Eubalaena australis – Southern Right Whale

Regional Red List status (2016)	**Least Concern***
National Red List status (2004)	Least Concern
Reasons for change	No change
Global Red List status (2013)	Least Concern
TOPS listing (NEMBA)(2007)	None
CITES listing (1975)	Appendix I
Endemic	No

*Watch-list Threat

Named the 'right' whale as its long baleen plates were superior to that of other baleen whales and therefore the preferred species to obtain. It also didn't hurt that the whales produced high oil yields, were fairly slow moving, showed site fidelity to coastal calving grounds and often floated once dead (Best 2007).

Taxonomy

Eubalaena australis (Desmoulins 1822)

ANIMALIA - CHORDATA - MAMMALIA - CETACEA - BALAENIDAE - *Eubalaena* - *australis*

Synonyms: *Balaena antarctica* (Lesson 1828), *Balaena antipodarum* (Gray 1843), *Balaena australis* (Desmoulins 1822), *Balaena capensis* (Gray 1868), *Balaena hectori* (Gray 1874), *Eubalaena capensis* (Gray 1866)

Common names: Southern Right Whale (English), Suidelike Noordkapper (Afrikaans)

Taxonomic status: Species

Taxonomic notes: Previously Rice (1998) classified all right whales across all oceans as a single species within the genus *Balaena*, along with the Bowhead Whale (*B. mysticetus*). However, since right whales seldom venture into equatorial regions, northern and southern hemisphere populations are spatially separated from one another. Thus, the Southern Right Whale is widely acknowledged as a distinct species from its relatives in the northern hemisphere. Based on genetic analyses, three distinct phylogenetic species of right whale have been identified with distributions that do not overlap (Rosenbaum et al. 2000). These are the North Atlantic and North Pacific species which are separated by continental landmasses, and a single southern hemisphere species, the Southern Right Whale (Rosenbaum et al. 2000). This classification is currently accepted by the International Whaling Commission (IWC) Scientific Committee (IWC 2004), as well as the Convention on Migratory Species.

Assessment Rationale

Within the assessment region, the Southern Right Whale population is increasing and recent ranges expand into historical parts of its range, suggesting healthy population dynamics. Population numbers are no longer decreasing thanks to the IWC's moratorium on right whale capture since 1935, followed by the cessation of illegal Soviet captures in 1972. Areas of reduced anthropogenic disturbance located in sheltered coastal waters such as the De Hoop Marine Protected Area and the Hermanus whale sanctuary may contribute to a continued stable population growth rate Population increases within the assessment region have been estimated through aerial surveys, and the most recent annual population growth rate is projected as 6.6%. No major threats have been identified that could cause rapid population decline. However, there is the emerging pressure of bulk sediment benthic phosphate mining off South Africa and Namibia, and the impacts of such activity on the ecosystem is unknown, but likely negative and should be monitored.

In 1997, the globally estimated population size, based on a 7.5% annual increase, was over 1,600 mature females. Although still scarce relative to its historic abundance (less than 10%), no major threats seem to be threatening Southern Right Whale populations. In 2007 the current global southern hemisphere population was estimated to be greater now than it was three generations prior. This result was based on an estimated generation time of 29 years.

Regional population effects: This southern hemisphere species exhibits seasonal migration and is wide-ranging. There are no barriers to dispersal, thus rescue effects are possible.

Distribution

Across the southern hemisphere, Southern Right Whales have a circumpolar distribution, present within the South Atlantic, South Pacific and Indian Oceans. Similar to other mysticete species, Southern Right Whales exhibit seasonal migrations southwards in summer to sub-Antarctic waters where they feed predominately on copepods (Tormosov et al. 1998), and northwards in winter (as far as about 20°S) for calving and nursing.

