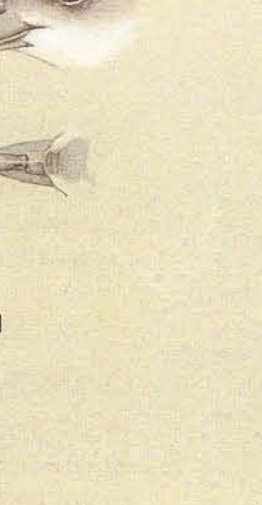
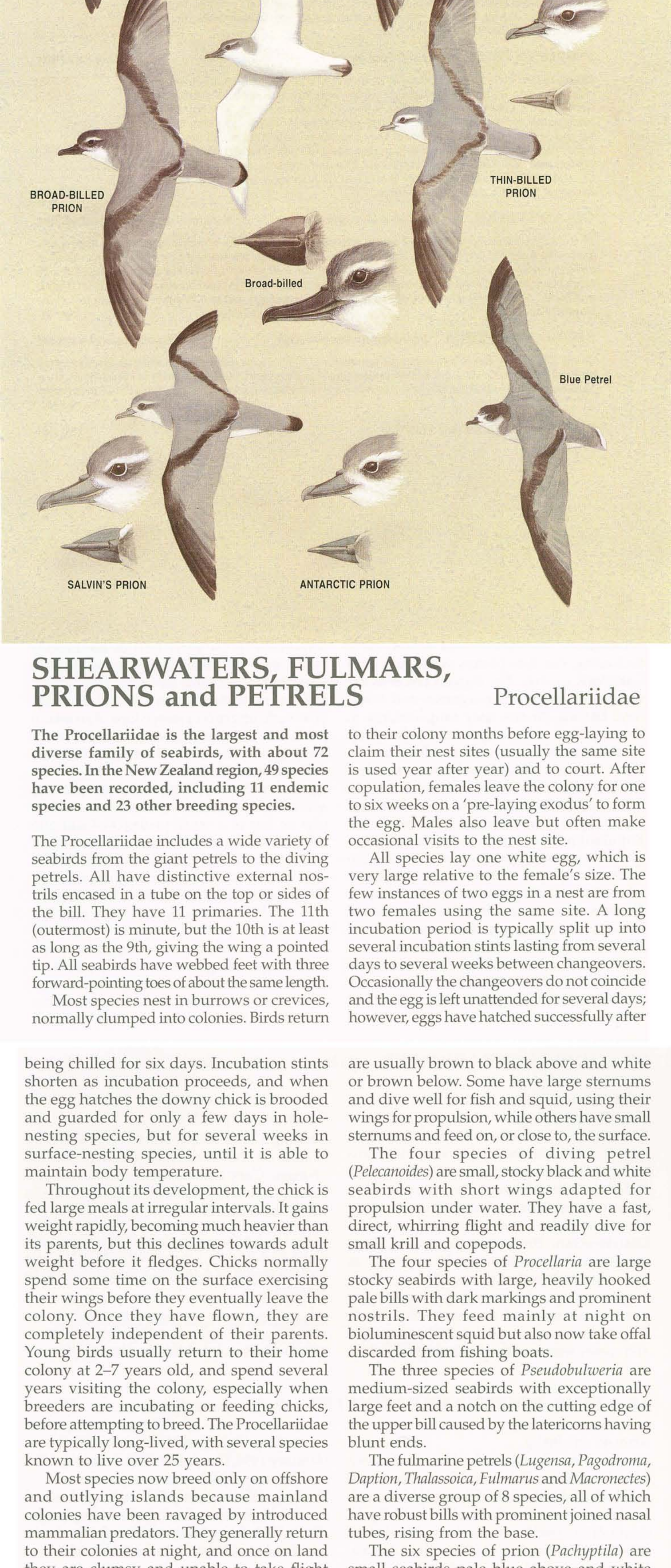
Text and images extracted from Heather, B.D. & Robertson, H.A. (2005) *The Field Guide to the Birds of New Zealand*. Penguin Books, Auckland. Pages 40, 41, 184, 185, 205, 206.

Small seabirds with blue-grey upperparts with black M across upperwings and lower back, white underparts, black-tipped tail, and blue legs and feet. Bill has comb-like lamellae on inside. Sexes and ages alike. Species separated by size, bill structure, face colours and extent of black on tail. Flight fast, buoyant and erratic; usually stay close to the surface. Feed near surface by plunging or dipping. Generally oceanic. Do not follow ships or fishing boats. Noisy at night at breeding colonies, with harsh cooing and cackling calls in air or on ground.

