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                                            Balaenoptera bonaerensis\r\n

    Antarctic Minke

Whale, Dark-shoulder Minke Whale\r\n
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                                                  Profile\r\n\r\nFor information to assist regulatory considerations, refer to Policy
     SPRAT\r\n
Statements and Guidelines, the Conservation Advice, the Listing Advice and/or the Recovery Plan.
\r\n\r\n\r\n\r\n \r\n EPBC Legal Status and Documents\r\n \r\n \r\n Top\r\n \r\n\r\n\r\nEPBC Act
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Conservation Advice\r\n\t\t\r\n\t\t\r\n\t\t\tThere is no approved Conservation Advice for this
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Listing Advice for this species\r\n\t\t\r\n\t\t\r\n\t\t\r\n
Plans\r\n\t\t\r\n\t\t\r\n\t\t\There is no adopted or made Recovery Plan for this species\r\n
             \r\n\t\t Adopted/Made Threat Abatement Plans\r\n\t\t\r\n\t\t\r\n\t\t\r\n\t\t\t\
\r\n\t\t\tDepartment of the Environment and Energy (2018). Threat Abatement Plan for the impacts of
marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018). Canberra, ACT:
Commonwealth of Australia. Available from:
http://www.environment.gov.au/biodiversity/threatened/publications/tap/marine-debris-2018. In effect
under the EPBC Act from 21-Jul-2018.\r\n\t\t\t\t\r\n\t\t\t\ \r\n\t\t\t\r\n
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Plans\r\n\t\t\r\n\t\t\\r\n\t\t\\r\n\t\t\\r\n\t\t\t\South-east marine region profile: A description of the
ecosystems, conservation values and uses of the South-east Marine Region (Commonwealth of Australia,
2015) [Information Sheet].\r\n\t\t\t\r\n\t\t\ \r\n\t\t\r\n
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Guidelines\r\n\t\r\n\t\r\n\t\ \r\n\t \r\n\t Australian National Guidelines for Whale and Dolphin Watching
2017 (Department of the Environment and Energy, 2017) [Admin Guideline].\r\n\t
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Guidelines on the Interaction between offshore seismic exploration and whales (Department of the
Environment and Water Resources (DEW), 2007) [Admin Guideline].\r\n\t
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Federal Register of Legislative Instruments\r\n\t\r\n\t\t\tMigratory:Environment Protection and
Biodiversity Conservation Act 1999 - Amendment to the List of Migratory Species (03/12/2002)
(Commonwealth of Australia, 2002d) [Legislative Instrument]Threat Abatement Plan:Instrument under
section 270B of the Environment Protection and Biodiversity Conservation Act 1999 to make a Threat
Abatement Plan (Commonwealth of Australia, 2018i) [Legislative Instrument]\r\n
                                                                          Non-statutory Listing
Status\r\n\t \r\n\t IUCN:\r\n\t\t\t\t\t\t\tListed as Near Threatened\r\n\t\t\t\ (Global Status: IUCN Red
Naming\r\n \r\n \r\n Top\r\n \r\n\r\n\r\nScientific name\r\n
                                                           \r\n
                                                                    Balaenoptera bonaerensis
             \r\n Family\r\n
                                        Balaenopteridae:Cetacea:Mammalia:Chordata:Animalia\r\n
[67812]\r\n
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                                Distribution Map\r\n \r\n \r\n Top\r\n \r\n\r\nDistribution
                   \r\n\t\tThe distribution shown is generalised from the Departments Species of National
map\r\n
Environmental Significance dataset. This is an indicative distribution map of the present distribution of the
species based on best available knowledge. Some species information is withheld in line with sensitive
species polices. See map caveat for more information.\r\n\r\n
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Illustrations\r\n \r\n \r\n Top\r\n \r\n\r\n\r\n\r\nIllustrations\r\n
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            Other Links, Including Superseded Commonwealth Documents\r\n
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                     Commonwealth of Australia (2002d). Environment Protection and Biodiversity
Conservation Act 1999 - Amendment to the List of Migratory Species (03/12/2002). F2007B00765.
