



## Lineage – Scientific methodology

### Annual distribution of Gibson's albatross

1. Literature sources were searched for 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  - a. Scientific papers, published texts, unpublished reports and university theses available to the expert who prepared the distributional layers.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 for 1960-2007.
  - c. *OSNZ News* and *Southern Bird* for 1977–2007.
2. Other sources.
  - a. NZSAS (New Zealand Seabirds at Sea) database maintained by Natural Environment, Museum of New Zealand Te Papa Tongarewa, Wellington. Also, a database of daily seabird sightings off Kaikoura ([www.oceanwings.co.nz](http://www.oceanwings.co.nz)).
3. 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  - b. The primary sources of distribution data for Gibson's albatross were the NZSAS database, published texts and unpublished reports.
  - c. A distribution "hotspot" for New Zealand seabirds is defined as "an area of increased abundance of a species, as considered by the expert compiling the species account". Typical examples of hotspots include areas around breeding locations during the breeding season, regardless of the absolute size of the breeding colony, and areas that are consistently and repeatedly favoured as feeding locations.
  - d. Existing information on the at-sea distribution of this species is likely to include sightings of Antipodean albatross, as these two species are extremely difficult to separate unless under ideal viewing conditions.
  - e. Gibson's albatross is endemic to New Zealand, breeding only at the Auckland Islands group, on Auckland, Adams and Disappointment islands. A distribution hotspot is centred on this island group.
  - f.

- g. Based on satellite telemetry, known distribution hotspots include a broad area to the west of South Island in the central Tasman Sea between 40-45°S (Walker *et al.* 1995, Walker & Elliott 2002c, 2006). Based on the relatively large numbers of Gibson's albatross caught as commercial fishery bycatch during the mid to late 1990s, an additional hotspot is located to the east of East Cape (Bartle 2000, Robertson 2000), and satellite telemetry supports this for the summer months (Walker & Elliott 2006). Additionally, and also during the summer, Gibson's albatross tend to utilise a relatively large area offshore and extending the length of the east coast, South Island (Walker & Elliott 2006). From autumn through to spring inclusive, Gibson's albatross tend to frequent the central Tasman Sea area, and spend relatively little time to the east of New Zealand (Walker & Elliott 2006).
- h. The breeding season extends throughout the year and Gibson's albatross range widely throughout the New Zealand region, generally to the south of 30°S (Marchant & Higgins 1990). Birds are encountered in all months off Kaikoura ([www.oceanwings.co.nz](http://www.oceanwings.co.nz)). Band recoveries of birds outside New Zealand tend to be from the east and south coast of Australia (Robertson *et al.* 2003), and satellite telemetry revealed that non-breeding birds dispersed to off the eastern Australian coast (Nicholls *et al.* 2000).

#### 4. References

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

- Bartle, J.A. (2000). Autopsy report for seabirds killed and returned from New Zealand fisheries 1 October 1996 to 31 December 1997. Conservation advisory science notes 293. Department of Conservation, Wellington. 35p.
- Hamilton, S.; Kemp, J.; Elliott, G.; Walker, K.; Wiltshire, A. (2002). Monitoring Gibson's wandering albatross 1999/2000. DOC science internal series 71. Department of Conservation, Wellington. 22p.
- McQuaid, C.D.; Ricketts, L.H. (1984). Seabird records from the Transglobe Expedition, part 1: African and New Zealand sectors of the Southern Ocean, 1979-1981. *Cormorant* 12: 14-28.
- Marchant, S.; Higgins, P.J. (1990). Handbook of Australian, New Zealand and Antarctic birds. Volume 1, Part A. Oxford University Press, Melbourne. 735p.
- Nicholls, D.G.; Murray, M.D.; Butcher, E.C.; Moors, P.J. (2000). Time spent in Exclusive Economic Zones of southern oceans by non-breeding wandering albatrosses (*Diomedea* spp.): implications for national responsibilities for conservation. *Emu* 100: 318-323.

- Robertson, C.J.R. (2000). Autopsy report for seabirds killed and returned from New Zealand fisheries 1 January 1998 to 30 September 1998. Conservation advisory science notes 294. Department of Conservation, Wellington. 28p.
- Robertson, C.J.R.; Bell, E.A.; Sinclair, N.; Bell, B.D. (2003b). Distribution of seabirds from New Zealand that overlap with fisheries worldwide. Science for conservation 233. Department of Conservation, Wellington. 102p.
- Robertson, C.; Jenkins, J. (1981). Birds seen at sea in southern New Zealand waters, February-June 1981. *Australasian Seabird Group Newsletter* 16: 17-27.
- Taylor, G.A. (2000). Action plan for seabird conservation in New Zealand. Part A: threatened seabirds. Threatened species occasional publication No. 16, Department of Conservation, Wellington. 233p.
- Walker, K.; Elliott, G. (2002a). Monitoring Gibson's wandering albatross 1997/98. DOC science internal series 69. Department of Conservation, Wellington. 18p.
- Walker, K.; Elliott, G. (2002b). Monitoring Gibson's wandering albatross 1998/99. DOC science internal series 70. Department of Conservation, Wellington. 20p.
- Walker, K.; Elliott, G. (2002c). Monitoring Gibson's wandering albatross 2001/02. DOC science internal series 73. Department of Conservation, Wellington. 29p.
- Walker, K.; Elliott, G. (2002d). Monitoring Antipodean and Gibson's wandering albatross 1996/97. DOC science internal series 75. Department of Conservation, Wellington. 14p.
- Walker, K.; Elliott, G. (2006). At-sea distribution of Gibson's and Antipodean wandering albatrosses, and relationships with longline fisheries. *Notornis* 53: 265-290.
- Walker, K.; Elliott, G.; Nicholls, D.; Murray, D.; Dilks, P. (1995). Satellite tracking of wandering albatross (*Diomedea exulans*) from the Auckland Islands: preliminary results. *Notornis* 42: 127-137.
- Walker, K.; Hamilton, S.; Wiltshire, A.; Elliott, G. (2002). Monitoring Gibson's wandering albatross 2000/01. DOC science internal series 72. Department of Conservation, Wellington. 26p.