Threatened Species Assessment

Thalassarche bulleri
Buller's Albatross

Taxonomy

Thalassarche bulleri (Rothschild, 1893)

Current conservation status

Listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2002).

Proposed conservation status

Endangered in Victoria

Criterion D

For species that also occur outside of Victoria, the *Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0 (2012)* apply. This may lead to an adjustment of the threat category, to reflect the influence of adjacent populations.

The regional assessment (Victoria only) results in Critically Endangered. This assessment has been downgraded to Endangered EN^{o} to account for the influence of interstate and international populations that reduce the extinction risk in Victoria.

Species Information

Description and Life History

Buller's Albatross is a lightly built albatross that is 76-80 cm long and has a wingspan of 200-213 cm (Marchant and Higgins 1990). Males are slightly larger than females. The bill is long and slender, with striking black and yellow colouration: yellow on the top and bottom of the bill, and black on the sides. They have a light grey head, prominent white or silvery-white forecap and a dark area in front of the eyes (Marchant and Higgins 1990). The underparts are very pale grey, with a wide black margin on the leading edge of the wing, a narrow black margin on the trailing edge and white in-between (Pizzey and Knight 1999). Immature individuals are separated from the immature Grey-headed Albatross by the underwing pattern and lighter bill with a contrasting dark sub-terminal spot (Office Environment and Heritage NSW 2019).

The birds feed mostly on squid, supplemented by fish, krill and tunicates (Marchant and Higgins 1990). Like most albatross, Buller's Albatross form tight pair bonds and mate for life (Marchant and Higgins 1990). Arrival at breeding grounds occurs in mid-December with males generally arriving first. Breeding occurs between December-October (Marchant and Higgins 1990). This taxon breeds colonially, with groups of 2-12 (generally less than 20), irregularly scattered nests at densities of about 1 nest/m^2. Egg laying occurs over an eight week period, between January-February. Incubation lasts for 26 days and most young fledge by September (Marchant and Higgins 1990).

Generation Length

The generation length of Buller's Albatross is estimated to be 16.5 years. This follows Birdlife International (quoted by Garnett et al. 2011).

Distribution

Buller's Albatross is a New Zealand endemic that only nests on islands off New Zealand. The northern subspecies (*platei*) nests on islands off Chatham Island with an estimated population of around 18,200 breeding pairs. The southern subspecies (*bulleri*) breeds on the Snares and Solander islands with a total population of around 13,600 breeding pairs. After breeding both subspecies migrate to the seas off Peru and Chile. In Victorian waters the species is a rare visitor between March and October, with few sightings outside this period (Victorian Biodiversity Atlas data). The distribution of Buller's albatross around Australia has a centre of abundance off south-eastern Tasmania, radiating from there northwards along the coast of Victoria and New South Wales, and north westwards as far as South Australia. Off the south-east Australian coast, the occurrence of Buller's albatross seems to derive from several influxes of adults and immatures (Stahl et al. 1998). Most birds disperse outside Australasian waters during the non-breeding season (Stahl op. cit.).

Habitat

Buller's Albatross are marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean (Marchant and Higgins 1990). Specific habitat requirements are poorly known, but they have been observed in association with fishing boats close inshore and over waters 180-360 m deep in New Zealand (Robertson and Jenkins 1981; Secker 1969). This taxon does not appear to be as strongly associated with fishing boats as other albatrosses (Marchant and Higgins 1990). In Australia, Buller's Albatross are seen over inshore, offshore and pelagic waters. They appear to congregate over currents where water temperature exceeds 16^{o} C (Blaber 1986).

Breeding habitat of Buller's Albatross occurs on subtropical and subantarctic islands and rock stacks in the New Zealand region. Nests are made in a range of inland habitats including bare substrate or fern and tussock covered cliffs, slopes or ridges, open grassy meadows; and summit plateaus under Olearia forest (Marchant and Higgins 1990).