Canberra: Federal Register of Legislative Instruments. Available from:
http://www.comlaw.gov.au/Details/F2007B00765.\r\n
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                                                        Department of the Environment and
Heritage (2005e). Australian National Guidelines for Whale and Dolphin Watching. Available from:
http://www.environment.gov.au/resource/australian-national-guidelines-whale-and-dolphin-watching-
                 Department of the Environment and Heritage (2006br). Balaenoptera bonaerensis in
2005.\r\n
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Species Profile and Threats (SPRAT) database. Canberra: DEH. Available from:
http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=67812.\r\n \r\n
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updates can be received via the Communities for Communities newsletter and the EPBC Act
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designed to provide statutory, biological and ecological\r\ninformation on species and ecological communities, migratory species, marine\r\nspecies, and species and species products subject to international trade and\r\ncommercial use protected under the Environment Protection and Biodiversity\r\nConservation Act 1999 (the EPBC\r\nAct). It has been compiled from a range of sources including\r\nlisting advice, recovery plans, published literature and individual experts.\r\nWhile reasonable efforts have been made to ensure the accuracy of the\r\ninformation, no guarantee is given, nor responsibility taken, by the\r\nCommonwealth for its accuracy, currency or completeness. The Commonwealth\r\ndoes not accept any responsibility for any loss or damage that may be\r\noccasioned directly or indirectly through the use of, or reliance on, the\r\ninformation contained in this database. The information contained in this\r\ndatabase does not necessarily represent the views of the Commonwealth. This\r\ndatabase is not intended to be a complete source of information on the\r\nmatters it deals with. Individuals and organisations should consider all the\r\navailable information, including that available from other sources, in\r\ndeciding whether there is a need to make a referral or apply for a permit or\r\nexemption under the EPBC\r\nAct.\r\n\r\nCitation: Department of the Environment\r\n(2022).\r\nBalaenoptera bonaerensis in Species Profile and Threats Database,\r\nDepartment of the Environment,\r\nCanberra.\r\nAvailable from:\r\nhttps://www.environment.gov.au/sprat.\r\nAccessed Tue, 18 Jan 2022 20:31:18 +1100.\r\n\r\n\r\n\r\n\r\nWhere available the sections below provide a biological profile for the species. Biological profiles vary in age and content across species, some are no longer being updated and are retained as archival content. These profiles are still displayed as they contain valuable information for many species. The Profile Update section below indicates when the biological profile was last updated for some species. For information to assist regulatory considerations, please refer to Conservation Advice, the Recovery Plan, Policy Statements and Guidelines.\r\n\r\n\r\n\r\n\r\n \r\n  $r\n$ Australian and State/Territory Government Legal Status\r\n \r\n  $r\n$ Top\r\n  $r\n$  $r\n$ current conservation status of the Antarctic Minke Whale, Balaenoptera bonaerensis, under Australian Government legislation and under international conventions is as follows:\nNational: Listed as a Cetacean and as a Migratory species under the Environment Protection and Biodiversity Conservation Act 1999.\n\n\r\n \r\n \r\n  $r\n$ Taxonomy\r\n  $r\n$  $r\n$  $r\n$ Top\r\n \r\n  $r\n$ Scientific name: Balaenoptera bonaerensis\nCommon name: Antarctic Minke Whale\nOther names: Pike Whale; Ordinary Minke WhaleUntil recently, only one species of Minke Whale was thought to exist, referred to as B. acutorostrata (Lacépède 1804). There are now two generally accepted species, the Common Minke Whale (B. acutorostrata) and the Antarctic Minke Whale (B. bonaerensis) (Rice 1998).\n\r\n \r\n \r\n  $r\n$  $r\n$ Description\r\n  $r\n$  $r\n$ Top\r\n  $r\n$  $r\n$ Antarctic Minke Whale is more robust than the other large rorquals (large baleen whales). The rostrum of the Antarctic Minke Whale is very narrow and pointed, with a single ridge on the head (Perrin & Brownell 2002). The dorsal fin is tall and falcate (sickle-shaped) and positioned relatively far forward on the posterior third of the body (Perrin & Brownell 2002).