

Plate 11 FULMARINE PETRELS and BLUE PETREL

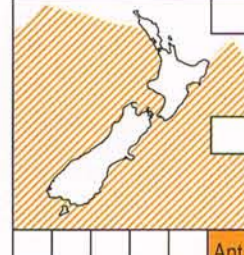
A diverse group of distinctive medium to large seabirds. Sexes alike. Most breed at high latitudes and lay 1 white egg, mostly in a scrape on ledges, in crevices or rockfalls; the exceptions being giant petrels (Plate 6), which lay in a cupped mound, and Kerguelen Petrels (Plate 15), which nest in a burrow.

ANTARCTIC FULMAR *Fulmarus glacialisoides*

Locally common native

50 cm, 800 g. Head, neck and underparts white; mantle, back, rump and tail pearly grey; upperwings pearly grey with darker grey trailing edge, and primaries black with large white patch near wingtip. Bill strong (45 mm), pinkish horn with blue tinge on nasal tubes, and black tip; legs and feet pinkish blue. Appears large-headed; glides on stiff wings. **Habitat:** Breeds circumpolar on coast of Antarctica and subantarctic islands of Atlantic Ocean; in NZ region, at Balleny Is. Ranges widely in southern oceans, and a few visit NZ waters in winter and spring, but sometimes many are beach-wrecked in spring. **Breeding:** Dec–Apr.

[Sp 40]



ANTARCTIC PETREL

ANTARCTIC FULMAR

CAPE PIGEON

Snares

Southern

BLUE PETREL

SNOW PETREL

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

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 ravaged 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 it 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

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

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.

40. ANTARCTIC FULMAR *Fulmarus glacialisoides*

Plate 11

Other name: Silver-grey Fulmar

Size: 50 cm, 800 g

Distribution: Circumpolar, breeding on ice-free areas of Antarctica and on small islands around the coast, including the Balleny Islands in the Ross Dependency. They also breed on southern subantarctic islands of the Atlantic Ocean. Most remain close to the edge of the pack ice in summer, but they disperse through the southern oceans to about 35°S and further north in the Humboldt Current off South America.

Fewer than 10 Antarctic Fulmars were recorded from New Zealand beaches before

No estimate of the size of the Balleny Islands population is available.

Conservation: Protected native. The greater frequency in New Zealand waters since the mid-1970s may indicate population growth or a change in feeding patterns related to the decline in whaling, which used to provide good feeding opportunities.

Breeding: Antarctic Fulmars arrive at their ice-free colonies in early October. Laying is highly synchronous, in early December. They lay 1 white egg (76 x 51 mm, 103 g) in a shallow scrape or in a steep shingle scree, on a cliff ledge, or in a crevice. Eggs hatch in mid-January after c. 45 days and chicks fledge in early March at c. 52 days old.

1970, but they have since become much more regular winter–spring visitors to New Zealand waters. Over 2000 birds were beach-wrecked in the 25 years following 1970, including major wrecks in 1975 (639), 1978 (458) and 1985 (366). Most are beach-wrecked in September–November on the west coast of the North Island and in Southland. Because adults are starting to return to their Antarctic colonies in early October, most birds wrecked are presumably subadults.

Population: Common; colonies are scattered around the Antarctic coast and 1 million+ pairs breed on the South Sandwich Islands.

Behaviour: Breed in colonies. At sea, they are often seen alone, but when feeding they often join large mixed flocks at schools of krill or around whaling ships or fishing boats. When feeding in flocks, they are often noisy and aggressive, but otherwise they are usually silent at sea. At their colony, they give loud cackling calls, sometimes as a duet.

Feeding: Diet is mainly krill, squid and small fish picked from the sea surface.

Reading: Ainley, D.G. et al. 1984. *AOU Orn Monogr* 32: 1–97. Falla, R.A. 1937. *Rep BANZARE Ser B*. Mougou, J.-L. 1967. *Oiseau* 37: 57–103. Mougou, J.-L. 1967. *Com Natn Fr Rech Ant* 36: 1–195. Orton, M.N. 1968. *Emu* 67: 225–229. Powlesland, R.G. 1986. *Notornis* 33: 171–184.