FAIRY PRION (Tïti Wainui) *Pachyptila turtur* **Abundant native**

25 cm, 125 g. Upperparts blue-grey; faint white eyebrow; bold black M across wings; *tail broadly tipped black, including tips of uppertail coverts*. Bill (22 x 11 mm) blue with large nail. **Habitat:** Breeds circumpolar subantarctic, including many islands around NZ, especially Poor Knights, Cook Strait, Motunau I, Foveaux Strait, The Snares and Chathams. Abundant in coastal waters near breeding colonies, and the most common beach-wrecked bird. Ranges through Tasman Sea and east of NZ. **Breeding:** Nov–Feb. **[Sp 43]**





SHEARWATERS, FULMARS, PRIONS and PETRELS

Procellariidae

The Procellariidae is the largest and most diverse family of seabirds, with about 72 species. In the New Zealand region, 49 species have been recorded, including 11 endemic species and 23 other breeding species.

The Procellariidae includes a wide variety of seabirds from the giant petrels to the diving petrels. All have distinctive external nostrils encased in a tube on the top or sides of the bill. They have 11 primaries. The 11th (outermost) is minute, but the 10th is at least as long as the 9th, giving the wing a pointed tip. All seabirds have webbed feet with three forward-pointing toes of about the same length.

Most species nest in burrows or crevices, normally clumped into colonies. Birds return to their colony months before egg-laying to claim their nest sites (usually the same site is used year after year) and to court. After copulation, females leave the colony for one to six weeks on a 'pre-laying exodus' to form the egg. Males also leave but often make occasional visits to the nest site.

All species lay one white egg, which is very large relative to the female's size. The few instances of two eggs in a nest are from two females using the same site. A long incubation period is typically split up into several incubation stints lasting from several days to several weeks between changeovers. Occasionally the changeovers do not coincide and the egg is left unattended for several days; however, eggs have hatched successfully after being chilled for six days. Incubation stints shorten as incubation proceeds, and when the egg hatches the downy chick is brooded and guarded for only a few days in hole-nesting species, but for several weeks in surface-nesting species, until it is able to maintain body temperature.

Throughout its development, the chick is fed large meals at irregular intervals. It gains weight rapidly, becoming much heavier than its parents, but this declines towards adult weight before it fledges. Chicks normally spend some time on the surface exercising their wings before they eventually leave the colony. Once they have flown, they are completely independent of their parents. Young birds usually return to their home colony at 2–7 years old, and spend several years visiting the colony, especially when breeders are incubating or feeding chicks, before attempting to breed. The Procellariidae are typically long-lived, with several species known to live over 25 years.

Most species now breed only on offshore and outlying islands because mainland colonies have been overrun by introduced mammalian predators. They generally return to their colonies at night, and once on land they are clumsy and unable to take flight rapidly; their only defence is by biting or by spitting stomach oil. The nestling is particularly vulnerable to predators because it is often left unattended for long periods while the parents feed at sea and emerges from the nest at night to exercise its wings in the week or two before it can fly.

The Procellariidae feed on a wide variety of sea life, ranging from some of the prions, which sieve zooplankton on comb-like lamellae along the edge of their bills, to the giant petrels, which scavenge on dead marine mammals and occasionally kill small seabirds. Most species feed within a few metres of the sea surface, but some shearwaters dive to at least 20 m. These seabirds have well-developed nasal glands for extracting salt from their blood and exuding it out of the prominent nostrils.

The shearwaters (*Calonectris*, *Puffinus*) include about 15 medium to large species with long slender bills and flat nasal tubes. They are usually brown to black above and white or brown below. Some have large sternums and dive well for fish and squid, using their wings for propulsion, while others have small sternums and feed on, or close to, the surface.

The four species of diving petrel (*Pelecanoides*) are small, stocky black and white seabirds with short wings adapted for propulsion under water. They have a fast, direct, whirring flight and readily dive for small krill and copepods.

The four species of *Procellaria* are large stocky seabirds with large, heavily hooked pale bills with dark markings and prominent nostrils. They feed mainly at night on bioluminescent squid but also now take offal discarded from fishing boats.

The three species of *Pseudobulweria* are medium-sized seabirds with exceptionally large feet and a notch on the cutting edge of the upper bill caused by the latericorns having blunt ends.

The fulmarine petrels (*Lugensa*, *Pagodroma*, *Daption*, *Thalassoica*, *Fulmarus* and *Macronectes*) are a diverse group of 8 species, all of which have robust bills with prominent joined nasal tubes, rising from the base.

The six species of prion (*Pachyptila*) are small seabirds pale blue above and white below with a prominent M-shaped mark across the upperwings and a dark-tipped tail. Comb-like lamellae on the inside of the bill are used to filter zooplankton.

The single *Halobaena* species looks like the prions but has a white-tipped tail and the upper bill has small tooth-like serrations at the base.

The gadfly petrels (*Pterodroma*) consist of 29 species of highly agile seabirds with long wings and short, laterally compressed black bills with a strongly hooked nail. They feed mainly on squid and small fish.

