PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. PROPOSAL: inclusion of *Balaenoptera bonaerensis* on Appendices I and II.

B. PROPONENT: Government of Australia

C. SUPPORTING STATEMENT

1. Taxon

1.1 Class	Mammalia
1.2 Order	Cetacea
1.3 Family	Balaenopteridae
1.4 Genus and species	*Balaenoptera bonaerensis* (Burmeister, 1867)
1.5 Common names	English: Antarctic Minke Whale Spanish: Rorcual enano del Antarctica French: Petite Rorqual de l'Antarctique

2. Biological data

Balaenoptera bonaerensis is the smallest member of the genus *Balaenoptera*. Maximum recorded lengths are 10.7m for the female and 9.8m for the male, with a weight of ten tonnes (IUCN, 1991). Maximum age seems to be something less than 50 years (Stewart and Leatherwood, 1985).

B. bonaerensis are generally easy to distinguish from the larger rorquals. The head is extremely pointed, viewed both from the side and from above, and the median head ridge is prominent. The dorsal fin is tall, recurved, and located about two-thirds of the way back from the snout tip. There are 30 to 70 moderately short ventral pleats and 231 to 360 pairs of white to greyish baleen plates.

The *B. bonaerensis*'s coloration is distinctive: dark grey dorsally and white beneath, with steaks or lobes of intermediate shades on the sides. The *B. bonaerensis* is distinguishable from the Common Minke Whale (*B. acutorostrata*) found in the Northern Hemisphere which carries a distinctive light marking of brilliant white across each flipper while the marking is usually not present on *B. bonaerensis*.

Like other cetaceans, *B. bonaerensis* are 'K strategists' in that they are large, long-lived, slow to mature, have fewer, larger offspring, high parental investment in young, and have evolved in an environment with little (temporal and stochastic) variation. As an Order, cetacean populations are thus not equipped to cope with and rebound from:

?? sudden declines in population numbers, as has happened over the past two centuries because of unsustainable hunting; or
?? detrimental environmental impacts on habitat due to anthropogenic factors from pollution, climate change, increased fishing effort, shipping traffic etc. as is currently the case.

B. bonaerensis feed predominantly on krill (*Euphausia superba, E.spinifera, E. crystallorphia*).

2.1 Distribution
In general Minke Whales move between summer feeding grounds in polar waters and wintering grounds in warmer water, but overall the species appears to be widely distributed in all seasons and to migrate in a manner hard to predict from year to year (IUCN, 1991).

B. bonaerensis moves from temperate waters south to the Antarctic continent in spring and summer, and return in autumn and winter. They have a circumpolar distribution between Antarctica and as far north as Surinam and Madagascar (Minke whales, 2000). *B. bonaerensis* have been reported on the Brazilian whaling grounds as far north as 5 degrees South.

2.2 Population
The Scientific Committee of the International Whaling Commission (IWC) at the 2001 meeting stated that there were fewer minke whales in the southern oceans than it had previously thought (IWC, 2000a). Saying the estimates were now probably 'appreciably lower', the Scientific Committee said it could not provide any reliable estimates of current minke whale abundance in the region. In addition, it is important to note that the dwarf minke whale is included in any population estimates of *B. bonaerensis*, although it is genetically distinct and may actually even represent a third species.

2.3 Habitat
B. bonaerensis are pelagic species, found both inshore and offshore, in waters both polar, tropical and temperate (Cetacean Organisation, 2001). The species can approach close to shore and enter bays, inlets and estuaries (IUCN, 1991). *B. bonaerensis* feed on the edge of the sea-ice. Little is known about *B. bonaerensis* breeding habitat.

2.4 Migrations
B. bonaerensis migrate in a manner hard to predict from year to year (IUCN, 1991).

3. Threat data

3.1 Direct threats to the populations
Although *B. bonaerensis* appear to have been taken in small numbers in many parts of their range from the earliest times, they did not become a major target for modern whalers until about 1970 in the Antarctic, following depletion of the larger species (IUCN, 1991).

Between 1972 and 1987 an average of 6054 *B.bonaerensis* were taken annually by IWC members (IWC SC Reports 1974-1988) with the maximum recorded take of 8365 individuals in 1976/77 (IWC, 1978).

Following the adoption of the moratorium on commercial whaling under the ICRW in 1986 Japan commenced its scientific whaling program pursuant to Art. VIII of the ICRW. *B. bonaerensis* is currently the main target species of the Japanese whale research program. Under the International Convention on the Regulation of Whaling individual Contracting Governments may permit their nationals to take whales for scientific research. Currently, Japanese nationals take approximately 440 animals annually from the Southern Ocean as part of this program, and up a total of approximately 1000 animals globally per year. It is also unclear the extent of incidental deaths from Minkes struck, but lost.