\nThe Antarctic Minke Whale has a dark bluish-grey back, sharply contrasting the pale grey to white flanks and belly (Shirihai 2002). The lateral colouration is complex, including a crescent-shaped grey streak that extends up each side of the animal, above the flipper insertion and towards the dorsal midline where they meet (Best 1985). A pair of grey streaks extend posteriorly (towards the back) for about 0.6 m from the blowhole (Best 1985). The flippers are slim and pointed, with no white blaze on the upper surface. Some individuals have a two-tone light grey colour on their flippers. Both flipper colour patterns can be present in an individual (Best 1985). The underside of the flippers and the tail flukes is white (Shirihai 2002). Antarctic Minke Whales have asymmetrically coloured baleen, with the right side series having a larger number of white plates anteriorly than the left (Best 1985).\nCalves are born at about 2.8 m in length, and grow at a rate of approximately 1 cm per day while suckling (Best 1982; Ivashin & Mikhalev 1978; Ohsumi & Masaki 1975). The maximum length of Antarctic Minke Whales appears to be around 9.8 m (Ohsumi & Masaki 1975).\nAntarctic Minke Whales are not gregarious and tend to swim alone or in pairs, although large feeding groups of up to 400 individuals may form in the higher latitudes (Perrin & Brownell 2002). Immature Antarctic Minke Whales males may be more solitary than mature males, at least at higher latitudes (Perrin & Brownell 2002). Minke whales are known to be curious, often approaching boats from a distance (Perrin & Brownell 2002).\n\r\n \r\n \r\n  $r\n$ Top\r\n Antarctic Minke Whales have been Distribution\r\n  $r\n$  $r\n$ \r\n \r\n \r\n recorded from all States but not in the Northern Territory (Bannister et al. 1996). The paucity of records of the colouration of stranded Minke Whales in Australia obscures the determination of the range of Antarctic Minke Whales along the Australian coast, although they are known to occur north to 21° S off the east coast (Bannister et al. 1996). The distribution up the west coast of Australia is currently unknown. Antarctic Minke Whales probably do not migrate as far north as Dwarf Minke Whales (to 11° S) (Bannister et al. 1996; Perrin

& Brownell 2002), but records for Brazil suggest they may move up to 8° S (Zerbini et al. 1997). The southern distribution of Antarctic Minke Whales extends down to approximately 65° S in the Australian Antarctic Territory (Thiele & Gill 1999). In the high latitudinal winter breeding grounds in other regions, Antarctic Minke Whales appear to be distributed off the continental shelf edge (Best 1985; Zerbini et al. 1997), suggesting a similar winter distribution could be expected for Australian Antarctic waters.\nThe current extent of occurrence for Antarctic Minke Whales is estimated to be greater than 20 000 km<sup>2</sup> (based on the Australian Economic Exclusion Zone (200 nautical mile, down to about 65° S) (Peddemors & Harcourt 2006, pers. comm.). Increasing ocean temperatures predicted by climate change scenarios could potentially decrease the extent of occurrence, with warmer water extending southwards along both coasts and restricting the northward range of this species. There are no data to indicate past declines in the Antarctic Minke Whale extent of occurrence, nor for any potential future changes in its extent of occurrence.\nThe area of occupancy of Antarctic Minke Whales cannot be calculated due to the paucity of confirmed records off Australia. The area of occupancy could potentially decline in the future as a result of interactions between Antarctic Minke Whales and fisheries or direct-take vessels.\nAntarctic Minke Whales are currently considered to occur in one location, although taxonomic confusion within the Minke Whales and possible future taxonomic revision of this genus may lead to changes in understanding the stock structure of the Antarctic Global Distribution\r\n Minke Whale. $\n\r\n \ \r\n \$ \r\n  $r\n$  $r\n$ The Antarctic Minke Whale is found throughout the Southern Hemisphere from 55° S to the Antarctic ice edge during the austral summer (Perrin & Brownell 2002). Although some individuals have been recorded to over-winter in the Antarctic (Thiele & Gill 1999), most retreat to breeding grounds at midlatitudes between 30° S and 10° S (Perrin & Brownell 2002). In these areas, the distribution of the Antarctic Minke Whale is mainly oceanic, beyond the continental shelf break (Best 1985; Perrin & Brownell 2002; Zerbini et al. 1997). \nIn 1989 the global population of Minke Whales in the Southern Hemisphere was estimated at 761 000 individuals ( $\pm 5\%$ ) (IWC 2002). However, the reliability of this estimate is uncertain given recent revisions of the methodology of these surveys, and taxonomy of the Minke Whales (IWC 200). A review is currently being undertaken by the Scientific Committee of the International Whaling Commission (IWC 2001b, 2002).