In summer, Southern Right Whales are commonly located between 40°S and 50°S (Ohsumi & Kasamatsu 1986), however they have been reported as far south as 65°S

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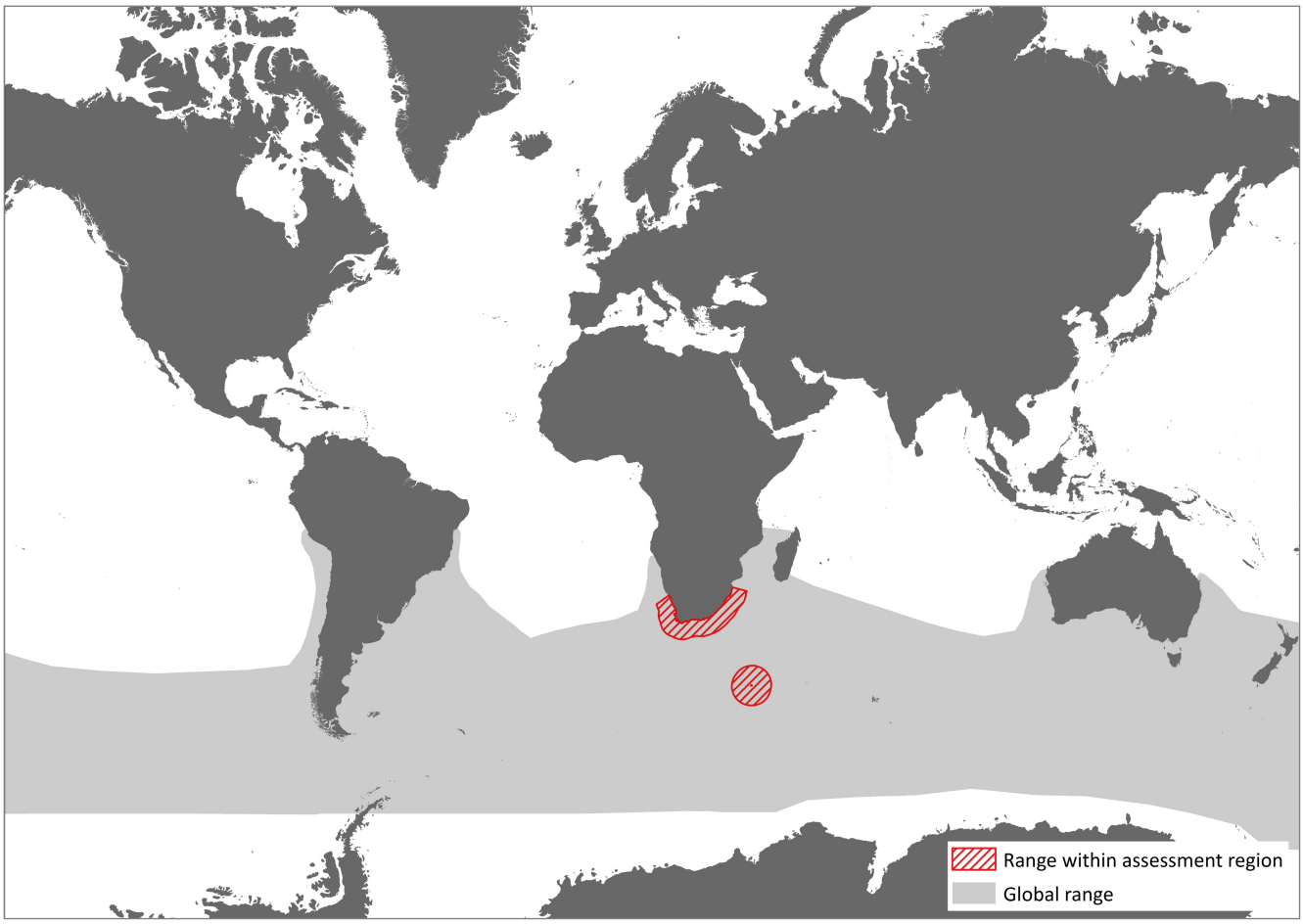

Figure 1. Distribution range for Southern Right Whale (*Eubalaena australis*) within the assessment region (IUCN 2013)

(Bannister et al. 1999; IWC 2007), and around South Georgia in the southern Atlantic Ocean (Rowntree et al. 2001). These sightings from the Antarctic to the sub-Antarctic (or grounds associated with sub-Antarctic or subtropical convergence zone), do not necessarily signify a range expansion but rather, new information derived from satellite tagging.