Unregulated whale watching also places stress on *B. bonaerensis* individuals and groups. This is a rapidly growing industry that range states need to regulate, because at certain proximities and intensities, operators and tourists will interfere with critical breeding and socialising behaviour (Gordon, Moscrop, Carlson, Ingram, Leaper, Matthews and Young, 1998).

B. bonaerensis is also susceptible to pollution. The increasing volume of marine debris, particularly buoyant and synthetic items such as plastic, may threaten this species through the possibility of

entanglement and ingestion. Substantial volumes of rubbish discarded by humans have been found in the stomachs of stranded whales (Laist, Coe and O'Hara, 1999). Further, oil spills and the dumping of industrial wastes into waterways and the sea lead to bio-accumulation of toxic substances in the body tissues of the top predators, making such events dangerous to great whales (Cannella & Kitchener 1992; IWC, 2000b).

Chemical pollution, in particular the persistent organic pollutants including PCBs, DDTs, PCDDs, HCB dieldrin, endrin, mirex, PCDs, PBs, PEDEs, polcyclic aromatic hydrocarbons and phenalos as well as metals and their organic forms methyl-mercury and organotins are of concern for marine mammals in the marine environment. Many of these pollutants can cause immune suppression, making them more susceptible to prey depletion, habitat modification, environmental changes (including global warming or ozone depletion) or disease. Synergistic and cumulative effects must be considered in the assessment of any risk to individual species or populations. (Reijnders & Aguilar, 2002), Currently marine mammals in mid-latitudes (industrialised and intense agriculture use) of Europe, North America and Japan have the highest loads. However levels of organochlorines are declining in the mid latitudes and are predicted that in the near to midterm future the polar regions will become the major sinks for these contaminants. (Reijnders & Aguilar, 2002). Of the 2 million tonnes of PCBs that have been produced world wide, only 1% has reached the oceans at this stage. Around 30% has been accumulated in dump sites and the sediments of lakes, estuaries and coastal zones and future dispersal into the marine environment cannot be controlled (35% are still in use) The open ocean water serves as the final reservoir and sink for the worlds PCB production. (Reijnders 1996).

Levels of PCB and DDT have been detected in *B. bonaerensis* and appear to vary depending on geography and diet, with adult migrating to less polluted areas. (Reijnders & Aguilar, 2002)

3.2 Habitat destruction

At the 50th meeting of the IWC, the Scientific Committee identified "environmental change" as the looming threat to whale populations and their critical habitats. This meeting discussed the impact of climate change, chemical pollution, physical and biological habitat degradation, effects of fisheries, ozone depletion and UV-B radiation, Arctic issues, disease and mortality events and the impact of noise and resolved an ongoing work program for continued investigation (IWC, 1998).

3.3 Indirect threats

Global environmental change is an indirect threat to *B. bonaerensis.* Springer (1998) concluded that fluctuations in marine mammal populations in the North Pacific are entirely related to climate variations and change. One of the more important impacts of a changing climate on marine mammals is changes to the abundance of and access to prey. This has a particularly detrimental impact on marine mammals that feed from the top of the food chain, such as whales (IPCC, 2001).

Further, global warming appears to be related to reductions in sea ice: one study concludes that the Antarctic sea-ice receded by 2.8 degrees latitude (168 nautical miles) between 1958 and 1972 (de la Mare, 1997). This would have interfered with the feeding patterns, as well as altering the seasonal distributions, geographic ranges, migration patterns, nutritional status, reproduction success, and ultimately the abundance of marine mammals (Tynan and DeMaster, 1997).

3.4 Threats connected especially with migrations

While migrating between feeding and breeding grounds, *B. bonaerensis* are susceptible to shipping strikes. The increase in oceanic traffic increases the likelihood of collision with large vessels on shipping lanes in critical *B. bonaerensis* habitat beyond the edge of continental shelves.

Underwater noise pollution is often a direct threat to migrating cetaceans, given their reliance on sound for navigation through their highly developed echolocation systems. *B. bonaerensis* are particularly sensitive to low and moderate frequency sounds, from

approximately 12Hz to 8kHz (Richardson, Greene, Malme and Thomson, 1995). It is difficult to identify conditions under which *B. bonaerensis* is particularly sensitive, given the varying acoustic transmission conditions from shallow water to deep, and relative to the animal's position within a water column. However, a number of anthropogenic sound sources are known to produce underwater acoustics within the frequency range of *B. bonearensis*, and potentially within migratory routes.

