

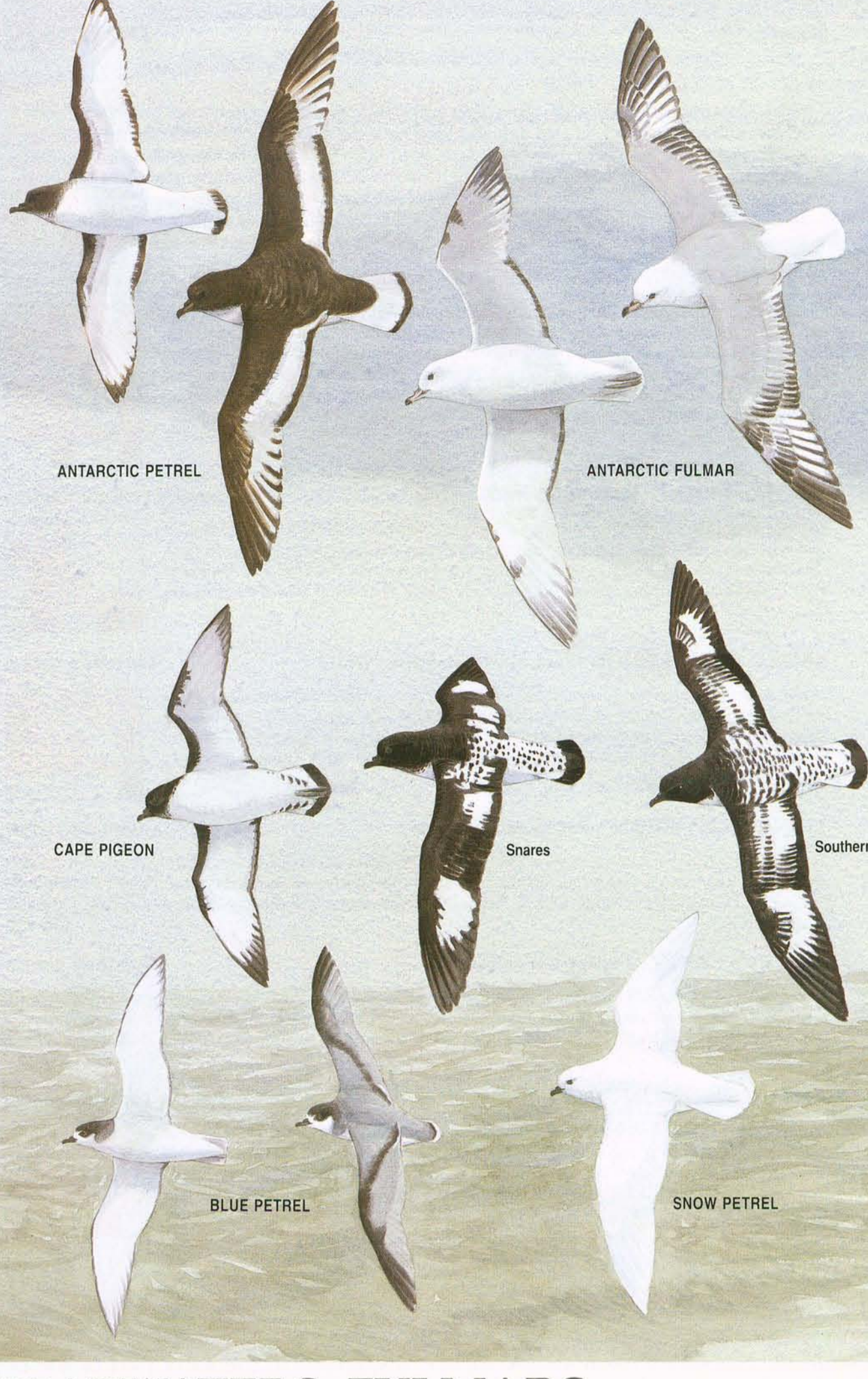
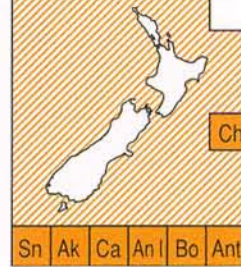
Plate 11 FULMARINE PETRELS and BLUE PETREL

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.

