

Danger Mouse

By Geoff Barrett, Russell Palmer and Erin Clitheroe

Perth's Islands offer a safe haven for roosting and nesting seabirds, away from human activity, domestic dogs and cats, as well as foxes and other pest animals. A control program for black rats was implemented on Penguin Island with the last animals removed by DBCA in 2013. Foxes are also not keen to swim from the mainland to the island.

Despite ongoing vigilance, seabird numbers and breeding success varies from year to year, and the department is dependent on dedicated volunteers to monitor populations. In 1980, Carnac Island, located north of Garden Island, was home to thousands of breeding pairs of Silver Gulls and various tern species, as well as burrowing Wedge-tailed Shearwaters (*Ardenna pacifica*) and Little Penguins (*Eudyptula minor*). Recent surveys by ornithologists however, indicated that Little Penguins have disappeared from the Carnac Island Natural Reserve all together, whilst the Wedge-tailed Shearwaters are now restricted to a flat, rocky outcrop called Flat Rock, located to the south of Carnac. In addition, the once thriving Silver Gull population has undergone a concerning decline of by more than 80%. Extensive camera trapping in 2023 failed to detect obvious predators such as Black Rats, leading to speculation that perhaps the humble House Mouse may be the culprit. But how could this be, mice are more often prey than predator?

Midway Atoll

The four Japanese aircraft carriers sitting on the ocean floor off Midway Atoll, serve as a terrible reminder that prey can become predator. This tiny speck of land in the vast Pacific Ocean, midway between North American and Asia, was a naval service centre but also of immense strategic importance to seabirds. Rats were eradicated from Midway Atoll, also known as Kuaihelani, in 1996 but the House mice (*Mus musculus*) remained, thought to be small and harmless. However, by 2015 biologists were surprised to learn that mice had begun to kill mōlī, also known as the Laysan Albatross (*Phoebastria immutabilis*) – [eating the large, docile fledglings alive in their nests](#).

The switch from herbivore/insectivore to carnivore is understood to have occurred during prolonged dry spells, when the vegetation on Midway Atoll died back, leaving the mice with seabird carcasses, as their primary food source. DNA sequencing of mouse droppings (between 2018 and 2019) indicated that 12% of their diet consisted of flesh from the Laysan albatross.

Returning to Carnac Island, where speculation as to the causes of the decline in Silver Gulls, Wedge-tailed Shearwaters and Little Penguins, has begun to consider the House Mouse as



Mice detected on cameras at Carnac Island. Photo - Russel Palmer.

a possible cause. A field study is planned, to determine whether the mice there have become larger and more aggressive, and most importantly, to conduct stable isotope analysis to see whether their diet includes seabirds. If so, eradication of house mice from Carnac Island other islands in the Shoalwater Islands Marine Park will play an important role in the conservation and management of Perth's seabirds and their island habitats.