For example, seismic operations may disturb the movements and natural activities of the species through the production of continuous, high-level, low-frequency (below 1kHz) sound (Würsig and Richardson, 2002). Most Baleen whales continue normal activity up to 150db re 1 ?Pa, but, as these levels are some 50+ dB above typical ambient noise levels, lower received levels may have subtle effects on surfacing and respiration (Richardson, et al, 1995).

Military activities that produce significant underwater sound pressure may also potentially interrupt whales' movements and natural activities, including critical migratory, feeding and breeding patterns. These sounds include those associated with underwater detonations of explosives, and the penetration of active sonar (Richardson, et al, 1995).

3.5 National and international utilisation

Under Article VIII of the International Convention for the Regulation of Whaling, Parties may permit their nationals to take whales for 'scientific research'. Currently, Japan permits its nationals to take 440 *B. bonaerensis* individuals annually from the Southern Ocean as part of this program.

4. Protection status and needs

4.1 National protection status

National legislation protecting the *B. bonaerensis* is mainly derived from international agreements.

4.2 International protection status

Articles 65 and 120 of the United Nations Convention on the Law of the Sea (UNCLOS) accords a special status to marine mammals, and specifically allows for more strict protection of marine mammals by coastal States or international organisations. Also in relation to cetaceans, Articles 65 and 120 oblige coastal States to work through appropriate international organisations for their conservation, management and study.

B. bonaerensis is protected from commercial whaling by the IWC, through its general moratorium on commercial whaling. Given uncertain stock analyses, the moratorium imposed a zero catch limit on every whale stock, effective from 1985/86. This limit is subject to annual review by the IWC. The IWC also protects whales, including *B. bonaerensis*, through the declaration of sanctuaries, to provide freedom from disturbance for migrating and breeding great whales that were once hunted to the brink of extinction. The IWC established the Indian Ocean Sanctuary in 1979, and the Southern Ocean Sanctuary in 1994. These sanctuaries are important zones of protection for whales.

International trade in *B. bonaerensis* products has been controlled by the listing of the species in CITES Appendix I. However, Iceland, Japan, Norway and Peru entered reservations against this listing, and are thus not bound.

In general terms, the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) relates to whale protection. CCAMLR applies to the Antarctic Convergence, a natural oceanographic boundary formed where the circulation of cold waters of the Antarctic ocean meets the warmer waters to the north. Although whales are not specifically referred to in the CCAMLR, its objective is the conservation of Antarctic marine living resources.

The Jakarta Mandate, an agreement implementing the Convention on Biological Diversity, 1992, in the marine environment, encourages a precautionary approach to resource management and promotes the adoption of ecosystem management principles. It also recognises that wide adoption and implementation of integrated marine and coastal area management are necessary for effective conservation and sustainable use of marine and coastal biological diversity.

4.3 Additional protection needs

There is uncertainty over the abundance of *B. bonaerensis* and the impact of commercial and 'scientific research' on the species. Additionally, the species is subject to a number of ongoing threats. Due to the species being a "K strategist" it will take longer periods of time to recover from any further impacts.

The main vehicle for the protection and conservation of *B. bonaerensis* is the International Convention for the Regulation of Whaling (ICRW) which establishes the moratorium on commercial whaling, and two regional whale sanctuaries (the Indian Ocean Sanctuary and the Southern Ocean Sanctuary).

In the event of a resumption in commercial whaling, the efficacy of the Convention on International Trade in Endangered Species of Wild Fauna (CITES) as a protection measure for whales would also be compromised. This is because a number of Parties with interests in commercial whaling have entered reservations against the listing of certain whale species, and are thus not bound by the Convention. Further, some of these Parties have regularly proposed the downlisting of great whales from Appendix I to Appendix II.

Under UNCLOS, Parties have an obligation to protect the marine environment within their exclusive economic zones and on the high seas in cases where they have jurisdiction. However, effective conservation for migratory species of cetaceans requires a consistent and coordinated approach to the development and application of conservation measures throughout the full range of a species' habitats, regardless of which jurisdictions they fall within. This includes important feeding, mating and calving sites and the migration routes between them.

Inclusion of *B. bonaerensis* on Appendix I and II of the Convention on the Conservation of Migratory Species of Wild Animals allows non-parties to the Convention to provide protection for the species, and participate in regional agreements ratified under the auspices of the Convention. This makes the protection measures more accessible than under other international agreements. *B. bonaerensis* would also benefit from such cooperative research and conservation actions. A listing under the CMS would also complement the current protection provided by the ICRW and CITES.

5. Range states

The range States for the *B. bonaerensis* include Argentina, Australia, Brazil, Chile, Falkland Islands (UK), New Zealand, South Africa, Kerguelen Island (France), Bouvet (Norway), Namibia, and Uruguay, of which all but Brazil and Namibia are Party to the Convention on the Conservation of Migratory Species of Wild Animals, 1979.

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