

Recoveries of Silver-grey Petrels Banded on Ardery Island, Windmill Islands, Antarctica

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One hundred and sixty-one adults and 65 chicks of the Silver-grey Petrel *Fulmaris glacialoides* were banded in marked nests on Ardery Island from 1960 to 1963. In January 1972, 40 of these petrels were recaptured; one pair considered to be mates in 1963-64 was recaptured on a nest with an egg, and one, banded as a chick in 1960, was a breeding adult on a nest with an egg near to its birthplace.

Introduction

Sheer cliffs of the barrier ice form the typical shore of Antarctica but in contrast there are small regions where rock is exposed for much of the year. The Windmill Island (66° 20' S., 110° 30' E.) are such a region, and the variety of their topography provides nesting sites for most of the truly Antarctic birds (Orton, 1963). Extensive colonies of the Silver-grey Petrel or Antarctic Fulmar are present particularly on Ardery, Holl, and Odbert Islands.

An American station was established at Wilkes on the Clark Peninsula in 1957, the administration of which was undertaken by the Australian National Antarctic Research Expeditions in 1959. Subsequently it was closed and replaced by the new Casey Station on the nearby Bailey Peninsula.

Ornithological studies were prominent in the biological programmes of the early American and Australian expeditions, and many Silver-grey Petrels were banded on Ardery Island which is now a fauna reserve classified as a "Specially Protected Area". In 1960-61, 37 chicks and 61 adults were banded by R. L. Penney (USARP) and in 1961-62, 28 chicks and 92 adults by M. N. Orton (ANARE). Orton also placed differently coloured plastic bands on some males and females. As part of the biological programmes from 1962 to 1964 under the supervision of

M. D. Murray, Ardery Island was revisited. In addition to re-marking the nest sites, banded adults of unknown age were given an additional band on the other leg, and where possible their mates were captured and also banded with two bands. This was to enable adults of unknown age to be differentiated quickly from birds banded as chicks. Forty-five were given an additional band by the late Z. Soucek in 1962, and 29 new birds were double-banded, 23 were recaptured and additionally banded, and 29 previously double-banded birds were recaptured by K. Hicks in 1963-64. The removal of boats from the Station in 1964 limited all future visits to periods when the sea ice was solid, and to the change-over period. In January 1972, the opportunity arose to revisit Ardery Island twice (M.D.M.). Each of the banding and surrounding areas in West Gully, Penney Ravine, Soucek Ravine, and on Mast Head (Fig. 1) were thoroughly searched once. Although the numbers painted on the rocks near the nests had weathered and were not visible, the areas were easily re-identified from photographs and 40 banded birds were recaptured.

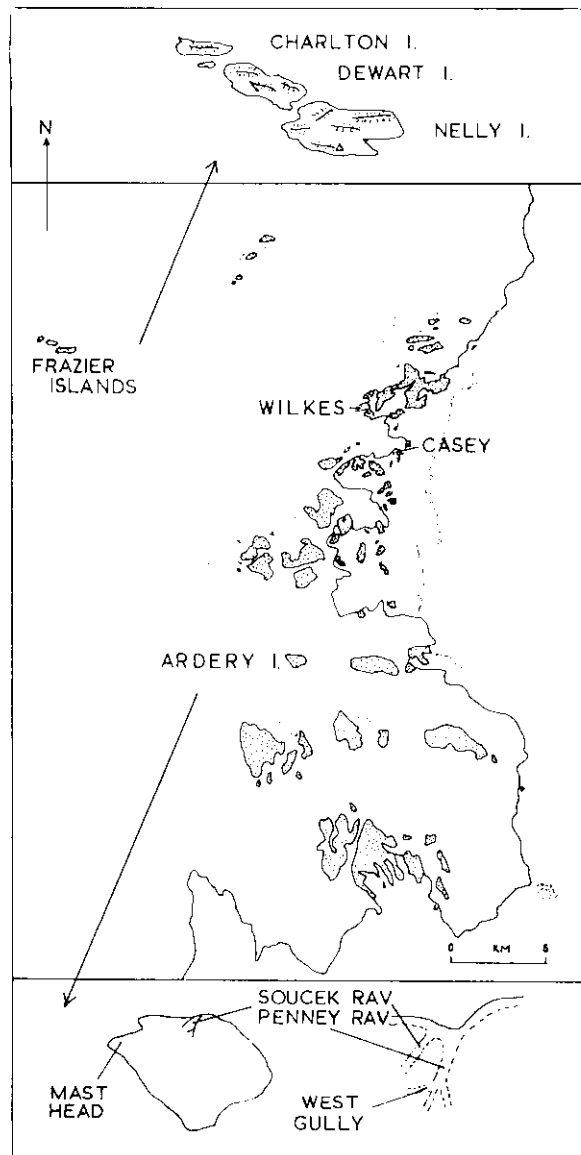
Results

In 1961-62, 44 Silver-grey Petrels were recaptured on marked nests and 36 were definitely on the same nest as where previously banded.