\nAntarctic Minke Whales have undergone extensive population reductions, with approximately 14 600 whales killed off the breeding grounds off Brazil (Zerbini et al. 1997); 1113 off Durban, South Africa (Best 1982); and over 98 200 in the Antarctic feeding grounds between 1957 and 1987 (Horwood 1990). Japan reportedly took over 7000 Antarctic Minke Whales under research permits issued between 1987\u00962004, under the terms of the whaling Convention (Perrin & Brownell 2002). From 2005, the official number of Antarctic Minke Whales allowed to be taken under scientific permits was set at 850  $\r\n \r\n$  $r\n$ Surveys Conducted\r\n  $\pm 10\%$  per annum.\n\r\n \r\n  $r\n$ Antarctic Minke Whales have not been well surveyed within mainland Australian waters. Their distribution off Australia is primarily assumed from incidental sightings and beach-cast animals. The Antarctic Minke Whale has been the target of directed sighting surveys in the Antarctic south of 60° S, run annually by the IWC from 1978\u009679 to the present. These surveys have collected a substantial amount of data on the summer feeding grounds. Several additional surveys have been conducted through the Southern Ocean Cetacean Ecosystem Program (SOCEP) of Deakin University (Thiele et al. 2000). The region south of 60° S is therefore considered to be well surveyed and the distribution and abundance of Antarctic Minke Whales in these waters can be considered accurate. $\n\r\$   $\r\$ Information\r\n  $r\n$ Top\r\n  $r\n$ \r\n No population estimates are available \r\n for Antarctic Minke Whales in Australian waters.\nSimilarly, no information on population trends exist for the Antarctic Minke Whale. Although Antarctic Minke Whales have never been exploited off Australia (Bannister et al. 1996), whaling in the Antarctic areas administered by Australia may have reduced the population size. Continued whaling, albeit at low levels, may reduce the population size in future years.\nExtreme fluctuations in population numbers are unlikely within Australian waters as the reported latitudinal range (21° S to 65° S) for this species suggests that both the breeding and feeding grounds occur within Australian territory. Data from South Africa and Brazil suggest there may be seasonal shift in the extent of occurrence and area of occupancy, with animals present off Durban (29°53' S) from April to at least September (Best 1982), and off Brazil (7° S) between June and December (Williamson 1975). In the Antarctic, Minke Whale density increases from November, peaks in January, and then declines in February (Shimadzu 1980), although there are differences in timing between the sexes (Kasamatsu & Ohsumi 1981) and age classes, with the majority of the mature population of Antarctic Minke Whales distributed south of 40° S in summer (Gambell et al. 1975).\nThe generation length for Australian Antarctic Minke Whales is unknown, although Best and colleagues (2004b) estimated it at approximately 15 years based on the life history data of South African specimans.\n\r\n \r\n \r\n \r\n \r\n Land Tenure of Populations\r\n

Top\r\n  $r\n$ All cetaceans are protected within The Australian Whale Sanctuary under the EPBC Act. The Sanctuary includes all Commonwealth waters from the 3 nm state waters limit out to the boundary of the Exclusive Economic Zone (out to 200 nm and further in some places). Antarctic Minke Whales are also subject to IWC regulations and protected within the Indian Ocean Sanctuary and Southern Ocean Sanctuary.\n\r\n \r\n \r\n \r\n Habitat\r\n  $r\n$  $r\n$  $r\n$ Top\r\n Antarctic Minke Whales appear to occupy primarily offshore and pelagic habitats within cold temperate to Antarctic waters between 21° S and 65° S (Bannister et al. 1996; Thiele & Gill 1999). On the winter breeding grounds, Antarctic Minke Whales appear to occupy pelagic waters exceeding 600 m depth (Zerbini et al. 1997). During the summer, they head for higher latitudes to feed. Antarctic Minke Whales occur well into the sea ice, with winter records extending 350 km south of the ice-edge (Thiele & Gill 1999). During winter, eight of nine Antarctic Minke Whale sightings occurred in ice heavier than 8/10 in concentration (Thiele & Gill 1999).\nA survey conducted in 1996 found that Antarctic Minke Whales are unevenly distributed in the Australian Antarctic Territories. They were found more frequently west of 120° E where they were concentrated south of, and at, the Southern Boundary of the Antarctic Circumpolar Current (Thiele et al. 2000). Between 120° E and 150° E Antarctic Minke Whales were almost exclusively sighted in a thin band of colder Antarctic Coastal Current water near the ice edge (Thiele et al. 2000). This uneven distribution was ascribed to a southward intrusion of warmer water east of 100° E during the survey period, leading to a reduction in the abundance of krill in these areas and consequently to lower Antarctic Minke Whale abundance (Thiele et al. 2000).