



FLORA & FAUNA

GUARANTEE

NOMINATION NO. **888**

TAXON ID: 11539

FLORA AND FAUNA GUARANTEE - SCIENTIFIC ADVISORY COMMITTEE

PRELIMINARY RECOMMENDATION ON A NOMINATION FOR LISTING

Neophoca cinerea Pèron 1816 - Australian Sea-lion

FILE NO.: FF/54/3809
DOCID107-417469679-742

Date of consideration: 6 February, 6 March, 13 May, 19 June, 8 July, 24 August, 7 October 2020

Validity: The nomination is for a valid item.

Prescribed Information: The prescribed information was provided.

Name of the Nominator is adequately provided.

Name of the item is adequately provided.

The nominated taxon is accepted by the Scientific Advisory Committee (SAC) as a valid taxon because it has been formally described and it is accepted as a valid taxon by Museum Victoria.

Current conservation status

The nominated taxon is not currently regarded as rare or threatened in Victoria.

The nominated taxon was listed as 'Endangered' by the International Union for Conservation of Nature (IUCN) in 2019 (Goldsworthy 2015) while the Australian status is currently 'Vulnerable' (Woinarski et al. 2014). In 2016 Humane Society International applied to the Australian Government requesting that the EPBC Act conservation status for the species be upgraded to 'Endangered'. The Minister for the Environment has yet to make a decision.

In South Australia, the species was listed as vulnerable in 2008 and is protected under the South Australian *National Parks and Wildlife Act 1972* (Version 1 July 2020), 'Schedule 1: Vulnerable Species'.

In Western Australia, the Australian Sea-lion is protected as threatened fauna under the *Wildlife Conservation Act 1950* — 'Wildlife Conservation (Specially Protected Fauna) Notice 2018, Schedule 3, Fauna that is rare or is likely to become extinct as vulnerable fauna'.

Eligibility for listing as a taxon under the Flora and Fauna Guarantee Act 1988

The Scientific Advisory Committee has assessed the eligibility of this nomination based on its extinction risk within Victoria in accordance with Section 16C(4)(c) of the *Flora and Fauna Guarantee Act 1988* (the Act).

This nomination was made to the Committee on 28 January 2020 in accordance with the Act and Flora and Fauna Guarantee Regulations 2011 and was accepted as a nomination by the Committee on 6 February 2020.

Amendments to the Act came into operation on 1 June 2020 and the Flora and Fauna Guarantee Regulations 2011 have since been replaced by the Flora and Guarantee Regulations 2020.

The SAC is required to consider this nomination in accordance with the Act as amended and the criteria for determining eligibility for listing prescribed in the Flora and Fauna Guarantee Regulations 2020. In its application of the relevant eligibility criteria, the SAC has, as required by the nationally adopted Common Assessment Method, had regard to *the IUCN Red List Categories and Criteria (Version 3.1)* and the *Guidelines for Using the IUCN Red List Categories and Criteria (Version 14, 2019)*.

Species information

Description and Life History

The Australian Sea-lion *Neophoca cinerea* is Australia's only endemic and least numerous seal species (Goldsworthy et al. 2009). Male Australian Sea-lions are between 200-250 cm long, weigh 250-300kg and are dark blackish brown with a mane of long coarse hairs. Females are 130-180cm long, weigh 70-100kg and are silvery grey in colour on their backs and creamy yellow fading to brown on their bellies. Sea-lions are more agile on land than 'true' seals, as they are capable of walking on all four flippers. The generation length for the species has been estimated at 12.4-12.8 years (Goldsworthy 2015).

The Australian sea-lion population has been estimated at 12 000 to >14 000 animals, making the species one of the rarest pinnipeds in the world (Gales et al. 1994, Goldsworthy et al. 2009). The population is scattered among at least 80 individual breeding colonies (all in SA or WA), most of which produce less than 50 pups in each breeding season. The current Victorian population is unknown as the species has not been monitored. The Victorian Biodiversity Atlas (VBA) has around 30 verified records of the species within the state jurisdiction, however the SAC is aware of additional Victorian records and observations of the species in the literature and other data sources that have not been added to the VBA.

There is considerable uncertainty about the unexploited population size prior to European settlement, the impacts of historical seal hunts on subpopulations, and the extent of their subsequent recovery or decline (Woinarski et al. 2014). Warneke (1995) provides an account of the species from a Victorian perspective.

Distribution

There is limited historic information on the size and precise range of Australian Sea-lion populations prior to European colonisation. Warneke (1982) detailed early historic accounts of the distribution of seals in Australia, primarily from the accounts of Flinders' expedition, with observations dating back to 1788-89. These records indicate that Australian Sea-lions once occurred in the southern Furneaux Group and Kent Group, in Bass Strait. Commercial seal exploitation in the 1700-1800s (see Ling 1999) resulted in regional extinction in this area (Campbell 2005). Although this activity ended in 1949 (Ling 1992), populations have not recovered to pre-exploitation levels (DSEWPaCPA 2013, Woinarski et al. 2014).

