

SHORT NOTE

Breeding and movement of a banded fairy tern
(*Sternula nereis exsul*) in New Caledonia

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There are currently three subspecies of fairy tern (*Sternula nereis*) recognised; *S.n. nereis* in Australia, *S. n. exsul* in New Caledonia, and *S. n. davisae* in New Zealand (Harrison *et al.* 2021). In New Caledonia, fairy terns nest on islets close to the west coast of Grande-Terre, off both the northern and southern regions of the island (Barré *et al.* 2012).

In the northern lagoon, on Magone Islet (Fig. 1), in 2018, the first clutches were laid in mid-May and the last clutches still incubating in late August but the colony was deserted in early September (PV *pers. obs.*). In the southern lagoon, on the islet Amédée (Fig. 1), in 2019–2021, breeding took place from April to the end of September, and the first clutches were found in early May and the last ones in late August to mid-September, with clutches in 3–4 periods (PB *pers. obs.*). On both islets, the last clutches were all abandoned, even one that still had a growing embryo in the shell.

Over 68 days during 29 June to 5 September 2018, we monitored the breeding behaviour of a small fairy tern colony (40 nests) on Magone Islet (Villard *et al.* 2020). On 1 July 2018, a previously banded female fairy tern was observed incubating two eggs. After four days of observation, one of the eggs hatched (Fig. 2a). Nine days later, the chick was preyed on by a whistling kite (*Haliastur sphenurus*), which removed it; the unhatched egg, which had been incubated up until this time (Fig. 2b), was found to have disappeared. On the same day and the next, the nesting pair returned to the nest site several times with fish, presumably to feed the now absent chick. The pair then disappeared, returning to the colony nine days later. The banded female mated with its partner (Fig. 2c) and the pair attempted to re-nest, i.e. a territory was established and three nest scrapes made (Fig. 2d), but a replacement clutch was never laid. Forty-three days later, the banded female left the deserted colony site. She had begun to moult into post-nuptial plumage, indicated by increased blackening at the

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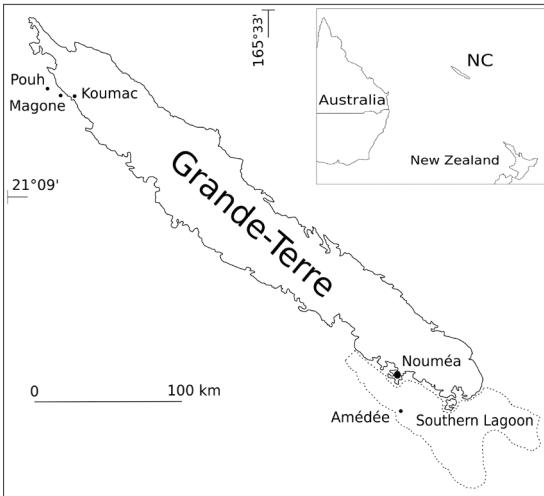


Figure 1. Grande-Terre, New Caledonia, with the islets of Pouh (24 September 2013), Magone (29 June to 5 September 2018) and Amédée (May 2019 to September 2021), where observations of fairy terns were made.

tip and base of the yellow bill, and mottling of the black head cap (Fig. 2e, see Dunlop 2018; Greenwell *et al.* 2021).

After departing Magone Islet at the end of the present study period, the female was observed again c. 16 months later on 11 January 2020 in eclipse plumage (Fig. 2f). She was sighted 317 km southeast of Magone Islet on Amédée Islet. She was originally banded five years earlier (24 September 2013, SCO) on Pouh Islet, 10.5 km from Magone Islet (Fig. 1).

On Amédée Islet, outside of the breeding season, colonies of *S. n. exsul* are known to exceed 100 individuals (about 95% adult and 5% immature). Counts of 111 and 124 fairy terns were recorded on 30 January 2010 and 23 January 2011, respectively (*unpubl. data*). Outside the breeding season, the southern lagoon hosts a relatively large proportion of the New Caledonian fairy tern population, with a total of 255 and 233 individuals recorded in January 2010 and 2011, respectively (*unpubl. data*).

These counts suggest that the southern lagoon may be an important post-breeding area for the species, including for those birds breeding on the northwestern islets like Magone Islet (*unpubl. data*). On the Australian west coast, mark-recapture records of *S. n. nereis* show that one population is semi-migratory, with one individual moving as far as 1,100 km between breeding and wintering grounds (Dunlop & Greenwell 2020). At the end of the breeding season large numbers have been observed aggregating on Rottneest Island on the Peel Harvey estuary, lower west coast. Also, in



Figure 2. Observations of the banded female (yellow-aluminium on the left leg and green-yellow on the right leg, with the yellow band sometimes slipping over the aluminium band) on Magone Islet (Fig. 2a–e) and Amédée Islet (Fig. 2f). (a) The male incubating the chick and the female with a fish to feed the chick (hatched 6 July 2018). (b) The female incubating the second egg when the chick is 7 days old (11 July 2018). (c) The male with a food offering for the female just before mating, 12 days after the chick was preyed upon (26 July 2018). (d) The pair in a nest scrape 13 days after the predation of the chick (27 July 2018). (e) The female before leaving the nesting colony. She is beginning to lose her breeding plumage as the base of the upper mandible is starting to turn from yellow to black (4 September 2018). (f) The female in eclipse plumage on Amédée Islet (11 January 2020). Images: (a–e) ©PV, (f) ©PB.

New Zealand North Island there is seasonal movement from the east coast nesting grounds to the west coast (Parrish & Pulham 1995).

Our observation of a banded adult female provides the first record of such movements by *S. n. exsul* between islets in the north and south of the lagoon, around Grande-Terre. Further observations of banded individuals are needed to determine the extent in which New Caledonian fairy terns travel between these islets outside the breeding season.

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