\n\r\n \r\n \r\n \r\n \r\n Life Cycle\r\n Extremely limited life history data exist for the Antarctic Minke Whale off  $r\n$  $r\n$ Top\r\n  $r\n$ Australia. The following data comes primarily from South African and Brazilian specimens taken in coastal whaling, and information gathered in the Antarctic (Ohsumi & Masaki 1975).\nMale Antarctic Minke Whales reach sexual maturity at about 7.3 m and eight years, females at 7.9 m and between seven to eight years (Perrin & Brownell 2002). The maximum age is unknown, but may exceed 50 years (Kato 1982). Natural mortality includes predation by Killer Whales (Orcinus orca), with one estimate suggesting that Antarctic Minke Whales comprise 85% of the diet of Killer Whales in the Southern Oceans (Stewart & Leatherwood 1985).\nMating occurs from June through December, with a peak in August and September (Best 1982). Gestation lasts about 10 months and calving peaks occur during late May and early June in warmer waters north of the Antarctic Convergence (Stewart & Leatherwood 1985). There is usually only one calf, although twins (0.56%) and triplets (0.03%) do occur (Kato 1982). Newborn Antarctic Minke Whales are approximately 2.8 m (Stewart & Leatherwood 1985), growing at about 1 cm per day (Best 1982) while suckling on the nutritious milk. Weaning occurs about four to five months later when the calf has reached approximately 5.7 m in length (Stewart & Leatherwood 1985). Antarctic Minke Whales ovulate about four months after calving, leading to a 14 month calving cycle (Best 1982). It is postulated that a prolonged mating season allows females to continue this rapid reproductive capacity without losing synchrony with the availability of suitable males in the lower latitudes (Best 1982). However, 21.6% of female Antarctic Minke Whales caught in the breeding grounds off Durban, South Africa, were reproductively 'resting' and not lactating, suggesting that the reproductive rate for Antarctic Minke Whales is likely to be around 78.4% (Best 1982). The rate of calf mortality is not known.  $\n\r\n \r\n \r\n \r\n$  $r\n$ Feeding\r\n Mature Antarctic Minke Whales feed primarily on the Antarctic Krill \r\n Top\r\n  $r\n$  $r\n$ (Euphausia superba), although some smaller krill species (E. spinifera and E. crystallorophias) and occasional copedods are also consumed (Ohsumi et al. 1970; Stewart & Leatherwood 1985). They do not appear to feed much whilst in the breeding grounds of lower latitudes (<20% off South Africa: Best 1982; <3% off Brazil: Williamson 1975), although when they do feed their diet remains krillbased (Best 1982). The distribution of newly weaned calves is unknown, but likely to be in lower latitudes. As the Antarctic Krill is not present in lower latitudes, this species is unlikely to be an important part of the diet of weaned calves. Rather, weaned calves probably feed on copepods, small euphausiids or fish (Best 1982). The summer distribution of immature Minke Whales north of 40° S (and particularly north of 30° S) in the south-western Indian Ocean also supports this hypothesis (Gambell et al. 1975). \nObservations of feeding Antarctic Minke Whales have not been reported in detail. Euphausiids (krill) are pelagic and tend to occur in the upper layers of Antarctic waters (Thomas & Green 1988), suggesting that Antarctic Minke Whales do not require deep \r\n diving to forage.\n\r\n \r\n \r\n \r\n Movement Patterns\r\n  $r\n$ No daily patterns of movement have been described for Antarctic Minke Whales, but this species does undergoe extensive migration between the summer Antarctic feeding grounds and winter sub-tropical to tropical breeding grounds. Antarctic Minke Whales have been reported up to 350 km south of the ice edge during winter, suggesting that some portions of the population may over-winter in higher latitudes (Perrin & Brownell 2002; Thiele & Gill 1999).\nAnalysis of whaling data indicates that most of the

