

Action Statement

Flora and Fauna Guarantee Act 1988

No. 242

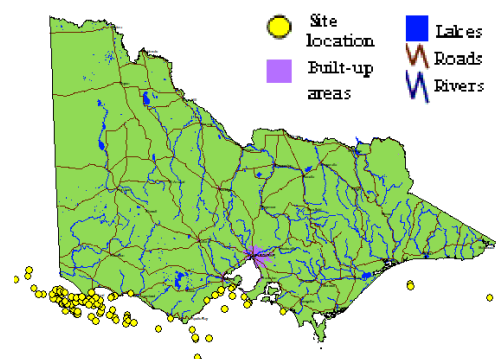
Blue Whale *Balaenoptera musculus*

Description and distribution

The Blue Whale (*Balaenoptera musculus*) is the largest animal known to have lived. It inhabits all oceans of the world, weighs more than 130 tonnes and is one of six species in the family Balaenopteridae. While not yet conclusively established, three subspecies are currently recognised. Two of the subspecies are 'true' Blue Whales: the Northern Hemisphere Blue Whale (*B. musculus musculus*) which is found in the northern hemisphere and averages 25 m in length, and the Southern Hemisphere Blue Whale (*B. musculus intermedia*) which occurs in the southern hemisphere and averages 27 m in length. The third subspecies, the Pygmy Blue Whale (*B. musculus brevicauda*), occurs in waters of the southern Indian Ocean, eastern South Atlantic Ocean and western South Pacific Ocean, and averages 22 m in length.

The Blue Whale has a long streamline shape, a small dorsal fin positioned far back on the body, pointed flippers, and a single prominent ridge along the upper surface of the head ending in a prominent knob around the blowholes. Coloration varies from grey to blue, with varied mottled pigmentation on the back and sides. Like all rorqual whales, the Blue Whale has pleated grooves along its throat and ventral grooves. It feeds close to the surface, and these structures enable the whale to take large volumes of water and krill into its mouth. By closing its mouth, the whale then expels the water past baleen plates (a wall of black fibrous keratin plates) which hang on the upper jaw and filter out food from the seawater.

The Blue Whales found in Victorian waters between November and May are generally Pygmy Blue Whales (AVW 2004).



Distribution in Victoria
(Victorian Fauna Database DSE 2007)

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Habitat

Southern Hemisphere Blue Whales breed and calve in warm water (latitude 20° S) during the southern hemisphere winter. They then migrate to cold Antarctic waters (60 - 70° S) during the southern hemisphere summer to feed, mainly on krill.

Pygmy Blue Whales occur only in the southern hemisphere (southern Indian Ocean, eastern South Atlantic Ocean and western South Pacific Ocean). They do not migrate as far south as Southern Hemisphere Blue Whales, and in summer are generally found north of latitude 55 °S (DEH 2005). They may be present in Victorian waters between November and May where they feed on krill that thrive in the nutrient-rich waters of the Bonney Upwelling (Gill 2002).

Life history and ecology

Blue Whales are long-lived: the life expectancy of 'true' Blue Whales is up to 90 years while Pygmy Blue Whales live for up to 50 years. Blue Whales have a low reproductive rate of one calf every 2 - 3 years and gestation takes approximately 11 - 12 months. Calves are approximately six metres in length and weigh 2 - 3 tonnes at birth. They are weaned when approximately seven months old and approximately 16 m in length (Yochem & Leatherwood 1985, Bannister *et al.* 1996).

Blue Whales are usually solitary, but are occasionally found in small feeding aggregations where krill is abundant. They may consume 2 - 4 tonnes of krill each day.

Blue Whales are fast swimmers capable of reaching speeds up to 48 km/h. When migrating or cruising, however, they generally swim at 5 - 33 km/h. The Killer Whale (*Orcinus orca*) is considered to be their main natural predator, possibly preying on calves and immobile animals.

Like other whales, Blue Whales communicate by producing low frequency sounds (10 Hz - 250 kHz). These low frequency sounds enable communication in widely dispersed populations because sounds can travel for large distances under optimal conditions (from tens to hundreds or thousands of kilometres) (Kibblewhite 2001).

