

The logo for NABIS (New Zealand Biodiversity Information System) features the word "NABIS" in a bold, blue, sans-serif font. To the right of the text is a stylized map of New Zealand, with a magnifying glass icon overlaid on it, symbolizing search and exploration.

To view this as a map and many more go to:

[www.nabis.govt.nz](http://www.nabis.govt.nz)  
web mapping tool

Type the map name into: *Search for a map layer or place*

## Lineage – Scientific methodology

### Annual distribution of Auckland Island shag lineage

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  - a. Scientific papers, published texts, unpublished reports and university theses available to the expert who prepared the distributional layers.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 1960-2009.
  - c. *OSNZ News* and *Southern Bird* for 1977–2009.
2. Other sources.
  - a. None.
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  - b. The primary sources of distribution data for Auckland Island shag were the NZSAS database, published texts and unpublished reports.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. The Auckland Island shag is endemic to New Zealand, with all breeding pairs restricted to the Auckland Islands. A distribution hotspot is centred on this region.
  - e. The Auckland Island shag is restricted throughout the year to harbours and coastal areas of the Auckland Islands (Marchant & Higgins 1990). One bird has been reported from elsewhere – a

juvenile, first reported at the Snares Islands in July 1994 was seen there on many occasions until it was last reported in July 2001.

#### 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.

Heather, B.D.; Robertson, H.A. (1996). *The field guide to the birds of New Zealand*. Viking, Auckland. 432p.

Lalas, C. (1983). Comparative feeding ecology of New Zealand marine shags (Phalacrocoracidae). Unpublished PhD thesis, University of Otago. 291p.

Marchant, S.; Higgins, P.J. (1990). *Handbook of Australian, New Zealand and Antarctic birds. Volume 1, Part B*. Oxford University Press, Melbourne. 665p.

Miskelly, C.M.; Sagar, P.M.; Tennyson, A.J.D.; Scofield, R.P. 2001. Birds of the Snares Islands. *Notornis* 48: 1-40.

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.