CAPE PIGEON *Daption capense*

40 cm, 450 g. Head, neck and mantle black; lower back, base of upperwing and rump white, heavily chequered with black; outer upperwing black with broad white patches near body and beyond bend of wing; white tail is flecked black and broadly tipped black; underparts white; underwings white with black leading edge and thin borders. Bill stout (30 x 15 mm), black; legs and feet black. Snares Cape Pigeon (*australe*) has less white on upperparts than Southern Cape Pigeon (*capense*). Often follows ships and gathers around fishing boats. **Habitat:** Breeds circumpolar subantarctic and coast of Antarctica; in NZ region, as far north as The Snares and Chathams. Ranges widely through southern oceans and common off NZ mainland, especially in winter. **Breeding:** Nov–Apr. [Sp 38]

Common native



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.

38. CAPE PIGEON *Daption capense*

Plate 11

Other name: Pintado Petrel

Size: 40 cm, 450 g

Geographical variation: Two subspecies: Southern Cape Pigeon *capense* breeds around the Antarctic continent and on many subantarctic islands in the Atlantic and Indian Oceans, whereas the smaller Snares Cape Pigeon *australe* breeds only on subantarctic islands of New Zealand.

Distribution: Circumpolar, breeding on ice-free areas of Antarctica and on small islands around the coast, and on many subantarctic islands. In the New Zealand region, *capense* breeds at the Balleny Islands and at Scott Island in the Antarctic, and *australe* breeds at The Snares, Bounty, Antipodes, Auckland (Beacon Rock) and Campbell Islands. Recently *australe* have extended their range to the Chatham (Forty Fours and probably The Pyramid).

In winter and early spring, many *capense* move north and east mingle with *australe* in temperate seas as far north as about 25°S in the southwestern Pacific. In winter and spring, Cape Pigeons often follow fishing boats around the mainland coast, but especially to the east of the South Island. They are mainly beach-wrecked in July–November.

Population: Abundant, with many colonies, but no data are available on the size of colonies of *capense* in the Ross Dependency. c. 8500 pairs, with 7500 pairs on The Snares, and <50 pairs at each of the Auckland, Campbell, Bounty and Chatham Islands.

Conservation: Protected. Cape Pigeons are opportunist feeders, deriving much food as offal from fishing boats, and so have probably benefited from fishing. In the 1960s, when whales were caught in Cook Strait, huge

flocks of Cape Pigeons congregated at the entrance to Tory Channel to feed on scraps from the whaling station there. Occasionally Cape Pigeons are accidentally killed on tuna long-lines and in nets, but band recoveries show that adult mortality is low and so such deaths are probably insignificant.

Breeding: The race *australe* at The Snares and the Bounty Islands breeds 2–3 weeks earlier than *capense* on the Antarctic coast. Some birds are at the colonies on The Snares all year, but eggs are laid only from 4–11–20 November. They lay 1 white egg (61 x 43 mm, 60g) in a slight scrape on a rocky ledge, in a crevice or cave, or under a rockfall. Eggs hatch in late December to early January after c. 45 days. The chick is brooded for the first 8–10 days, but left unguarded from 8–15 days old. Chicks fledge in mid-February at c. 52 days old. Young return to their natal colony from 16 months old, but do not start breeding until 3–6–10+ years old. The oldest bird recorded in New Zealand lived at least 28 years.

Behaviour: Breed in loose colonies and form large flocks at schools of krill and around fishing boats, and formerly around whaling stations and sewer outfalls. They are noisy and aggressive in feeding flocks. At their colonies, they make a range of churring calls.

Feeding: Diet is mainly krill, amphipods, squid, fish and offal, mainly taken on the surface with rapid pigeon-like pecking or by diving from just above the surface. Sometimes they catch crustaceans by filtering water through their bill or by picking them from the surface while still flying.

In the hand: The race *australe* is smaller than *capense*, but measurements overlap extensively.

Males are larger than females; most males of *australe* on The Snares have a head and bill of 77+ mm, and a tail-toe and claw of 60+ mm, whereas females are smaller.

Reading: Beck, J.R. 1969. *Br Ant Surv Bull* 21: 33–44. Harper, P.C. 1987. *Notornis* 34: 169–192.

Pinder, R. 1966. *Br Ant Surv Bull* 8: 19–47. Sagar, P.M. 1979. *Notornis* 26: 23–36. Sagar, P.M. 1986. *Notornis* 33: 259–263.