During winter months the species moves northwards towards coastlines of continents and islands, mainly for calving. Nursery grounds have been identified close to the shore off the southern regions of Australia and New Zealand, especially the Auckland and Campbell Islands, as well as off the east coast of South America and around southern Africa (Richards 2009). To a lesser extent, they have also been documented off the coasts of Chile, Peru, Tristan da Cunha, and the east coast of Madagascar (IWC 2001; Rosenbaum et al. 2001).

Within the assessment region, this species had a historical distribution up to southern Angola. Historically there were three winter concentrations, namely Walvis Bay in present day Namibia, the Cape of Good Hope in the west, and up to Delagoa Bay on the east coast of South Africa (Richards 2009). Present summer distribution in southern African waters encompasses 35°S to 60°S. In winter, females with calves are concentrated on the southern African coastal calving ground from 18°30'E to 23°50'E (Best 2000). There is a recognised core area for breeding populations between Saint Sebastian Bay and Pearly Beach near Hermanus, (Elwen & Best 2004a, 2004b, 2004c). Further core areas occur throughout the Benguela (at low frequencies during autumn and winter) (Barendse & Best 2014). The main behaviours recorded for whales along the west coast, up to St Helena Bay, is for socialising during spring and feeding during summer (Barendse & Best 2014). However, it is still not known where the majority of males and females without calves overwinter.

Population increases of the residual population are leading to repopulation of historical habitat, for example into Namibia and Mozambique. Photo-identification and genetic data are needed to determine whether the whales sighted off Mozambique are part of the South African population or the remains of the historic Indian Ocean population (IWC 2013). Also, shore-based observation along the South African west coast suggests that there are animals moving from a northern area southwards, but research coverage north of St Helena Bay is nearly non-existent (Barendse & Best 2014).

Additionally Southern Right Whales have been seen sporadically at sub-Antarctic Marion Island, a South African territory (Postma et al. 2011), which is part of the Prince Edward Islands Marine Protected Area (MPA), and movement has been recorded between South Africa and Marion Island (Best & Peters 2011).

Population

The most recent assessment of Southern Right Whale populations was conducted by the IWC in 2011 (IWC 2013). Populations were significantly depleted by commercial whaling; however, since then three breeding populations off Australia, South Africa and the east coast of South America have all shown strong recovery.

Table 1. Use and trade summary for the Southern Right Whale (*Eubalaena australis*)

Category	Applicable?	Rationale	Proportion of total harvest	Trend
Subsistence use	No	-	-	-
Commercial use	Yes	Ecotourism in the form of shore- and boat-based whale-watching.	Unknown	Increasing
Harvest from wild population	Not presently	-	-	Ceased completely in 1972.
Harvest from ranched population	No	-	-	-
Harvest from captive population	No	-	--	-

Although some illegal Soviet whaling during the 1960s impeded population recovery, subsequently populations appear to have increased. Based on a 7.5% annual increase in 1997, the estimated global population abundance was 7,500 individuals, including 1,600 mature females (659 from South African waters) (IWC 2001). However, the global population estimated in 1997 was likely still less than 10% of historic levels (IWC 2001).

Within the assessment region, the southern African coast is considered to be one breeding assemblage of Southern Right Whales. In 2012 the total population that overwinters off the southern African coast was estimated at 5,062 animals, of which 1,321 were thought to be reproducing females (Brandão *et al.* 2013). The annual population growth rate within the assessment region is estimated at 6.6% (Brandão *et al.* 2013). The estimated generation length is 29 years (Taylor et al. 2007).

Current population trend: Increasing

Continuing decline in mature individuals: No

Number of mature individuals in population: 1,321 mature females estimated in South African waters in 2012, but the overall mature population is unknown.

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: Unknown

Severely fragmented: No

Habitats and Ecology

Most research on this species has been conducted on the three major breeding populations off South America, Australia and South Africa. In winter, Southern Right Whales are often seen in cow/calf pairs or small groups within sheltered bays of the Western Cape, and are frequently observed performing spectacular aerial displays.