male Antarctic Minke Whales present in the higher latitude Antarctic whaling grounds are mature males, whereas the mature females do not arrive until later in the season, suggesting that sexual segregation occurs in these areas (Kato 1982; Kasamatsu & Ohsumi 1981; Masaki 1979; Ohsumi et al. 1970). Similar sexual segregation has been identified in the breeding grounds of lower latitudes, where sexually immature Antarctic Minke Whales comprised the larger proportion of the catch off Durban, South Africa, during the early part of the season (April and May) (Best 1982). From June, a large proportion of the Antarctic Minke Whale catch consisted of mature males, while the proportion of immature males rapidly declined. Although mature females also began to form a large proportion of the catch, particularly from July onwards, males outnumbered females two to one, until September when greater parity was reached (1.38 to 1, respectively) (Best 1982). These data, plus those from Brazil (Williamson 1975), suggest that there is segregation by sexes during the winter migration and, for males at least, there may also be segregation by size (Best 1982).\nThe winter distribution of Antarctic Minke Whales on the low latitudinal breeding grounds is predominately composed of solitary individuals. They then appear to form groups of up to about five individuals in spring, returning to swimming singly again in November prior to their south-bound migration (Best 1982; Williamson 1975). In the Antarctic, the group size of Antarctic Mike Whales appears to increase with whale density (Horwood 1981; Ohsumi et al. 1970). However, there appears to be some variation in distribution of the larger groups as only single animals were predominantly seen (66.7% of all groups seen) between 40° S and 50° S, dropping to 26.4% of sightings between 50° S and 60° S when pairs of whales were predominantly seen (Ohsumi et al. 1970). Although Ohsumi and colleagues (1970) never saw schools larger than six individuals south of 40° S, Best & Butterworth (1980) recorded a maximum school size of 60 Antarctic Minke Whales in IWC Area IV south of 60° S, The average group size in this area was 2.41 animals, \r\n with single individuals most commonly seen.\n\r\n  $r\n \r\n$ \r\n Survey Guidelines\r\n  $\r\n \r\n$ Distinctiveness\nAntarctic Minke Whales are difficult to Top\r\n  $r\n$ spot at a distance because of their small inconspicuous blow and brief surfacing behaviour. When seen, their small size, upright falcate dorsal fin, pointed rostrum and wash of grey over the back posterior to the flipper enable identification (Jefferson et al. 1993). The chief distinguishing feature between Antarctic and Dwarf Minke Whale is the lack of the white colouration on the flipper extending onto the shoulder in the former species (Best 1985).\nDetectability\nAntarctic Minke Whales are known for their curiosity, often coming from afar to cross the bow or run with the vessel. Rapidly moving Antarctic Minke Whales have a characteristic 'rooster-tail' of spray as they break the water surface in an almost 'porpoising' action (Peddemors 2006, pers. obs.).\nIn the Antarctic, feeding Antarctic Minke Whales are easy to approach, but they will often evade ships by \"running\", \"diving\", and by a \"low profile\" behaviour in which whales barely break the surface, blowing inconspicuously (Horwood 1981). Dives typically last only a few minutes, possibly because Antarctic Minke Whales don't need to dive deeply for food (Martin 1990). Blowing may occur as a sequence of up to eight breaths at intervals of under a minute (Martin 1990). Blows are low and inconspicuous. Antarctic Minke Whales may arch the tail stock before a long dive, but they do not raise their flukes above the water (Jefferson et al. 1993). Detection of Antarctic Minke Whales is therefore quite difficult, particularly between the ice floes in the Antarctic. When the ice becomes very concentrated and the Antarctic Minke Whales are forced to breath in extremely narrow leads or gaps between the floes, the whales surface vertically with the rostrum pointing up as they breath (known as 'spyhopping') (Ensor 1989; Taylor 1957; Thiele & Gill 1999).\nRecommended Methods\nCetacean surveys are constrained by several important factors including weather (sea state and light conditions), area to be covered, aim of the survey (abundance estimate vs ecological studies), the activities of the animals themselves (traveling, resting, surface vs deep feeding), and the type of craft used for the survey.\nSurveys for oceanic cetaceans such as Antarctic Minke Whales have primarily been boat-based transects using the Australian Antarctic Division ships through the Deakin University SOCEP initiative, plus vessels linked to the IWC surveys for whale abundance. There are almost no dedicated cetacean surveys conducted in continental Australian waters. During non-dedicated surveys, a minimum requirement is to record all cetacean sightings encountered with corresponding GPS position, environmental data (sea conditions and habitat) and behavioural observations. From fishing vessels, all incidentally caught animals should be recorded with corresponding GPS position, and basic biological information from dead animals should be obtained (V. Peddemors 2006, pers. comm.).