



Lineage – Scientific methodology

Breeding distribution of light-mantled sooty albatross

1. A “breeding colony” for New Zealand seabirds is defined as “any location where breeding has been reported and is considered by the expert compiling the species account to have occurred at that location at least until 1998”.
2. An “occasional breeding colony” for New Zealand seabirds is defined as “any location where breeding has been reported, but not necessarily continuously nor during consecutive breeding seasons, and is considered by the expert compiling the species account to have occurred at that location during the last 30 years”.
3. Literature sources were searched for breeding distribution information.
 - a. Scientific papers, published texts, unpublished reports and university theses available to the expert who prepared the distributional layers.
 - b. Aquatic Sciences and Fisheries Abstracts 1960-2007.
 - c. *OSNZ News* and *Southern Bird* for 1977–2007.
4. Other sources.
 - a. Nil.
5. Summary
 - a. An expert scientist integrated information from the literature and expert opinion, and produced hand-drawn distributional zones on a template map. These maps were then digitised and imported into a GIS software package as layers. The areas of the zones were calculated, and the layers were linked to attribute and metadata files.
 - b. The primary sources of breeding distribution data for light-mantled sooty albatross were papers published in refereed journals.
 - c. The light-mantled sooty albatross has a circumpolar breeding distribution, nesting at the Macquarie Island, and the Auckland, Campbell, and Antipodes Islands in the New Zealand region (Marchant & Higgins 1990, Taylor 2000). Elsewhere, it breeds at Heard, Kerguelen, Crozet, Prince Edward, Marion, and South Georgia Islands (Tickell 2000). On Macquarie Island, nests are scattered along steep hills and coastal cliffs around the whole of the

coastline (Kerry & Garland 1984). At the Auckland Islands, they breed along the cliffs of the west coast of the main Auckland Island, the north cliffs of Enderby Island (P. Moore pers. com.), and the south coast of Adams Island. Elsewhere, occasional nests have been found on the north side of Carnley Harbour, Waterfall Inlet, and at the head of Smith Harbour (Tickell 2000). They nest on steep sea cliffs all around Campbell Island and the offshore islets of Jacquemart, Monowai, Wasp, Hook Keys, Dent, Jeanette Marie, and two unnamed islands; a few also breed inland on Campbell Island (Westerskov 1960, Moore 1996, Tickell 2000). At the Antipodes Islands, they breed on coastal cliffs around the Antipodes, Archway, Leeward and Bollons Islands (Warham & Bell 1979; Tennyson *et al.* 2002).

- d. Light-mantled sooty albatrosses usually nest either solitarily or in loose colonies on steep cliffs, and are susceptible to disturbance (Taylor 2000). Consequently, relatively few counts of nests have been completed, and even fewer studies of population parameters undertaken. In relation to population estimates of light-mantled sooty albatrosses, Tickell (2000) stated that "Counts are rarely explicit and without clear details of computations, 'estimates' are often so open-ended as to be little more than wild guesses." In the New Zealand region, light-mantled sooty albatrosses have been studied at Macquarie Island longer than anywhere else, but the entire coastline was not covered in a systematic survey until 1992-93, when 1000-1150 pairs were counted (Gales 1993, 1998). For the Auckland Islands, no details are given to support the estimate of 5000 pairs in 1972-73 (Bell 1975). In the early 1940s, Sorensen (1950) estimated that there were less than 1000 pairs breeding on Campbell Island. In 1995-96 a sample 19 km of coastline had 292 nests and, together with nests on inland hills and offshore islets, Moore (1996) estimated that, based on the density of nests determined in the 1995 survey and the length of coastline, that 1600 pairs bred each season. Tennyson *et al.* (2002) provide the only counts of breeding light-mantled sooty albatrosses at the Antipodes Islands, where 96 nests were counted on the main island and Bollons and Leeward Islands in 1995. However, taking into account many probable nest sites that could not be seen in inaccessible terrain the total population was estimated at 200-300 breeding pairs (Tennyson *et al.* 2002). There were three nests with eggs on Archway Island in December 1978 (Tennyson *et al.* 2002).

6. References

The following sources provided useful information on the breeding distribution of this species. This is not an exhaustive list of all references to the species.

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