Tormosov et al. (1998) reported that north of 40°S, this species is known to feed mostly on copepods, while further south (beyond 50°S), their diet consists mostly of euphausiids, and between these latitudes their diet is made up of a mixture of the two. The proximity of the Benguela upwelling system and associated feeding opportunities during summer is somewhat unique in South Africa, and there is documented movement between the south and west coasts (Barendse & Best 2014). There are also some movements of individuals recorded between South Africa and Namibia (Roux et al. 2011), and it is likely that maternally directed site fidelity to migratory routes, feeding and breeding sites is a determining factor.

Females usually give birth at intervals of three years. However, this period may lengthen to five years during poorer feeding conditions (Leaper et al. 2006). Following a gestation period of 12–13 months, calves are born between June and October, peaking in August (Best 1994). More recent work using molecular and isotopic analyses has indicated cultural (maternal) transferred fidelity to nursery grounds (Valenzuela et al. 2009), although there have been documented movements between different breeding populations (Pirzl et al. 2009).

Ecosystem and cultural services: Marine mammals integrate and reflect ecological variation across large spatial and long temporal scales, and therefore they are prime sentinels of marine ecosystem change; migratory mysticete whales may be used to investigate broad scale shifts in ecosystems (Moore 2008).

The Southern Right Whale is a definite flagship species for conservation and nature-based tourism in South Africa, e.g. it is the subject of the Hermanus Whale Festival, and the motivation for the Whale Trail in De Hoop Nature Reserve.

Use and Trade

This species was specifically targeted during the periods of major commercial whaling, but is no longer harvested. There may still be some informal use of baleen and whale

Photo 1. Southern Right Whale breaching (Vic Cockcroft)

Table 2. Threats to the Southern Right Whale (*Eubalaena australis*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Rank	Threat description	Evidence in the scientific literature	Data quality	Scale of study	Current trend
1	*4.3. Shipping Lanes*: ship strikes. Current stress *2.1 Species Mortality*.	Meÿer et al. 2011	Empirical	Local	Increasing, but this is accounted for by population increase.
2	*5.4.4 Fishing & Harvesting Aquatic Resources*: entanglement in coastal fisheries. Current stresses *2.1 Species Mortality* and *2.2 Species Disturbance*.	Clapham et al. 1999	Anecdotal	International	Stable
3	*11.1 Habitat Shifting & Alteration*: due to climate change. Current stress *2.3.8 Indirect Species Effects*: indirect effects on food resources.	Leaper et al. 2006	Indirect	National	Increasing: breeding success is driven by prey availability, which is largely influenced by alterations in sea surface temperature.
4	*9.6.3 Noise Pollution*: marine noise pollution through seismic surveys and boat traffic.	Gordon et al. 2003	Anecdotal	International	Increasing
5	*3.2 Mining & Quarrying*: bulk sediment mining for benthic phosphates.	Benkenstein 2014	Indirect	Regional	Increasing
6	*6.1 Recreational Activities*: human intrusions and disturbance due to ecotourism, including disturbance to nursery grounds affecting energy budget and influencing reproductive success.	-	Anecdotal	-	Increasing
7	*8.2.2 Problematic Native Species/Diseases*: disease transmission from Kelp Gulls.	Rowntree et al. 1998	Anecdotal	National	Not currently a threat in the assessment region, but may be a potential threat to this species.
8	*9.2 Industrial & Military Effluents*: toxicology (accumulation of human origin toxins).	-	Anecdotal	-	-

bones collected from stranded animals for artistic or ornamental purposes, or for use as educational exhibits in museums.

The value of shore-based whale-watching in South Africa in 1995 was estimated at about R5 million indirect expenditure (Findlay 1997). In 2008 it was estimated that there were > 500,000 whale watchers in South Africa spending > 2.7 million $US directly and > 58.7 million $US indirectly (O'Connor et al. 2009). The boat-based whale-watching industry (based on whale-watcher numbers) has increased by 14% per annum between 1998 and 2008. It is important to note that although these economic numbers are not just for Southern Right Whales, they are major contributors to the overall whale-watching industry.

Threats

Right Whales were specifically targeted by commercial southern hemisphere whaling since its commencement in the 17th century, and during the 18th and 19th centuries exploitation of these species by American and European whaling increased substantially. There is a great deal of uncertainty over the exact number of animals killed during this period, however, between 1770 and 1900 there is a conservative estimate of 150,000 individuals killed globally, and between 48,000 and 60,000 of these were believed to have been killed during the 1930s alone. At the beginning of the 20th century (the start of the modern whaling era), Southern Right Whales were rare, thus only 1,600 were caught before they were formally protected in 1935.