Of 44 birds recaptured in 1962-63, 37 were on the same nests and the remainder were nearby. Of 54 banded birds recaptured in 1963-64, 47 were definitely at their original nests and 5 had changed nests, the exact site of the remaining two could not be determined. Seven pairs were considered to be mates in 1962-63; in the following year six were found together on the on the same nest with an egg but none of the birds of the remaining pair was recaptured. The next recoveries were made in a brief visit by J. C. Elliot in October 1966 when four birds were recovered at Mast Head. One was apparently mating with a different partner at a different nest, and the nests of the other two petrels could not be identified. These birds had been banded in the immediate vicinity.

In January 1972, 17 of 82 adults banded from 1960 to 61 in West Gully, Penney Ravine, and Soucek Ravine, were recaptured, and 19 of 71 banded at Mast Head from 1961 to 1963. Although some had obviously changed their nests, most were recaptured within a few feet of where they were originally banded. A pair (160-26371/160-26372 and 160-20505/160-26349) judged as mates when double banded on 21 December 1963 at Mast Head was recaptured on a nest with egg on 19 January 1972. Another pair, which was recaptured on a nest with chick on 23 January 1972, had been banded in neighbouring nests. One of the birds (SM565-75292) was banded on 8 December 1960 by Penney and the other (160-20434) was banded on 2 February 1961 by Orton. The pair was recaptured in the same part of West Gully as where the original nests were located. One chick, 565-75201, banded by Penney in Soucek Ravine on 15 February 1960 was recaptured as a breeding adult on a nest with an egg in West Gully.

Retrapping Silver-grey Petrels on which different types of bands had been placed on each leg enabled the suitability of these bands to be compared. The U.S. Fisheries and Wildlife Service band of the series "SM565" is a overlapping monel band with the initial and final curvatures preshaped, whereas the Australian Bird-banding Scheme "160" series is a monel strip which has to be shaped either before or as it is placed around the leg. Both bands showed little wear after 9-12 years. The final bend of some of the CSIRO bands had opened slightly and one was



● Figure 1. The Windmill Islands off Casey. The lower insert shows the location of banding areas for the Silver-grey Petrels on Ardery Island and the upper insert the banding areas for Giant Petrels on the Frazier Islands. The dotted areas are ice-free.

lost, only the F. & W. band being present. The numbers on the F. & W. band were easier to read. Nine of the recaptured fulmars had previously been banded with a flat-spiral plastic band, unsealed with acetone when originally placed on the leg. These blue or green bands were still present on eight birds in 1972.

Discussion

The lack of wear of the bands and survival of simple plastic bands indicate that band-wear is not a problem with Silver-grey Petrels. The F. & W. band is preferable to the 160- monel series, as they may be applied more speedily and the number is easier to read. However it would appear that a simple butt-end band such as it used by French expeditions at Dumont D'Urville (R. Groscolas—pers. comm.) is adequate. Such a band would enable speedy mass-banding of chicks, and thus ensure the location of some when they commence to breed. It is highly probable that a similar band could be used successfully with the Antarctic Petrel *Thalassoica antarctica* and the Cape Petrel *Daption capense* in the Windmill Islands.

The recoveries of 1972 show that the Silver-grey Petrel is a long-lived bird; one had been banded as a chick 12 years previously and was recaptured as a breeding adult on egg, and the other 39 were banded as breeding adults of unknown age 10-12 years previously. Only one search of each area was possible and most of the mates were absent from the nest. The number of banded birds still alive is, therefore, probably higher than the recoveries indicate. It would appear that their attachment to mate and nest site is usually permanent. The latter however may not be available each year as nest sites can become covered with solid ice which the birds cannot excavate with their bills. The cover photograph of *The Australian Bird Bander* Vol. 3, No. 1 (March 1965) shows an excavated burrow to a nest on which a Silver-grey Petrel is sitting. The Silver-grey Petrel presents yet another example of low mortality amongst the birds which are breeding successfully in a population. Thus any intensive population study of this species should be planned to ensure continuity for at least ten years, and consequently, the



• *Silver-grey Petrel on nest on Ardery Island.*

ANARE photograph by M. D. Murray

selection of the study area and a guarantee of the necessary logistic support are of paramount importance.

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