Conservation status

Internationally, the Blue Whale (*Balaenoptera musculus*) is listed as endangered by the International Union for the Conservation of Nature (IUCN). It is also protected under a variety of international agreements.

In Australia, it is listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, and is therefore protected in all Commonwealth waters. It is also protected under legislation in the waters of all states and territories of Australia.

In Victoria, the Blue Whale is protected under the *Wildlife Act 1975* and has been listed as threatened under the *Flora and Fauna Guarantee Act 1988* (FFG Act) since 1995.

It is considered critically endangered in Victoria according to the Department of Sustainability and Environment's *Advisory List of Threatened Vertebrate Fauna in Victoria - 2007* (DSE 2007).

Decline and threats

Blue Whale stocks were severely depleted by whaling in the first half of the twentieth century. It is estimated that, prior to whaling, there were approximately 311 000 Southern Hemisphere Blue Whales and 10 000 Pygmy Blue Whales. In 2001, the population of Southern Hemisphere Blue Whales was estimated to have fallen to 500 - 2,300 individuals (DEH 2005). While there is insufficient data to estimate the present number of Pygmy Blue Whales, this species is also thought to have declined in abundance due to whaling.

Through the International Whaling Commission, a moratorium banning the taking of Blue Whales was signed in 1967 and an international ban on all commercial whaling was instituted in 1986. Mortality as a result of whaling is therefore no longer a threat to the survival of Blue Whales and stocks are thought to be recovering.

The Intergovernmental Panel on Climate Change has concluded that human activity is contributing to global warming (IPCC, 2007). While the exact outcomes of global warming are not known, Southern Ocean ecosystems are predicted to experience reductions in productivity and sea ice, unpredictable weather events caused by increasing ocean water temperatures, changes in ocean currents and rises in sea levels (DEH 2005a). The potential impacts of these events on Blue Whales are:

- Loss of suitable Blue Whale habitat for migration, feeding, resting and calving site selection.
- Changes to prey species productivity, distribution and availability.

However, Blue Whales may also be vulnerable to the cumulative effects of less significant threats (outlined below). This is a particular issue as the long lifespan and slow rate of maturity of Blue Whales means that population recovery to pre-whaling levels is likely to be slow. The possibility of Blue Whales being subject to some type of whaling in the future also persists because some countries may propose taking Blue Whales as part of research programs.

While Blue Whales are exposed to international threats, this Action Statement only focuses on those threats relevant to Victorian waters. These include:

- Entanglement - may occur in marine debris, fishing gear or aquaculture equipment. While there have been no reported incidences of entanglements with Blue Whales in Australian waters, this threat is recognised in the *Blue, Fin and Sei Whale Recovery Plan 2005-2010* (DEH 2005) and the *Action Plan for Australian Cetaceans* (Bannister *et al.* 1996). There are currently no aquaculture operations in Victorian marine waters that could cause entanglements. However, appropriate placement and infrastructure of any future developments in this area is necessary. There are regular reports of whale entanglements in commercial fishing gear (such as ropes attached to lobster pots) used between Western Australia and Victoria. To date, Humpback Whales (*Megaptera novaeangliae*) have been most commonly entangled, but entangled Southern Right Whales (*Eugalaena australis*) have also been found.
- Human-related underwater noise - includes noise as a result of boating, shipping, sonar signals, blasting and seismic surveys that use air gun pulses. While the specific impacts of these noise signals are unknown, human-related underwater noise may affect communication between individuals or the ability of individuals to navigate. Blue Whale hearing (like that of other mammals) may also be affected if noise levels are significant and in close proximity to the whale. Sufficient disturbance may deter individuals from specific locations such as feeding or breeding grounds. If seismic testing occurs near a limited food supply (such as a krill aggregation), whales may be forced to contend with a source of irritation because of energy constraints, or may be disrupted from feeding (Morrice *et al.* 2004). The need to minimise disruption to whale behaviour during seismic testing is recognised in the Australian Guidelines on the application of the *Environment Protection and Biodiversity Conservation Act 1999* to interactions between offshore seismic operations and larger cetaceans. Boating and shipping occur throughout Victoria, and seismic surveys are conducted in Bass Strait and the Otway Basin (an area covering hundreds of square kilometres).
- Disruption as a result of tourism - includes recreational and commercial whale watching activities. The threat posed by disruption is recognised at a national level. The Australian National Guidelines for Whale and Dolphin Watching (2005) have been developed as a guide for these activities to minimise disruption of whale behaviour. Victorian legislation also prescribes minimum approach

distances for whale watching in Victorian waters.

