

## Southern Buller's albatross – Snares Islands, POP2019-04.

### Proposed Methodology, Fieldwork March 2020.

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#### Introduction

This summary document presents the proposed fieldwork methodologies for forthcoming southern Buller's fieldwork at the Snares Islands. This year's fieldwork will be a mixture of completing last year's whole-island census work (that was curtailed by poor weather), as priority, and the annual checks of birds breeding in the three study areas.

#### Proposed methodologies

##### *Logistics/Transport to The Snares*

It is proposed to travel to, and return from, the Snares using the Awesome. Departure from Bluff is scheduled for 10 March with a return date of 18 or 19 March. The field team will comprise David Thompson (field leader, NIWA), Paul Sagar (NIWA), and David Sagar (DOC), being the same team that carried out fieldwork in 2019.

##### *Study site*

The Snares (48° 02' S, 166° 36' E) comprise North East Island (280 ha) and Broughton Island (90 ha), plus numerous islets and stacks (Figure 1). In 2020, all fieldwork will be carried out on North East Island.

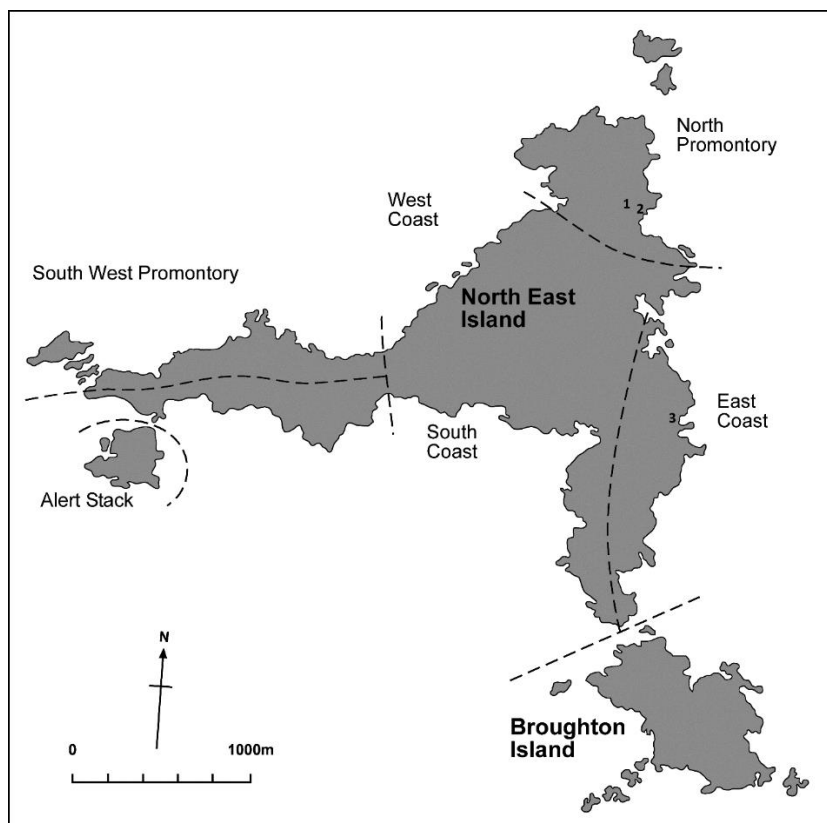


Figure 1: The Snares, showing the boundaries of areas where counts of occupied nests of southern Buller's albatrosses are made for whole-island counts. Locations of study colonies are: 1, Upper Punui Bay; 2, Lower Punui Bay; 3, Mollymawk Bay.

#### *Whole-island counts*

The laying period of southern Buller's albatrosses at The Snares extends from late December to the end of February, with most eggs laid by late January. Therefore, the timing of whole-island counts is scheduled to occur close to the end of laying, when most birds sitting on a nest are presumed to be incubating. Southern Buller's albatrosses are monogamous, usually nest annually, and do not re-lay within a season if the single egg laid is broken. Therefore, counts of incubating birds and counts of abandoned and broken eggs are presumed to represent the number of pairs of birds breeding that year.

In 2019, South West Promontory, South Coast and Alert Stack (Figure 1) were not counted due to poor weather. It is proposed to count these areas in 2020, to complete the whole-island count. When counting incubating birds, we will follow the procedure used in 1992, 1997, 2002, and 2014, which was similar to that used in 1969 (Warham & Bennington 1983; Sagar et al. 1994, 1999; Sagar & Stahl 2005). Two types of counts will be employed: ground counts and vantage-point counts.

##### i. Ground counts

Ground counts will be completed wherever access to nests is possible. In such situations usually one person will use a tally counter to keep a running total of nests counted, with the other members of the field team calling out nests as they are checked. Birds incubating an intact egg (assumed to be all birds sitting tightly on a nest mound) will be counted. In addition, abandoned eggs, broken eggs, and eggs which have rolled out of a nest will be assumed to represent pairs of albatrosses that had attempted to breed in 2020, and hence will be included in the count.

##### ii. Vantage-point counts

Birds breeding in inaccessible areas will be counted using binoculars from vantage points, at distances up to 500 m. Where counts are made from vantage points, counts will be carried out independently by all three observers and averaged. Where vantage-point counts consist of over 100 occupied nests, the total count from each observer will be included if it is within 10% of the average made by all three observers. Where the average vantage-point count is under 100, the totals must be within 5%. For both ground and vantage-point counts birds standing on nest mounds will not be included in the total counts because the nests are assumed to be empty. Abandoned and broken eggs are generally not possible to count from vantage-points, and therefore vantage-point counts will represent the minimum number of breeding pairs.

#### *Study colonies*

Each of the three study colonies (Mollymawk Bay, Lower Punui Bay, and Upper Punui Bay) on North East Island (Figure 1) will be visited 2–3 times or as other work and weather permit. On the first visit to each colony, all nests will be inspected, and the contents recorded. Band numbers of all adult birds associated with these nests will be recorded and any unbanded birds incubating will be captured and fitted with a uniquely numbered stainless steel leg band. All adult birds recorded on this first visit will be marked with blue raddle (a temporary stock marker) so that they are not recaptured on the subsequent visit(s). On the second visit to each colony, all nests will be checked again, and any birds not marked with raddle will be captured and either band numbers recorded, or leg bands applied, as appropriate. In addition, on each visit an attempt will be made to recapture as many banded non-breeding birds as possible that were loafing in the colonies.

### *Emigration*

When completing ground counts of breeding albatrosses outside the study colonies, traversing to and from the study colonies and opportunistically at other times and locations, as many birds as possible will be checked for leg bands. This information will inform the dispersal rate of birds banded in the study colonies.

### *Trail camera deployment*

Details to be confirmed with the Department of Conservation.

## **References**

- Sagar, P.M.; Molloy, J.; Tennyson, A.J.D.; Butler, D. (1994). Numbers of Buller's mollymawks breeding at the Snares Islands. *Notornis* 41: 85–92.
- Sagar, P.M.; Stahl, J.C. (2005). Increases in the numbers of breeding pairs in two populations of Buller's albatross (*Thalassarche bulleri bulleri*). *Emu* 105: 49–55.
- Sagar, P.M.; Stahl, J.C.; Molloy, J.; Taylor, G.A.; Tennyson, A.J.D. (1999). Population size and trends within the two populations of southern Buller's albatross *Diomedea bulleri bulleri*. *Biological Conservation* 89: 11–19.
- Warham, J.; Bennington, S.L. (1983). A census of Buller's albatross *Diomedea bulleri* at the Snares Islands. *Emu* 83: 112–114.