Balaenoptera acutorostrata subsp. – Dwarf Minke Whale

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Regional Red List status (2016)	**Least Concern***
National Red List status (2004)	Data Deficient
Reasons for change	Non-genuine change: Change in risk tolerance
Global Red List status (2008)	Least Concern
TOPS listing (NEMBA) (2007)	None
CITES listing (1986)	Appendix I
Endemic	No

*Watch-list Data

Dwarf Minke Whales have been documented producing a remarkable vocalisation, described as a repetitive blaster-like noise, aptly known as the "Star Wars sound" (Gedamke et al. 2001).

Taxonomy

Balaenoptera acutorostrata (Lacépède 1804)

ANIMALIA - CHORDATA - MAMMALIA - CETARTIODACTYLA - BALAENOPTERIDAE - *Balaenoptera - acutorostrata*

Common names: Dwarf Minke Whale, Common Minke Whale, Lesser Rorqual, Little Finner, Little Piked Whale, Minke, Minke Whale, Sharp-headed Finner (English), Minkewalvis (Afrikaans)

Taxonomic status: Subspecies

Taxonomic notes: The taxonomic status of Minke Whales is yet to be resolved, and prior to the 1990s only one species was recognized, *B. acutorostrata* (Lacépède, 1804), which was thought to exhibit one of the most extensive distributions of all cetaceans (Stewart & Leatherwood 1985). The most common Minke Whale in the southern hemisphere (*B. bonaerensis* Burmeister, 1867) was found to differ morphologically from those in the North Atlantic and North Pacific. The International Whaling Commission (IWC) Scientific Committee (SC) recently recognized the larger Antarctic Minke Whales (*B. bonaerensis*) as a distinct species from those in the northern hemisphere (IWC 2001).

To complicate matters further, a further southern hemisphere form (assessed here) was described, which was smaller in size compared to *B. bonaerensis*. Best (1985) recognised this 'diminutive' form of Minke Whales based on specimens from South Africa, and described visual differences between them and the Antarctic Minke Whale, including light baleen plates, a white shoulder patch and a darker colouration in the neck region. This smaller form, termed the "Dwarf" Minke Whale, may be genetically distinct from *B. bonaerensis*, and more closely related to the North Pacific Minke Whales, and thus has been classified *B. acutorostrata* (Wada et al. 1991; IWC 2001). The colour patterns are consistent with Dwarf Minke Whales throughout the southern hemisphere (Arnold et al. 2005). The taxonomic position delineating between Antarctic Minke Whales, *B. bonaerensis* and Dwarf Minke Whales, *B. acutorostrata* has been accepted by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Convention on Migratory Species (CMS). Three subspecies of *B. acutorostrata* have been suggested, including *B. a. acutorostrata* from the North Atlantic, *B. a. scammoni* from the North Atlantic, and the Dwarf Minke Whale in the southern hemisphere (unnamed) (Rice 1998).

Assessment Rationale

This subspecies is fully protected in South African waters under national legislation and an IWC moratorium on commercial whaling. Thus, although there are no reliable data available with which to assess the population status of Dwarf Minke Whales, there is no reason to suspect that there is a decline in the local population of this subspecies. The Dwarf Minke Whale is therefore listed as Least Concern because, although it has very low numbers naturally, there are no specific identified threats that could cause major population decline. However, further monitoring and an estimate of population size and trend is necessary. Taxonomic and distributional resolution and delimitation is also necessary. This subspecies should be reassessed once such data are available.

Regional population effects: Dwarf Minke Whales have a broad distribution across the southern hemisphere. There are no barriers to dispersal, thus rescue effects are possible.

Distribution

The Dwarf Minke Whale occurs in both tropical and warm temperate waters of the southern hemisphere. Their distribution extends along both the east and west coasts of South Africa (Best 1985) and Australia (Arnold et al. 1987; Bannister et al. 1996; Arnold 1997), and they have been recorded off Mozambique, New Zealand (Dawson & Slooten 1990), New Caledonia (Garrigue & Greaves 2001), Brazil (Baldas & Castello 1986; Zerbini et al. 1996) and in the Beagle Channel (Chile/Argentina; Acevedo et al.