From a Victorian distribution point of view a number of seal experts provided their thoughts to the SAC.

Seal specialist Dr Robert Warneke (*pers. comm.* Jan. 2020) noted that:

'I think it can be reasonably argued that all Victorian waters would have been part of Neophoca's original range. Elsewhere it appears that they forage to and along the edge of the continental shelf.'

and

'The situation for drawing conclusions re. distribution or population size of Neophoca from records of cargoes of hair skins is equally fraught. We think that Neophoca was uncommon to rare in Bass Strait when sealing commenced, but we just don't know.'

McIntosh (*pers. comm.* March 2020) noted that

'Australian Sea-lions in Victoria are most likely males and are not common, but it is reasonable to assume that they have always used Victorian waters and coasts to forage and rest. The species is in decline across its breeding range and with additional threats including those from climate change, likely to go extinct. Every individual is important to maintain the current genetic diversity of the population.'

Arnould (*pers. comm.* May 2020) also noted that animals observed in Victorian waters were

'Males and juveniles (potentially of both sexes).'

Woinarski et al. (2014) note that there are records of occasional vagrants occurring up to the central coast of New South Wales along the east coast.

Habitat

Australian Sea Lion colonies occur mainly on coastal islands and several mainland coastal locations (Ling 1992, Shaughnessy 1999, Costa & Gales 2003). They use a wide range of habitats but prefer sheltered sides of islands with access to shallow pools where pups can congregate, and females seek holes or bushes to hide their pups where available (Gales et al. 1994).

Ecology

Australian Sea Lion forage at sea over the continental shelf in waters less than 150 m depth. Feeding occurs in relatively shallow shelf waters on a wide variety of benthic prey including a range of fish species, octopus, giant cuttlefish, squid, rock lobster, crabs and other small crustaceans, sharks and egg cases, little penguins, flying seabirds and small sea turtles (Ling 1992; Costa and Gales 2003; McIntosh et al. 2006; Goldsworthy et al. 2009; Baylis et al. 2009). These sea lions appear to be opportunistic foragers consuming mostly benthic species but with some pelagic species taken (McIntosh et al. 2006). They will also consume sharks caught in gillnets and rock lobsters in lobster pots leading to increased risk of entanglement and drowning of some individuals (Page et al. 2004; Goldsworthy et al. 2009; Hamer et al. 2011).

Threats

The SAC sought the views of seal experts in regards to threats acting on the species. Dr Rebecca McIntosh (*pers. comm.* March 2020) advised the SAC as follows:

‘Threats are different for itinerant males than animals in breeding colonies. Itinerant males are visiting and accessing resources, they are not reliant of those resources for reproduction and the continuation of the species.

- Interactions with commercial and recreational fishing is the main threat because males are itinerant
- Disease is a major threat for Australian Sea-lions (however itinerant males are not specifically threatened by this while they are in Victoria)
- Changes in the food web and prey depletion may reduce foraging success of itinerant males
- Rising global temperatures: the Australian sea lion has less flexibility in their physiology than fur seals, perhaps implying that they will be less resilient in a changing environment (Ladds et al. 2017). McIntosh et al. (2013) suggests that survival of juvenile Australian Sea-lions is negatively affected by warmer ocean temperatures (again, this is not related to itinerant males)
- Increased storm surge under climate change could reduce suitable coastal resting habitat for seals in general (McLean et al. 2019)
- Exposure to pollutants. Australian fur seals (*Arctocephalus pusillus doriferus*) are affected by persistent organic pollutants (POPS) at Deen Maar Island (Lady Julia Percy Island), Victoria. Visiting sea-lions may also be affected depending on the uptake pathways of the pollutants and the exposure time.
- Human disturbance is minimally threatening for itinerant males because they can move to another location.’

However Arnould (*pers. comm.* May 2020) advised that:

‘There are so few individuals being recorded in Victorian waters that one cannot determine what the relevant threats and trends might be.’

Decision by the Scientific Advisory Committee

The eligibility of the nominated taxon (including the extinction risk and the category of threat that applies to the taxon) to be specified in the Threatened List must be determined in accordance with the eligibility criteria prescribed for the purposes of Division 2 of Part 3 of the *Flora and Fauna Guarantee Act 1988* (FFG Act).

The relevant eligibility criteria are prescribed in Schedule 1 of the Flora and Fauna Guarantee Regulations 2020, which provides that a taxon is at risk of extinction in a particular category of threat and is therefore eligible to be specified in the Threatened List in relation to that category if a primary criterion for that category is met. Where applicable, a primary criterion is met if any one of its subcriteria is satisfied.

Primary criterion 3.1

As per the definition of ‘critically endangered’ in the FFG Act, the taxon of flora or fauna is assessed as being critically endangered.

Critically endangered, in relation to a taxon of flora or fauna, means that the taxon is facing an extremely high risk of extinction in the wild in the immediate future.