The southern hemisphere population (Southern Right Whales) was estimated at 55,000–70,000 individuals in 1770, but is believed to have dropped to only 300 by the 1920s. From American import records of whale oil and baleen, Best (1987) estimated that nearly 60,000 Southern Right Whales were caught by American commercial whalers during the 19th century. Following their protection in 1935, it is presumed that their numbers increased until the 1960s when 3,212 individuals were illegally hunted by Soviet fleets between 1951 and 1970 (Tormosov et al. 1998), thus delaying their recovery.

Currently the species is subjected to entanglement (mostly in fishing gear, including shark nets, trap fisheries) and ship strikes, but neither have any measureable impact on the rate of recovery. Ranked threats are:

1. Entanglement increasing with population but not accelerating. There is need to monitor the experimental octopus longline pot fishery on the south coast where entanglements of Bryde's whales have been recorded recently. Humpback and Southern Right Whales are the two large whale species most likely be become entangled in nets (Meÿer et al. 2011). Reported incidents of Southern Right Whale entanglement in nets other than shark nets increased between 1990 and 2009; however, this was accounted for by the 7% annual increase in population abundance. Although entanglement mortality does not appear to be hindering population growth, increased population numbers are expected to result in heightened levels of anthropogenic interaction, thus requiring mitigation improvements.

Table 3. Conservation interventions for the Southern Right Whale (*Eubalaena australis*) ranked in order of effectiveness with corresponding evidence (based on IUCN action categories, with regional context)

Rank	Intervention description	Evidence in the scientific literature	Data quality	Scale of evidence	Demonstrated impact	Current conservation projects
1	*5.1.1. Law & Policy*: maintain hunting ban through the International Whaling Commission, and continue to conduct surveys assessing the status of populations and trends in abundance.	Best et al. 2001	Empirical	National	Population increasing by 7% per annum since 1979.	Protected by IWC, and is listed in Appendix I of CITES and CMS. Current monitoring programme of nursery grounds from Nature's Valley to Muizenberg by the MRI.
2	*1.1. Site/Area Protection*: establish MPAs in breeding grounds.	-	-	-	-	Calving grounds are currently protected in Hermanus, De Hoop and the Breede River Mouth areas.
3	*5.4. Compliance & Enforcement*: enforce whale watching code of conduct.	-	Anecdotal	-	-	-
4	*5.2. Policies & Regulations*: implement and enforce a reduction of boat speeds, especially within areas of high whale concentration.	Laist et al. 2014	Empirical	Local	Lower vessel speeds decreases ship strikes.	-
5	*3.1 Species Management*: have mandatory spotters (member of crew) on bow or bridge of ships during transits to and from harbours like Saldanha.	-	Anecdotal	-	-	-
6	*4.3 Awareness & Communications*: interact with fishing community to minimise entanglement in fishing gear i.e. dog-boning excess rope of lobster pots.	-	Anecdotal	-	-	-

2. The severity of small boat ship strikes is increasing, especially with calves in nursery grounds. Ship strikes from fishing boats is also likely to be increasing (Best et al. 2011). Areas of industrial development such as Saldanha Bay, where whales utilise the bay and harbour approaches, may be potential additional ship strike areas (Barendse & Best 2014).
3. Climate change may also affect this species. Observed correlations between breeding success off Argentina and sea surface temperature anomalies at South Georgia suggest that as Southern Ocean feeding grounds warm up, the average calving rate of Southern Right Whales can be expected to decline (Leaper et al. 2006).
4. An additional emerging threat to this species as a result of climate change includes heightened disease transmission and changes in energy expenditure (thus affecting lactation and calf rearing).
5. Anthropogenic noise is a potential minor manageable threat. Seismic surveys may be increasing and of concern in areas like De Hoop MPA where prospecting rights are allocated near nursery areas.
6. An emerging and potentially severe threat in South African and Namibian waters is allocation of rights for bulk sediment mining for benthic phosphates (Benkenstein 2014). The disturbance of sediments and extraction of minerals could potentially impact on the dynamics of nutrient cycling and productivity in yet unknown ways.
7. Current levels of ecotourism are sustainable but increases may cause disturbance to calves at nursery sites.
8. On Argentina's important Península Valdés calving ground, parasitism by Kelp Gulls *Larus dominicanus*, which gouge skin and blubber from the whales' backs, has been increasing rapidly in recent years and may eventually drive the whales elsewhere (Rowntree et al. 1998). These gull attacks may play a contributing factor in the spike in mortality of Southern Right Whale calves since 2003 (IWC 2013). This appears to be a learned behaviour that has spread through the gull population, and which is likely exacerbated by the elevated gull populations provisioned by the prevalence of uncovered disposal sites for fishery and other waste. This localised threat is used as a warning to closely monitor other populations.