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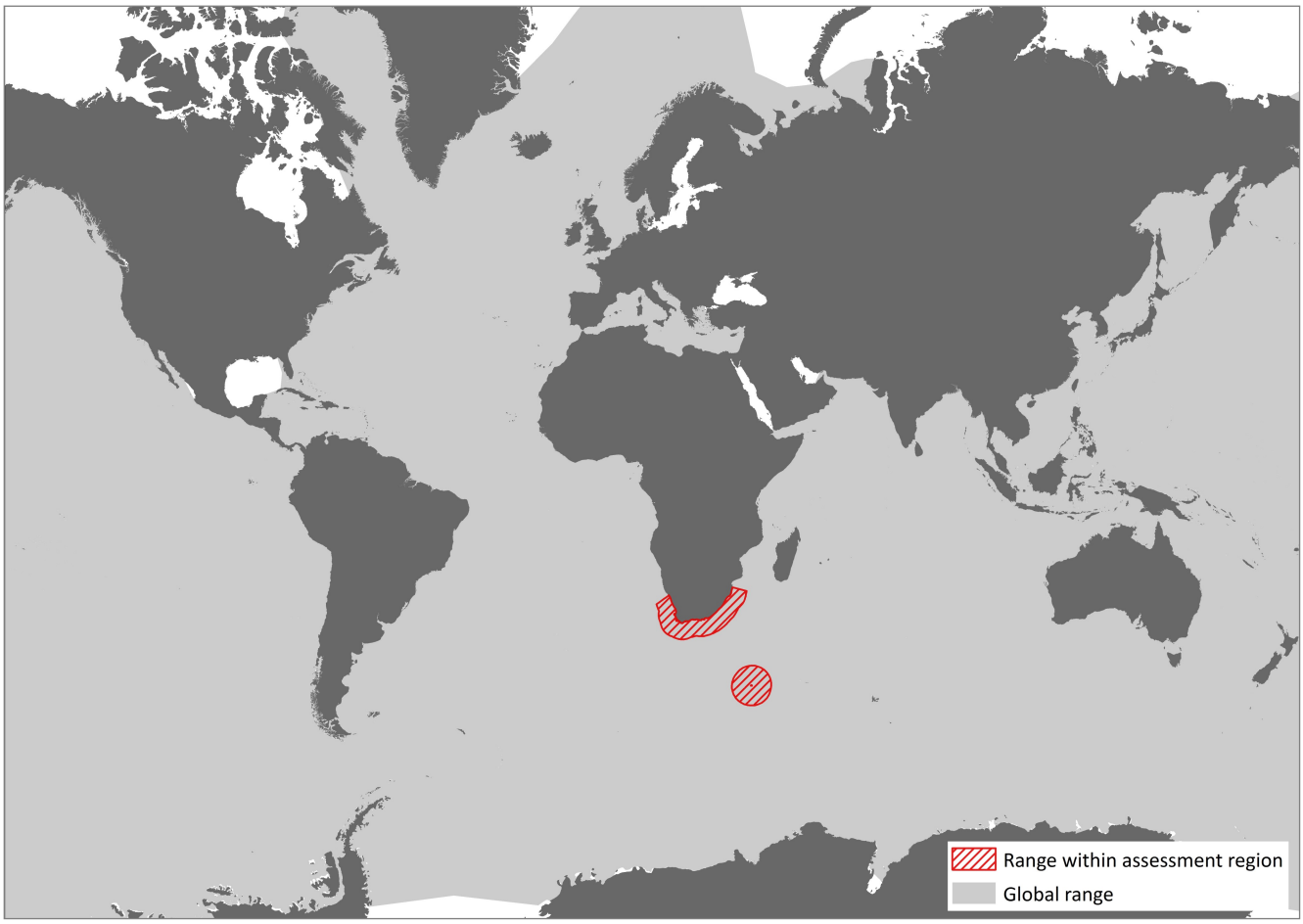

Figure 1. Distribution range for Dwarf Minke Whale (*Balaenoptera acutorostrata*) within the assessment region (IUCN 2012)

2005). Dwarf Minke Whales may primarily occur within coastal habitats (Best 1985; Zerbini et al. 1996; Perrin & Brownell 2002), however Zerbini et al. (1997) recorded them over the continental shelf off Brazil within fairly shallow waters (4 - 200 m deep). Their range extends from approximately 7°S to 58°S (Best 1985; Perrin & Brownell 2002). The range limits of *B. acutorostrata* and *B. bonaerensis* in the southern hemisphere are fairly ambiguous, because parts of their range are thought to overlap. Dwarf Minke Whales are present at higher latitudes and are considered to be a more subtropical species compared to Antarctic Minke Whales, but are significantly less common than Antarctic Minke Whales. Off the east coast of South Africa, *B. acutorostrata* are generally present closer inshore than *B. bonaerensis* (Skinner & Chimimba 2005).