- Ship strikes, oil spills & marine debris - includes collision with vessels, ingestion or smothering by oil, and ingestion of marine debris (particularly plastics). There have been no official records of vessels colliding with Blue Whales in Australia. Collisions may occur, however, and the potential for collisions may increase as Blue Whale populations recover and more individuals traverse shipping channels.

Existing conservation measures

International arrangements

- **International Whaling Commission (IWC)** was established in 1946 to provide for the proper conservation of whale stocks and enable the orderly development of the whaling industry. Key measures implemented by the IWC include Whale Sanctuaries in the Indian Ocean (1979) and Southern Ocean (1994; reviewed in 2004), and moratoriums banning the taking of Blue Whales (1967) and all commercial whaling (1986).
- **Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)** was established in 1982 as part of the Antarctic Treaty System. Its aim is to conserve marine life in the Southern Ocean and promote sustainable management of resources. Whales, which are the subject of another convention (IWC), are excluded from this convention. However, management of other marine life (including krill, which is fundamental to Blue Whale survival) is considered under this convention.
- **Convention for the Conservation of Migratory Species of Wild Animals (CMS)** was established in 1979 under the United Nations Environment Program to conserve terrestrial, marine and avian species throughout their ranges by providing a framework convention for management actions. The Blue Whale is listed in *Appendix I - endangered migratory species*.
- **Convention on International Trade of Endangered Species (CITES)** was established in 1975. Its aim is to ensure that international trade in wild animals and plants does not threaten their survival. The Blue Whale is listed in *Appendix I - Species threatened with extinction*, and trade would only be permitted in exceptional circumstances.
- **Convention on Biological Diversity** was established in 1992 under the United Nations Environment Program at the Rio Earth Summit. It aims to conserve biological diversity, ensure sustainable use of its components, and have fair and equitable sharing of benefits from commercial and other utilisation.

National measures

- **Blue, Fin & Sei Whale Recovery Plan 2005-2010** has been released by the Commonwealth Department of the Environment, Water, Heritage and the Arts. The plan outlines measures necessary for the recovery of Blue Whales which utilise Australian waters so that the species can be considered secure in the wild in accordance with Part 13, Division 5 of the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).
- **Action Plan for Australian Cetaceans** (Bannister *et al.* 1996) covers 43 species of cetaceans in Australian waters, including Blue Whales. It reviews threats and conservation statuses, and recommends priority actions for research and management.
- **Australian National Guidelines for Whale and Dolphin Watching** (2005) promotes minimum standards to apply in state, territory or Commonwealth waters for the management of whale watching.
- **EPBC Act Policy Statement 2.1 – interaction between offshore seismic exploration and whales** (DEWHA 2008) provides practical standards and a framework for seismic survey operations to minimise the risk of acoustic injury to whales, and minimise disturbance to whales in biologically important habitat areas or during critical behaviours. This policy applies in Commonwealth waters and also

provides the minimum standards that would apply in state waters.

- **Australian Whale Sanctuary**, which was declared under the EPBC Act, protects whales within Australia’s Exclusive Economic Zone (three nautical miles to 200 nautical miles offshore), including Antarctic waters around Macquarie Island Park, and Heard and McDonald Islands Marine Reserve.