Reading: Harrison, P. 1987. *Seabirds of the World: a photographic guide*. London: Christopher Helm. Harrison, P. 1988. *Seabirds: an identification guide*. London: Christopher Helm. Imber, M.J. 1985. *Ibis* 127: 197–229. Murphy, R.C. 1936. *Oceanic Birds of South America*. New York: MacMillan. Serventy, D.L. *et al.* 1971. *The Handbook of Australian Seabirds*. Sydney: Reed. Warham, J. 1990. *The Petrels: their ecology and breeding systems*. London: Academic Press.

43. FAIRY PRION *Pachyptila turtur* Plate 12

Other name: Tïti Wainui
Size: 25 cm, 125 g
Distribution: Circumpolar, breeding on many subantarctic islands, in Bass Strait and on many islands around the New Zealand mainland and at the Chathams, The Snares, Antipodes Islands and possibly on islets off Campbell Island. The main colonies around the mainland are at the Poor Knights, in Cook Strait (Stephens, Trios and Brothers Islands), Motunau Island, Foveaux Strait islands and the muttonbird islands off Stewart Island. Some small colonies exist on islands off the Otago coast and also on ledges on nearby sea cliffs on the mainland.

In summer, they range through temperate waters around the mainland coast, in the Tasman Sea and east into the South Pacific. In winter, many are in Foveaux Strait, in the Cook Strait and Taranaki Bight area, and east of Northland, but some disperse further north into subtropical waters as far as the Coral Sea and the Kermadecs. Elsewhere, some reach waters off South America and South Africa. Birds banded on Stephens Island have been recovered mainly around New Zealand and eastern Australia. Fairy Prions are the most common bird beach-wrecked in New Zealand, with peaks of recoveries in February, when fledglings disperse to sea, and July–November, when many subadults are wrecked on west coast beaches after severe storms or persistent westerly winds.

Population: Abundant; 1 million+ pairs in New Zealand, but little data are available on numbers nesting at each colony.

Conservation: Protected native. Chicks used to be harvested by Maori but are now protected. Introduced predators (cats, rats and mustelids) have exterminated many colonies on offshore islands, but the existing colonies seem secure as long as they remain free of predators. At Stephens Island, tuatara are responsible for the loss of over 25% of eggs and chicks, but this probably has little effect. Occasional large wrecks (e.g. in the mid-1970s and mid-1980s) of mainly subadults are also natural events.

Breeding: Adults start returning to their breeding colonies from late March, but do not start cleaning out burrows until late July. Laying varies from mid-October at the Poor Knights, 19 October to 10 November at Stephens Island, to early November at Whero Island and at the Chathams. They lay 1 white egg (44 x 32 mm, 23 g) in a burrow 0.6–2 m long, or in a shallow crevice. Incubation shifts are of 1–2–5 days on the Poor Knights, but the other partner often returns each night; whereas on Whero Island, incubation spells are of 6–7 days. Eggs hatch 21 November to 4 December on the Poor Knights, 3–12 December on Stephens Island, and 18 December to 19 January on Whero Island. The incubation period is 44–47–54 days.

Chicks are brooded continuously for the first 1–2–5 days and then left unguarded. Chicks fledge from the Poor Knights in January, from Stephens Island from mid-January to early February, and from Whero Island from early February to early March. The fledging period is **45** days on the Poor Knights but 43–**50**–56 days on Whero Island. Pairs usually occupy the same nest site each year, and divorces are uncommon. Annual adult survivorship is estimated at 84%, giving a mean life expectancy of 5.9 years, but the oldest bird recorded lived over 22 years.

Behaviour: Nest in colonies. At sea, they are often seen in flocks as they feed, roost or stream back to their colonies at dusk. They are silent at sea but very vocal at their colonies, both in the air and on the ground. Males give a harsh, repeated three-note call: 'poor, pop, per', and a very rapid rattling call, whereas females give a harsh two-note call: 'errr, errr'.

Feeding: Diet is mainly krill, supplemented by other planktonic crustacea and invertebrates, and small fish. Most prey is taken from the sea surface.

In the hand: Fairy Prions have a much wider (35–45 mm) black band at the tip of the tail than other prions (except Fulmar Prions), the wing is 170–179–189 mm, and the bill is 20–25 mm long and 10–12 mm wide (but note that bills of beach-wrecked birds, especially juveniles, shrink as they dry out).

Reading: Harper, P.C. 1976. *NZ J Zool* 3: 351–371. Harper, P.C. 1980. *Notornis* 27: 235–286. Harper, P.C. 1987. *Notornis* 34: 169–192. Powlesland, R.G. 1989. *Notornis* 36: 125–140. Richdale, L.E. 1965. *Trans Zool Soc* (Lond) 31: 87–155. Walls, G.Y. 1978. *NZ J Ecol* 1: 91–98.