During the summer months, most records of Dwarf Minke Whales are from sub-Antarctic waters. Their large-scale movements and migration patterns remain uncertain, as some whales are present year-round, whereas others may exhibit migratory behaviour. Acevedo et al. (2007) describes a seasonal north/south movement of Dwarf Minke Whales off South America, and similarly in the western South Pacific, Arnold (1997) observed the seasonal occurrence of this species between May and September, with peaks in June and July. These individuals are suggested to spend summer in Antarctic waters south of New Zealand, between 55° and 62°S (Pastene et al. 2010). Pastene et al. (2010) proposed that there may be multiple populations of Dwarf Minke Whales in the southern hemisphere, which exhibit seasonal spring/summer migrations due south to Antarctic waters.

Population

According to the IWC, there are no reliable data available with which to assess the population status of Dwarf Minke Whales, as the older available quantitative sighting data of Minke Whales in the southern hemisphere does not distinguish *B. acutotostrata* from *B. bonaerensis*. However, *B. bonaerensis* is considerably more numerous compared to the Dwarf Minke Whale. Only recently has it been possible to distinguish Dwarf Minke Whales from Antarctic Minke Whales at sea, using colouration patterns and the identification of shoulder patches, and sightings are too few to provide a population estimate.

It is likely that *B. acutorostrata* was not subjected to substantial overexploitation during commercial whaling activities directed at Minke Whales, because its range falls predominantly outside of the Antarctic Minke whaling areas. Between 1987 and 1993, more than 1,700 Minke Whales were captured by Antarctic pelagic fleets, and only 16 of these were recorded to have been Dwarf Minke Whales (Nishiwaki et al. 2006). These individuals were predominantly taken from the northern limits of the whaling operations, between 55° and 62°S. Best (1985) suggested that only 3-4% of Minke Whales landed off Durban were Dwarf Minke Whales, and very few individuals are thought to have been caught off Brazil (Zerbini et al. 1997).

Within the assessment region, although numbers are likely to be low, there is no reason to suspect a decline since no major threats have been recognised at present.

Table 1. Threats to the Dwarf Minke Whale (*Balaenoptera acutorostrata*) 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	*5.4.1 Fishing & Harvesting Aquatic Resources*: intentional use and subsistence use (under a scientific permit).	-	Anecdotal	-	-
2	*11.2 Habitat Shifting & Alteration*: due to climate change. Current stress *2.3.8 Indirect Species Effects* on food resources.	Burns 2001	Indirect	International	Unclear
3	*5.4.4 Fishing & Harvesting Aquatic Resources*: entanglement in coastal fisheries or shark nets. Current stresses *2.1 Species Mortality* and *2.2 Species Disturbance*.	Meÿer et al. 2011	Empirical	Local	Stable

Current population trend: Probably stable

Continuing decline in mature individuals: Unknown

Number of mature individuals in population: Unknown

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: Unknown

Severely fragmented: No

Habitats and Ecology

The Dwarf Minke Whale is a relatively cryptic species, occurring in both coastal as well as offshore waters. Very little data is available on the behavioural ecology, diet, movement patterns and reproduction of this species. In South African waters, some degree of habitat separation between Dwarf Minke Whales and Antarctic Minke Whales has been proposed, where the Dwarf Minke Whale appears to prefer coastal waters (Best 1985). This trend is not consistent throughout their range however, as Dwarf Minke Whales have been documented in deep oceanic waters off the coast of Australia (Kasamatsu et al. 1988), and range overlap, although exceptional, does occur (e.g. Arnold et al. 2005).

The feeding habits of Dwarf Minke Whales have been poorly documented. *Balaenoptera acutorostrata* in the North Atlantic showed spatially and temporally varied diets, dominated by krill in their most northern regions, but by herring and capelin in other areas. When herring and capelin were scarce, they were found to consume gadoids (Lindstrøm & Haug 2002). Contrastingly, in the North Sea, Minke Whales may feed almost entirely on sandeels, whereas those off Iceland fed on sandeels, capelin and gadoids (Víkingsson et al. 2006). No food remains were found in the stomachs of Dwarf Minke Whales examined off Durban or Australia; however in Antarctica, they have been reported feeding on myctophid fish and euphausiids (Ichii & Kato 1991; Kato & Fujise 2000), and the stomach contents of animals caught off Brazil contained *Euphausia similis* (Secchi et al. 2003).

