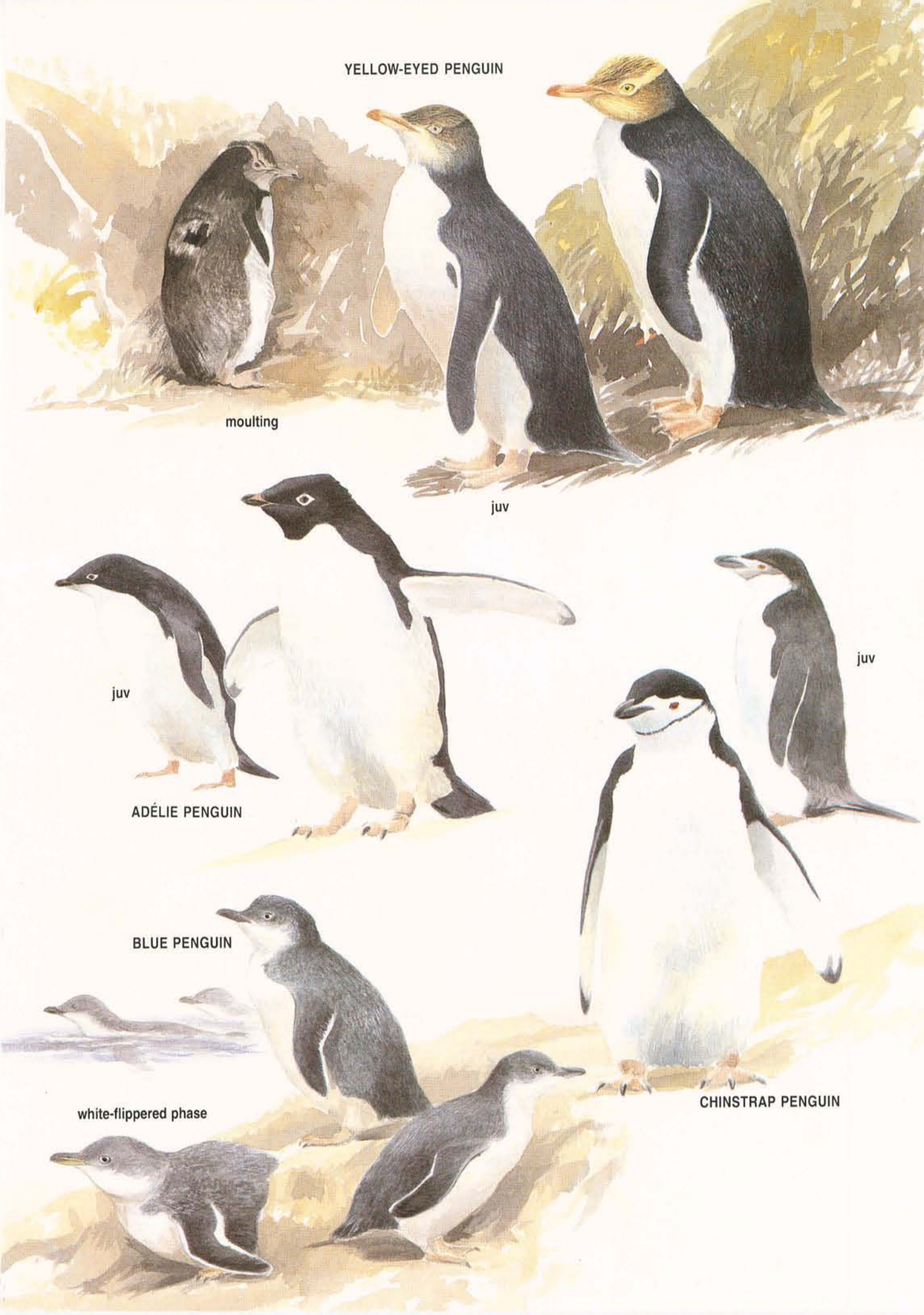
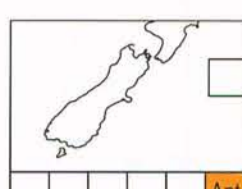
Flightless stocky seabirds with dark upperparts and white underparts. Wings modified into flippers. Robust bill. Short stout legs with webbed feet. Dense short and flattened feathers in adults; thick down in chicks. Swim low in the water, with head and upper back (occasionally tail) visible; some porpoise when swimming fast. Feed at sea by diving. On land, walk upright with waddling gait or short hops with flippers used to maintain balance. Toboggan on ice and mud. Visit land to breed and to moult. During the 2–6-week moult, birds look ragged while all feathers are replaced rapidly; birds fast and are unable to swim. Breed solitarily in burrows or under vegetation, or in large dense colonies on the surface. Lay 1–2 white eggs.

**CHINSTRAP PENGUIN** *Pygoscelis antarctica*

Rare native

75 cm, 5.5 kg. Black upperparts; sides of face from above eye, chin and underparts white, except for a narrow black band extending diagonally across face from behind eye to under throat. Juvenile has dusky face above facial band. **Habitat:** Breeds Antarctica from Antarctic Peninsula eastwards to Ross Dependency. Rare vagrants reach NZ mainland. **Breeding:** Nov–Mar.