State measures

- **Victorian Wildlife Act 1975** provides protection for Blue Whales in Victorian waters.
- **Victorian Wildlife (Whales) Regulations 1998** prescribes minimum approach distances for persons in the vicinity of whales, including for whale watching in Victorian waters. These regulations are currently (2009) being updated.
- **Victorian Cetacean Contingency Plan** is maintained by DSE and provides for management of strandings and entanglements. This is currently being reviewed (2009).
- **Victorian Rock Lobster Fishery Code of Practice for Reducing Whale Entanglements** was developed in 2004 between DSE and the Victorian fishing industry to reduce the probability of whale entanglements.
- All whale-related incidents in Victorian rock lobster fisheries must be logged and reported to the relevant authorities.

Conservation objectives

Long term objective

To ensure that the Blue Whale can survive, flourish and retain its potential for evolutionary development in the wild.

Specific Objectives and Intended Management Actions

Many of the human activities that threaten Blue Whales, such as killing, injuring and disturbing individuals, are banned in Victorian waters or are already subject to controls. The actions in this statement therefore aim to maintain these arrangements to protect the species in Victoria. It is recognised that threats to Blue Whales still occur outside Victoria, and so this Action Statement also aims to support international and national arrangements to manage these threats. The intended management actions listed below are further elaborated in DSE’s Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

Objective I To minimise human impacts on Blue Whales.

Action	Targets	Responsible
1. Support the implementation of the Victorian Rock Lobster Fishery Code of Practice for Reducing Whale Entanglements.	<ul style="list-style-type: none"> ▪ Annual reporting on actions undertaken to raise and maintain awareness of the code of practice within the rock lobster fishing industry. 	Seafood Industry of Victoria, Department of Primary Industries (DPI)
2. Establish a mechanism for commercial fishers to report	<ul style="list-style-type: none"> ▪ Reporting mechanism established to allow commercial fishers to report 	DPI, DSE

interactions with Blue Whales in Victorian territorial waters.	interactions with protected wildlife, including Blue Whales.	
	<ul style="list-style-type: none"> ▪ Reports evaluated annually and recommendations arising submitted to responsible authorities for consideration. 	
3. Maintain preparedness to respond to entangled and stranded whales in Victorian waters.	<ul style="list-style-type: none"> ▪ Annual training exercises undertaken to maintain currency of skills for disentangling whales. ▪ Closer liaison established between government and the Marine Stranding Network. ▪ Reporting mechanism established to provide for reporting and review of deaths of whales, including Blue Whales, in Victorian waters. 	DSE, DPI, Parks Victoria
4. Continue to implement existing measures such as the management of whale watching regulations in Victorian waters.	<ul style="list-style-type: none"> ▪ Replace the Victorian Wildlife (Whales) Regulations 1998 with the Victorian Wildlife (Marine Mammals) Regulations 2009 to implement the Australian National Guidelines for Whale and Dolphin Watching in Victoria. 	DSE
5. Develop guidelines for seismic activity in Victorian waters.	<ul style="list-style-type: none"> ▪ Victorian guidelines for seismic activity developed and implemented, based on the EPBC Act Policy Statement 2.1 – interaction between offshore seismic exploration and whales. 	DSE
6. Support action in international forums for protection of Blue Whales.	<ul style="list-style-type: none"> ▪ Annual communication and liaison with the Australian Department of the Environment, Water, Heritage and the Arts, and other states and territories regarding whale protection matters. 	DSE
7. Assess and manage disturbances from oil and gas exploration and development, shipping, and recreational boating.	<ul style="list-style-type: none"> ▪ Appropriate planning processes, industry guidelines and state/commonwealth government regulations to reduce disturbances developed and applied. 	DSE
8. Reduce the likelihood of whales being entangled in marine debris and marine industry equipment.	<ul style="list-style-type: none"> ▪ Appropriate guidelines/codes of practice for industry developed to reduce the likelihood of whale entanglement. 	DSE
Objective II To improve understanding of the distribution, abundance and migration patterns of Blue Whales in Victorian waters.		
9. Contribute to national monitoring programs such as the photo identification database, where appropriate to Victoria.	<ul style="list-style-type: none"> ▪ Surveys completed as required to update the national database. 	DSE
Objective III To increase community awareness and support.		
10. Develop and implemented education programs to inform marine users of best practice behaviours when interacting with whales.	<ul style="list-style-type: none"> ▪ Education programs developed and implemented. 	DSE

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