Conservation

Globally, right whale species have been formally protected from commercial whaling since 1935; however, this ruling has only been conformed to since the beginning of the 1970s, when illegal whaling by Soviet fleets was brought to an end, and land stations in South America no longer received Right Whales. Additionally, this species is listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

The Southern Right Whale populations form one of South Africa's best long-term datasets for a conservation success story of how ending harvesting can restore populations and it is highly recommended that monitoring of the population is continued. For example, the Mammal Research Institute of the University of Pretoria is currently involved in monitoring the Southern Right Whale nursery grounds from Nature's Valley to Muizenberg. Within the assessment region, Southern Right Whale calving grounds enjoy added protection in Hermanus, De Hoop and the Breede River Mouth areas, although there are other protected areas also utilized by the species: Table Mountain National Park MPA, West Coast National Park (feeding), Stillbay MPA, Goukamma MPA, Robberg MPA, Tsitsikamma MPA and the proposed Greater Addo MPA. Assessment of critical habitats such as nursing and feeding grounds should be considered.

In 2008, it became mandatory for vessels ≥ 65 feet (19.8 m) to travel at speeds of 10 knots or less in 10 seasonally managed areas (SMAs) off the east coast of the USA in attempts to reduce vessel strikes of large whales, in particular Southern Right Whales and Humpback Whales. Laist et al. (2014) determined that this mitigation effort is effective in reducing vessel strikes of right whales within the designated SMAs. In the future, South Africa could trial reducing boat speeds as an intervention to reduce boat strikes in hotspot areas (for example, harbours).

Recommendations for managers and practitioners:

- Continued systematic monitoring of population.
- Regulate boat traffic in harbours.
- Enforce penalties on ecotourism operators who breach code of conduct.

Research priorities:

- Continued research into inter-population relationships.
- Explore importance of South Africa as a source population for re-occupation of former ranges in Namibian and Mozambique waters through photo-identification (photo-ID) and genetics data.

Encouraged citizen actions:

- Citizens should help to enforce whale watching codes of conducts by reporting illegal activities.
- Report strandings and entanglements to relevant authorities.
- Whale-watching vessels can collect photo-ID data and make opportunistic behavioural observations.
- Continue surveys and educate public regarding whale-watching, to minimise disturbance. An educated public can be watchdogs for compliance during (audience effect) expeditions, and help to enforce codes of conduct. Codes of conduct should be displayed on ships and made available to the public.
- Uploading location sightings to virtual museum platforms will help in determining the spatial and temporal distribution of the population.

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Southern Right Whale (*Eubalaena australis*) assessment

Data sources	Field surveys (literature, unpublished)
Data quality (max)	Estimated
Data quality (min)	Estimated
Uncertainty resolution	Best estimate
Risk tolerance	Evidentiary

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Assessors and Reviewers

Ingrid Peters[1], Jaco Barendse[1]

[1]University of Pretoria

Contributors

Fiona Preston-Whyte[1], Claire Relton[1], Matthew Child[1], Simon Elwen[2], Ken Findlay[2], Mike Meÿer[3], Herman Oosthuizen[3], Stephanie Plön[4]

[1]Endangered Wildlife Trust, [2]University of Pretoria, [3]Department of Environmental Affairs, [4]Nelson Mandela Metropolitan University

Details of the methods used to make this assessment can be found in *Mammal Red List 2016: Introduction and Methodology.*