Dwarf Minke Whales were recorded occurring singly off the coast of Durban, although pods of up to 8 individuals have been recorded off Australia (Arnold 1997). During the winter, Dwarf Minke Whales are thought to move into warmer, lower latitudes to breed and give birth (Williamson 1975; Best 1985). They are generally smaller than Antarctic Minke Whales both at birth and once they reach maturity (Best 1982). Calves are approximately 1.92 m in length when they are born, following a gestation period of 10 months (Best 1985).

Dwarf Minke Whales commonly approach slow-moving or stationary ships, but unlike northern hemisphere Minke Whales, will usually avoid cruising ships (Skinner & Chimimba 2005). Studies off the northern region of the Great Barrier Reef have used external characteristics, such as colour patterns, to identify over 200 individuals between 1999 and 2001 which frequent the area (Arnold et al. 2005).

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 broadscale shifts in ecosystems (Moore 2008).

Use and Trade

This northern subspecies were heavily hunted in the past, and harvesting is ongoing in parts of the North Atlantic and North Pacific. There is currently no trade in this subspecies of Minke Whale in the assessment region as it has been largely excluded from the Antarctic catches.

Threats

Although the northern subspecies were hunted in the northern hemisphere under both commercial and scientific permits, this subspecies has not been hunted in the assessment region since 1993/94. As it occurs mainly outside the whaling grounds for Antarctic Minke Whales, it has never been substantially exploited.

This subspecies occasionally occurs inshore, where it is vulnerable to entanglement in fishing gear and shark nets. Although entanglement of Minke Whales in South African waters is considered uncommon compared to Humpback Whales (*Megaptera novaeangliae*) and Southern Right Whales (*Eubalaena australis*), occasionally Minke Whales have been recorded trapped in shark nets off the coast of Durban, KwaZulu-Natal (IWC 2001; Meÿer et al. 2011). Between 1981 and 2009, ten Minke Whales were recorded caught in shark nets off Durban and, of these, three were positively identified as Dwarf Minke Whales (IWC 2001; Meÿer et al. 2011).

The effects of anthropogenic climate change, resulting in decreased sea ice in the polar regions, may severely diminish the food resources of Minke Whales. The exact implications of these effects remain unclear; however, systematic monitoring of the compounding threats of climate change is warranted.

Similar to other cetaceans, collision with vessels, plastic marine debris and noise pollution, including the threats of seismic survey operations, may become accumulating minor threats to this species, but no quantitative species-specific data exists. Although apparently largely fish-eating, there is no documented conflict with commercial fisheries in or outside of the assessment region.

Current habitat trend: Possibly declining in habitat quality through climate change and noise pollution.

Conservation

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed *B. acutorostrata* on Appendix I, with the exception of West Greenland where it is listed in Appendix II. The Dwarf Minke Whale is fully protected in South African waters, and no specific conservation efforts have been identified. This subspecies would benefit from the development of methods to clearly distinguish it from Antarctic Minke Whales, during ship-based surveys. This could lead to a more comprehensive, systematic monitoring programme for Dwarf Minke Whales.

Recommendations for managers and practitioners:

- Design a monitoring scheme that can distinguish this subspecies from Antarctic Minke Whales, *B. bonaerensis*.
- Ensure that accidental catches (in fishing or shark nets), strandings or collisions of Dwarf Minke Whales are reported, and managed by the relevant authorities, and in the case of mortality, make certain that the remains are made available for ongoing scientific investigation of the life history and genetics of this species.

Research priorities:

- Investigation into the distribution, abundance and taxonomic status of Dwarf Minke Whales within the southern hemisphere.
- General ecology, including diet, distribution, reproduction, movement patterns and behaviour of this subspecies.
- Effect of the cumulative impacts of anthropogenic influences, such as pollution, commercial fishing practices and ecotourism on Dwarf Minke Whales.
- The identification of individuals using shoulder patches and colouration has proved to be a valuable means of assessing population structure and distribution of this species in the waters off Australia (Arnold et al. 2005), and may be equally useful in other parts of its range.

Encouraged citizen actions:

- Submit location sightings to conservation authorities, which will help in determining the spatial and temporal distribution of the population.
- Save electricity and fuel to mitigate CO_2 emissions and hence the rate of climate change.
- Report any stranding reports to the relevant local authorities.
- When participating in whale/dolphin watching tours, ensure regulations are followed.

Data Sources and Quality

Table 2. Information and interpretation qualifiers for the Dwarf Minke Whale (*Balaenoptera acutorostrata*) assessment

Data sources	Indirect information (literature, unpublished, expert knowledge)
Data quality (max)	Suspected
Data quality (min)	Suspected
Uncertainty resolution	Expert consensus
Risk tolerance	Evidentiary

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