\nThe sound produced by Antarctic Minke Whales appears to be very intense, and could be used to assist in tracking Antarctic Minke Whale abundance, distribution and movements (Perrin & Brownell 2002; Schevill & Watkins  $r\n \r\n$ \r\n  $r\n$ Threats\r\n \r\n  $r\n$ Top\r\n Globally, whaling activities have been the biggest threat to Antarctic Minke Whales. Coastal whaling operations caught hundreds of Antarctic Minke Whales off South Africa and South America from the mid-1960s (Best 1982; Williamson 1975), although none were caught from Australian land stations (Bannister et

al. 1996). In the Southern Ocean, the Antarctic Minke Whales were largely ignored in the early days of modern industrialised whaling because of their small size, but as the larger rorguals (baleen whales) were successively depleted, attention of the whalers turned to the Antarctic Minke Whale (Perrin & Brownell 2002). Antarctic Minke Whales, therefore, only became a major commercial target in the Antarctic from the early 1970s. After 1979, the IWC only allowed Minke Whales to be taken by factory-ship whaling operations, resulting in annual catches ranging to about 8000 in the Antarctic (Horwood 1990). As of the 1985\u00b1009686 Antarctic season, all commercial whaling was banned under an IWC moratorium (Perrin & Brownell 2002). However, takes of approximately 400 Antarctic Minke Whales are permitted per year under a scientific whaling permit.\nPotential future threats could include a resumption of commercial whaling, as well as direct disturbance from seismic and/or defence operations, collision with large vessels, and entanglement in fishing gear (Bannister et al. 1996).\nPollution, including increasing amounts of plastic debris at sea, oil spills and dumping of industrial wastes into waterways and the sea, leading to bio-accumulation of toxic substances in body tissues, could be considered an increasing threat to the Antarctic Minke Whale, particularly on the breeding grounds in lower latitudes (Aguilar et al. 2002).\nThe prey of the Antarctic Minke Whale, which is predominently euphausiids (krill), are harvested in the Antarctic (Martenson et al. 1994). However, the krill fishery is controlled by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) under its ecosystem-based approach to fisheries management, which should prevent over-fishing and potential competition with Antarctic Minke Whales for krill resources.\n\r\n  $r\n \r\n$ Threat Abatement and Recovery\r\n \r\n \r\n Top\r\n \r\n  $r\n$ Bannister and  $r\n$ colleagues (1996) recommend the following actions be taken to better understand the threats to the Antarctic Minke Whale:\nDetermine the distribution and monitor abundance of Antarctic Minke Whales in Australian waters. This should be done via a series of aerial surveys and, perhaps, a vessel-based sighting program to monitor numbers. There should be consideration to pool existing sightings and strandings data to locate possible concentration areas.\n Reporting and salvage of Antarctic Minke Whale specimens incidentally caught or stranded, ensuring specimens are made available to appropriate scientific museums to enable collection of life history data and tissue samples for genetic analysis.\n Determine nursery/calving areas to assess the importance of Australian waters for reproduction in the Antarctic Minke Whale, and implement relevant management protocols. \n Determine the main winter feeding grounds of Antarctic Minke Whales and whether there may be any anthropogenic impact. \n Determine the stock structure of the Antarctic Minke Whale in Australian waters and then compare this with other major localities in the Southern Hemisphere. \n Ensure adequate protection of the species and its resources in Australian and nearby waters.\n Conduct disentanglement workshops, particularly for offshore fishers.Current projects initiated to address these threats include a requirement to report all incidental catches made within the Australian Exclusive Economic Zone (Bannister et al. 1996).\n\r\n \r\n \r\n Mitigation  $r\n$  $r\n$ Approach\r\n  $r\n$ \r\n Top\r\n  $r\n$  $r\n$ \r\n  $\r\n \r\n$ \r\n  $r\n$  $r\n$ Management Documentation\r\n  $r\n$  $r\n$ The Action Plan for  $r\n$ Top\r\n  $r\n$  $r\n$ Australian Cetaceans (Bannister et al. 1996) and the Review of the Conservation Status of Australia's Smaller Whales and Dolphins (Ross 2006) provide brief overviews of the species and some management recommendations. 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