

The muttonbirds of Macquarie Harbour

One of the many fascinating birds of the Macquarie Harbour region is the short-tailed shearwater or 'muttonbird' (*Puffinus tenuirostris*). An ambitious and long term program of research has made the shearwater one of the most studied birds in Australia, and has revealed fascinating insights into their lives.

The short-tailed shearwater belongs to the family Procellariidae, a group comprising over 60 species which includes the petrels and prions. All members of the family have distinctive tube-like nostrils along their upper beak and are believed to be one of the few bird families with a sense of smell. Almost all breed in burrows and, like the albatrosses, are truly impressive oceanic fliers.

'Flying sheep'

The name muttonbird was first used by the early settlers on Norfolk Island, who har-

vested providence petrels (*Pterodroma solandri*) and wedge-tailed shearwaters (*Puffinus pacificus*) for food. The name was given by an officer in the Royal Marines, who called them 'flying sheep'. Unfortunately, the providence petrel became extinct on Norfolk Island due to over-harvesting and the introduction of pigs. The name muttonbird has been applied to the short-tailed shearwater ever since.

Harvesting

The muttonbird is one of the few Australian native birds that is commercially harvested. During the muttonbird season, chicks are taken for their feathers, flesh and oil. The industry was established by early European sealers and their Aboriginal families and today forms an important part of Aboriginal culture in Tasmania. The chicks are taken under strict controls and the season is limited to a two week period in April.

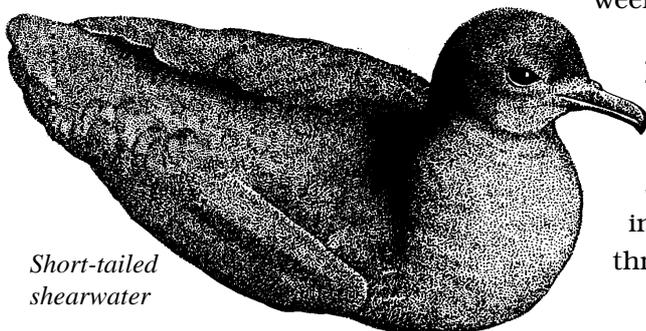
Distribution and migration

Short-tailed shearwaters breed in about 285 colonies throughout south-

eastern Australia. The largest concentrations occur on the Bass Strait islands, with an estimated three million burrows on Babel Island alone.

With an estimated total population of 23 million, the shearwater is one of the most abundant seabirds in Australia. Early accounts suggest that the population was once considerably higher. In 1798, Matthew Flinders estimated that there were at least one hundred million birds within a single flock sighted in Bass Strait.

The short-tailed shearwater undertakes one of the most spectacular migrations of the animal world. Their migratory path takes them northward along the western margin of the Pacific to the Aleutian Islands near the Bering Strait — a distance of over 15 000 km. Shearwaters have been known to fly this remarkable distance in six weeks. The return route is along a broad path across the central Pacific. Mortality among young birds on their first migration is very high, and it is common to see shearwaters washed up along



Short-tailed shearwater

beaches on the eastern seaboard of Australia during the spring and along the Japanese coast in May.

The adults depart during the first two weeks of April. Two to three weeks later, the young, which have by now lost up to half their body weight and replaced their downy feathers for flight feathers, are ready to undertake the migration as a separate group. Clearly, they must possess an innate capacity to navigate over such vast distances.

Breeding

Breeding occurs between September and April. On arriving back at their colonies during the last week of September, the birds meet with their mates and refurbish their old burrows, or excavate new ones. Their burrows are about one metre long. Each bird generally remains with the same partner throughout their life, and occupy the same burrow each year.

The synchronicity of breeding is one of the most remarkable aspects of the short-tailed shearwater. In the first few days of November, the birds disappear from the colony to spend three weeks feeding at sea. During this time the females are developing their eggs. A single white egg is laid a few days after their return to the colony in late November, with a distinct peak at 27-28 November. The male takes the first incubation shift, which lasts for two weeks, followed by the female

which takes the second shift for a further two weeks. Each parent completes one more shift before the egg hatches. During each shift, the "duty" bird does not leave the burrow, nor is it fed by its mate.

The young hatch after 53 days in the third week of January. Both parents participate in feeding the chick, which quickly puts on weight, reaching nearly twice the weight of its parents. In early April, the chicks, still clad in downy feathers, leave their burrows at night. They congregate in open areas to exercise their wings in preparation for their upcoming epic migration. The young will not breed until their fifth year.

Feeding

Shearwaters feed predominantly on krill, but also take squid and fish. Their hooked beak allows them to hold onto their prey, while their webbed feet allow them to pursue prey underwater. Shearwaters feed mainly from the surface, although they occasionally plunge dive. It is possible that krill abundance determines the migration of the species, allowing them to exploit the high concentrations of krill which occur each summer at both polar regions.

Threats

Shearwater colonies are very sensitive to disturbance. Walking across their colony can easily destroy their burrows. Similarly, erosion caused by recreational vehicles can destroy suitable sites

for burrowing, as can fire. Predation by introduced pests such as feral cats can have a similarly devastating impact. Gillnet fisheries in the North Pacific accidentally drown several thousand birds each year, while a further 250 000 are harvested by commercial operators.

Seeing them at Macquarie Harbour

Although a number of colonies occur along Ocean Beach, a viewing platform near the carpark gives visitors the best opportunity to observe the birds returning to the rookery after their daily fishing excursions. This spectacular sight can best be seen each dusk from early October to late February.

On greeting their mate and offspring within their burrows, the colony becomes alive with their raucous calls. The birds call again just before dawn as they make their way to their favoured take off positions. Please stay on the boardwalk as walking on the rookery can easily destroy the burrows in which the birds nest.

Further reading

Lindsey, T. R. (1986). *The Seabirds of Australia*. Angus and Robertson.

Marchant, S. and Higgins, P. J. (1990). *Handbook of Australian, New Zealand and Antarctic Birds. Vol. 1*. Oxford University Press, Melbourne.