Threats

Incidental capture by commercial longline fisheries represents a major threat to the species. The Western Central Pacific Fisheries Commission manages and monitors fisheries activities in the Tasman Sea region and has found seabird bycatch to be at its highest in this Sea with Wandering, Black-browed, Buller's and Shy albatrosses being the most affected between April and September (BirdLife International op. cit. Ingestion of plastics by seabirds during foraging at sea has been identified as a key threat (BirdLife International 2014, Wilcox et al. 2015).

Through modifications to marine and terrestrial environments, climate change is likely to cause fundamental changes to aspects of the breeding biology and foraging ecology of albatross and giant petrel species (DSEWPaC 2011).

IUCN Criteria

Criterion A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(*a*) *cannot be used for A3*]

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of the following:

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

Evidence:

Ineligible under Criterion A

There is insufficient evidence to determine whether there has been a reduction in population (criterion A2). The future population reduction does not mean the threshold for eligibility under criterion A3.

Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy			
	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range, based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA), is estimated to be 30,000 km² which exceeds the threshold for criterion B.
The Area of Occupancy (AoO) across the taxon's range, based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA is estimated to be 50 km² but other thresholds under this criterion have not been met.

Criterion C. Small Population size and decline				
		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 250	< 2,500	< 10,000
AND at least one of C1 or C2				
C1	An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2	An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions:			
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals				

Evidence:

Ineligible under Criterion C

It is estimated that there are 10 to 15 mature individuals, but other thresholds under this criterion have not been met.

Criterion D. Very small or restricted population			
	Critically Endangered	Endangered	Vulnerable
Number of mature individuals (observed or estimated)	< 50	< 250	< 1,000
D2 Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time.	-	-	D2. Typically: AoO < 20 km2 or number of locations ≤ 5

Evidence:

Eligible under Criterion D as Endangered

The taxon is estimated to have 10 to 15 mature individuals. Figures are not known with any accuracy as the taxon has not been surveyed or specifically monitored in Australian waters in any detail, but it is a distinctive taxon that is likely to be reported. There are currently 12 records of the taxon in the VBA, however there is likely to be unlodged data from Victorian pelagic seabird trips that has not been formally recorded (M.O'Brien pers. comm. June 2019).

The taxon is assessed as Endangered under this criterion, but it has been downgraded to Vulnerable to account for the influence of interstate and international populations that reduce the extinction risk in Victoria.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

Blaber, S.J.M. (1986). The distribution and abundance of seabirds south-east of Tasmania and over the Soela seamount during April 1985. *Emu.* 86:239-244.

Blakers, M., S.J.J.F. Davies and P.N. Reilly (1984). *The Atlas of Australian Birds.* Melbourne, Victoria: Melbourne University Press.

DSE (2013) *Advisory List of Threatened Vertebrate Fauna in Victoria 2013*. Department of Sustainability and Environment, Melbourne.

(DSE) (2009). Action Statement - Nine Threatened Seabirds (No. 181). Retrieved from: https://www.environment.vic.gov.au/conserving-threatened-species/flora-and-fauna-guarantee-act-1988/action-statements.

Department of Sustainability, Environment, Water, Population and Communities (2011) *National recovery plan for threatened albatrosses and giant petrels 2011-2016,* Commonwealth of Australia, Hobart.

Garnett, S., Szabo, J. and Dutson, G. (2011). *The Action Plan for Australian Birds 2010.* CSIRO Publishing, Melbourne.

Marchant, S. and P.J. Higgins, eds. (1990). *Handbook of Australian, New Zealand and Antarctic Birds. Volume One - Ratites to Ducks.* Melbourne, Victoria: Oxford University Press.

SAC (2002). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 556 *Thalassarche bulleri*

Stahl, J.C., Bartle, J.A., Cheshire, N.G., Petyt, C. and Sagar, P.M. (1998) Distribution and movements of Buller's albatross (*Diomedea bulleri*) in Australasian seas. *New Zealand Journal of Zoology* 25(2): 109-137.