

SHORT NOTE

The recolonisation of Mangere Island by New Zealand white-faced storm petrels (*Pelagodroma marina maoriana*)

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Mangere Island (113 ha; 44°16'S, 176°18'W) is a highly modified, but internationally important Nature Reserve which lies 2 km west of Pitt Island, Chatham Islands. Before 1871, Mangere Island was nearly covered with low forest and stunted rigid scrub. It was the last refuge for several now-extinct Chatham Island endemic bird species, such as the Chatham Island fernbird *Bowdleria rufescens* and Chatham Island rail *Cabalus modestus* (Travers & Travers 1872). However, by 1892 the island was being farmed, with sheep and rabbits both introduced some time before then (Forbes 1893). Cattle and goats were also present at times (Butler & Merton 1992; Tennyson & Millener 1994). By the 1930s, Mangere had been cleared of "most of the arboreal vegetation" (Fleming 1939: 405-6). In 1966 when the island was purchased by the Crown and the stock removed, only a tiny (5 ha) bush fragment (the 'Robin Bush') remained at the northeast corner (Butler & Merton 1992). Following the gazetting of Mangere as a Nature Reserve, a re-vegetation programme was begun, beginning with plantings of New Zealand flax (*Phormium tenax*) and Chatham Island akeake (*Olearia traversii*) (Butler & Merton 1992).

During the period of severe modification Mangere's avifauna suffered drastically. Up to 22 bird species became extinct on the island, primarily as a result of predation by cats (Tennyson & Millener 1994). For the fernbird and rail it resulted in their global extinction. Cats were introduced to Mangere before 1892 to control the previously-released rabbits (Forbes 1893). One explanation about the origin of Mangere's rabbits is that they were originally destined for Pitt Island, but Fredrick Hutt (the major landowner) refused their release, suggesting that they be put on Rabbit

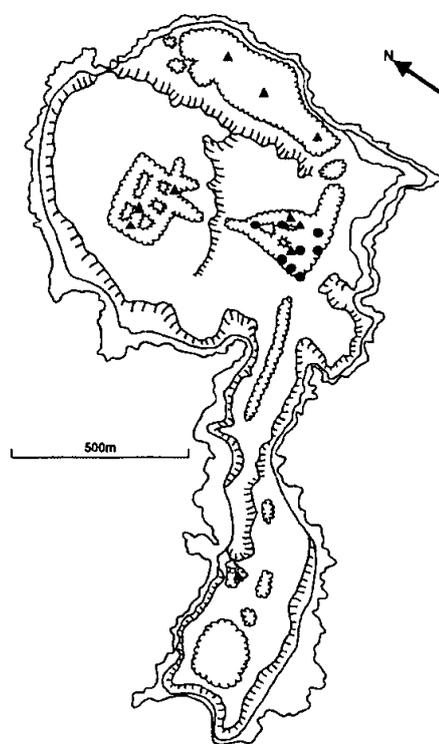


Fig. 1 Sightings of New Zealand white-faced storm petrels (*Pelagodroma marina maoriana*) on Mangere Island, Chatham Islands. Filled triangle, bird seen; filled circle, burrow; open square, hut.

Island instead. Later they were shifted to Mangere as there was no water on Rabbit Island (Ken & Eva Lanauze, pers. comm.). The cats eradicated the rabbits and then significantly affected the island's birds (Butler & Merton 1992). The cats died out during the 1950s as a result of intermittent hunting by visiting shearers (P. Neilsen pers. comm. via I.A.E. Atkinson)

Historically there are no confirmed breeding records of New Zealand white-faced storm petrels (*Pelagodroma marina maoriana*) from Mangere Island. Sub-fossil bones are, however, present (Tennyson & Millener 1994) and Fleming (1939)

believed that they formerly bred on the island. Travers & Travers (1872: 221) found white-faced storm petrels "common all round the islands" but did not state which islands in particular. Travers spent time on Mangere collecting birds during the breeding season, so it is possible that this island influenced his account of the species.

During 1923, mutilated remains of cat-killed birds were found on the island (Archev & Lindsay 1924). It is likely that by this time any breeding population would have been much reduced and be under severe predation from cats. By 1937 white-faced storm petrel were no longer found on Mangere (Fleming 1939). As there is little doubt that white-faced storm petrels were previously breeding on Mangere Island, it is probable that cats had exterminated them by 1937, if not earlier.

During brief trips to Mangere Island in the 1996/97 and 1997/98 breeding seasons, over 2 nights in Jan 1997 and 5 nights in Nov/Dec 1997, 4 h night⁻¹ were spent searching for birds and during the Nov/Dec 1997 trip c. 10 h were spent checking burrows for occupants in an attempt to establish the status of seabirds on the island. In this period 8 white-faced storm petrel burrows were located. These contained (depending on the timing of the visit) incubating adults or young in different stages of development. In addition 10 birds, which appeared not to be associated with burrows, were seen ashore at night.

Sightings of storm petrels were widespread across the island: in the "Robin Bush", Douglas Basin plantings, Top Plateau, and on Hut Peninsula. All of the breeding burrows were found in the Douglas Basin plantings (Fig. 1).

All birds and burrows were found under mature or secondary (planted) forest. None was seen in the large areas of open grassland. Even on the Top Plateau, birds were found along the rows of akeake plantings. The area of plantings on Mangere appears to be important for seabird restoration, as the trees suppress grass growth and allow burrowing seabirds access to the soil surface. The grasslands on Mangere are now so rank that the dense sward prevents some smaller seabirds from burrowing.

White-faced storm petrels are, therefore, selectively colonising the areas of plantings. It was noted also that black-winged petrels (*Pterodroma nigripennis*) are now breeding within the regenerating forest of the Douglas Basin. Previously, the species had been found nesting only to the west of the Douglas Basin forest (Tennyson 1991).

Despite the earlier circumstantial reports, these are the first confirmed breeding records of white-faced storm petrels on Mangere Island. Merton & Bell (1975) suggested that white-faced storm petrels had reappeared there in 1970.

However in 1987/88, Tennyson found that white-faced storm petrels had not recolonised, although birds were caught ashore on misty nights when attracted by lights (Tennyson & Millener 1994). The low number of burrows found suggests that white-faced storm petrels are in the early stages of recolonisation.

Elsewhere in the Chatham Islands, white-faced storm petrels breed on South East, Middle Sister, Star Keys, Murumuru, Kokope, Rabbit (Imber 1994), and Little Mangere (Fleming 1939) Islands. On South East Island white-faced storm petrels are abundant, with an estimated 840,000 breeding pairs in the forest alone (West & Nilsson 1994). The numbers and distribution of this species in the Chatham Islands group provides the opportunity for Mangere Island to be naturally recolonised. This recolonisation is an important step in the restoration of the island's ravaged avifauna.

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