The taxon is assessed as being eligible for listing as Critically Endangered under Primary criterion 3.1 – subcriteria 3.1.1; 3.1.2 (a) and (b)(ii),(iv) & (v); 3.1.3 (b)(i) & (ii) and 3.1.4

The taxon was assessed as not eligible under Subcriterion 3.1.5

Subcriterion 3.1.1 *The taxon has undergone, is suspected to have undergone, or is likely to undergo in the immediate future, a very severe reduction in population size*

(3.1.1 is equivalent to IUCN Criterion A)

Evidence:

Although verified historic records for the species in Bass Strait are lacking, it is likely that the Australian Sea-lion was widespread in Victorian waters prior to human exploitation and settlement. Evidence from other range states suggests any return to historic numbers has been extremely slow.

Bass Strait was part of the Australian Sea-lions former range, the species has not recovered from colonial harvesting and has not recolonised that former range. The best information indicates that the species is in decline, including at its largest populations (R. McIntosh *pers. comm.* March 2020).

Subcriterion 3.1.2 *The taxon's geographic distribution is extremely restricted and at least 2 of the following circumstances apply—*

- (a) *the distribution of the population or habitat of the taxon is severely fragmented or restricted to a limited number of threat-based locations;*
- (b) *there is a continuing decline or reduction in any one of the following—*
 - (i) *extent of occurrence;*
 - (ii) *area of occupancy;*
 - (iii) *area, extent or quality of habitat;*
 - (iv) *number of locations or subpopulations;*
 - (v) *number of mature individuals;*

(3.1.2 is equivalent to IUCN Criterion B)

Evidence:

Small numbers of Australian Sea-lions have been recorded from coastal Victoria (mainly on and west of Phillip Island). It is highly likely that the species has always been uncommon in Victorian waters (R. McIntosh *pers. comm.* March 2020). The Victorian Biodiversity Atlas (VBA) currently has 30 records of *Neophoca cinerea* with the majority of observations being single animals from SW Victorian coastal sites and islands (eg. Lady Julia Percy). The oldest dated VBA record is 1973 and the most recent 2019 (at Port Campbell). Warneke (1995) notes that Victorian records are all likely to be males that have wandered from breeding grounds further west. Sea-lions have been recorded from as far east as Phillip Island with one record from near Altona (Warneke *op. cit.*). The Australian Sea-lion is neither increasing in population numbers or expanding its range (Department of the Environment (2020).

Subcriterion 3.1.3 *The taxon's estimated total number of mature individuals is very low and evidence suggests that—*

- (a) *the number will continue to decline at a very high rate; or*
- (b) *the number is likely to continue to decline and any one of the following apply—*
 - (i) *each subpopulation is extremely small;*
 - (ii) *most of the individuals are in one subpopulation;*
 - (iii) *extreme fluctuations occur in the number of mature individual members.*

(3.1.3 is equivalent to IUCN Criterion C)

Evidence:

The taxon was considered extinct in Victoria. However, based on VBA records, there is evidence that numbers and the extent of occurrence of the species in Victoria may both be increasing. However, current information on the numbers of sea-lions in Victorian waters suggest they are extremely low. Research findings from other states indicates that the total Australian population is not increasing or returning to its historic range.

Subcriterion 3.1.4 *The taxon's estimated total number of mature individuals is extremely low.*

(3.1.4 is equivalent to IUCN Criterion D)

Evidence:

Since the early 1970s small numbers of Australian Sea-lions have been recorded from coastal Victoria (mainly on and west of Phillip Island). There are only 30 records of the species in the Victorian Biodiversity Atlas. There is currently no evidence to suggest that the taxon is subject to any significant fluctuations in numbers in the Victorian range.

Documentation

The published information provided to the SAC has been assessed. Based on the available evidence, the SAC believes that the data presented are not the subject of scientific dispute and the inferences drawn are reasonable and well supported.

Preliminary Recommendation of the Scientific Advisory Committee

Proposed conservation status (category of threat): Critically Endangered in Victoria

As outlined above, the nominated taxon satisfies at least one criterion of the set of criteria prepared and maintained under Division 2 of Part 3 of the Act, and stated in Schedule 1 of the Flora and Fauna Guarantee Regulations 2020.

The Scientific Advisory Committee concludes that on the evidence available the nominated item is eligible for listing as Critically Endangered in Victoria because Primary criterion 3.1 – subcriteria 3.1.1; 3.1.2 (a) and (b)(ii),(iv) & (v); 3.1.3 (b)(i) & (ii) and 3.1.4 of the FFG Regulations 2020 has been satisfied. The matching IUCN criteria are: A2; B1(a),(b); C2(a)(i), (ii) and D1.

The Scientific Advisory Committee therefore makes a preliminary recommendation that the nominated taxon be supported for listing as Critically Endangered under the *Flora and Fauna Guarantee Act 1988*.

Endorsement by the Convenor of the Scientific Advisory Committee**Date**


**Emeritus Prof Barbara Evans
Convenor**

16 October, 2020**References**

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Personal communications

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