[Sp 77]



**PENGUINS**

16 species confined to the Southern Hemisphere: 13 in the New Zealand region, including 4 endemic and 5 other breeding species.

Penguins are a clearly defined group of flightless, stocky seabirds standing up to a metre high. They are a primitive group dating back to the late Eocene, about 45 million years ago; fossils of three species have been found in the South Island from this era.

Penguins are covered with a waterproof coat of dense, short and flattened feathers; the wings are modified into flippers, and the tail is short and stiff. They have a large head and a powerful, short, stout bill. Their legs are short and stout, with webs linking the three forward-pointing toes. On land, they walk upright with an ungainly waddling gait, and hop over obstacles, using their flippers to maintain balance. On ice, they sometimes toboggan. In the water, they can swim rapidly, being propelled by their flippers only. Some species porpoise when travelling fast.

Penguins dive to catch food. The extreme example is the Emperor Penguin, which has been recorded diving to 450 m and staying submerged for 11 minutes. They feed on fish, crustaceans (especially krill), squid and a wide range of other marine invertebrates.

Penguins visit land to breed and moult, and some inshore species return to land on

**Spheniscidae**

most nights to roost. They have ritualised displays, and most give a variety of brays, trumpets and growls. Colonial breeders often engage in fights with neighbouring birds.

They usually lay a clutch of 1–2 whitish eggs each year; a few failed pairs attempt to re-lay. Nests vary from burrows for Little Blue Penguins and some Fiordland Crested Penguins to simple scrapes for most species. The King and Emperor Penguins build no nest and incubate the egg between the top of their feet and their body.

Penguins vary from solitary to colonial, some colonies being of millions of pairs. Eggs are small in relation to their body size, and have a long incubation period of 33–65 days depending on the species. Usually both sexes incubate, except that in the Emperor Penguin only the male incubates. Chicks hatch covered in thick down and are fed irregularly by both parents. In colonial species, chicks group together in crèches from about three weeks old until they have their natal moult into full feathers and leave the colony at 2–6 months old.

During the moult of 2–5 weeks in summer or autumn, birds look ragged and 'sick', as almost all the feathers are replaced simultaneously. During this time, the bird fasts and is unable to swim without getting waterlogged. If you find birds moulting, leave them alone, and do not return them to sea; contact

the Department of Conservation if a moulting penguin is in danger from dogs or other predators. Many records of unusual species visiting the New Zealand region are of wandering birds forced to come ashore in autumn to moult.

**Reading:** Davis, L.S. & Darby, J.T. (eds). 1990.

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**77. CHINSTRAP PENGUIN** *Pygoscelis antarctica*

Plate 19

**Size:** 75 cm, 5.5 kg

**Distribution:** Circumpolar, breeding mainly on the Antarctic Peninsula and islands in the subantarctic zone of the Atlantic Ocean, especially at the South Sandwich Islands (c. 5 million pairs). A very small breeding colony has recently been found on an islet off Sabrina Island, Balleny Islands, in the Ross Sea sector of Antarctica. Chinstrap Penguins feed inshore during the breeding season and near the northern limit of pack ice during winter, and so are rarely recorded north of 60°S. Vagrants have been recorded at Antipodes Island (1978), Invercargill (1980), Campbell Island (1984), Warrington, Otago (1992) and Kaikoura (2002).

**Population:** c. 10 pairs breed at the Balleny Islands; this is a minute fraction of the total world breeding population of c. 6.5 million pairs.

**Conservation:** Protected native. Formerly they were almost entirely confined to the South American quadrant of Antarctica, but they have increased and spread eastward into the Ross Sea sector of Antarctica.

**Breeding:** No studies in the New Zealand region, but elsewhere laying is in late November and December, about a fortnight after birds return to their colony. They lay 1–2–3 creamy white eggs (67 x 52 mm, 113 g) 3–4 days apart. The nest is a shallow cup on a slightly raised platform of small stones on an ice-free slope, often in mixed colonies

with Adélie and/or Gentoo Penguins. Incubation starts after the first egg but may be only partial until the second egg is laid. The male departs to sea once the second egg is laid, and the female takes the first incubation spell of c. 6 days. The male then incubates for 10 days. Shifts then alternate and shorten as incubation proceeds. The incubation period is 31–35–39 days; first eggs hatch about a day before the second egg.

Chicks are guarded for the first 3–4–5 weeks, during which time they are fed regularly. They then join small crèches until they fledge in late February to early March at 48–53–59 days old and at about 67% of adult weight. They are independent once they have left the colony. First breeding is at 3 years in both sexes.

**Behaviour:** Gregarious, breeding in large colonies and feeding in loose groups out of the breeding season. Compared with other penguins, they are bold and aggressive towards humans and other animals at their colony.

**Feeding:** Diet at Signy Island in the breeding season is mostly krill, especially *Euphausia superba*, with just a few fish and amphipods. They feed close to the surface but have been recorded diving to depths of 70 m.

**Reading:** Conroy, J.W.H. et al. 1975. In *The Biology of Penguins*. London: MacMillan.  
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