

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

The Minister's delegate approved this conservation advice on 01/10/2015

Conservation Advice

Balaenoptera physalus

fin whale

Conservation Status

Balaenoptera physalus (fin whale) is listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act). The species is eligible for listing as Vulnerable as, prior to the commencement of the EPBC Act, it was listed as Vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth).

The main factor that is the cause of the species being eligible for listing in the Vulnerable category is its small population size due to being severely impacted by global whaling last century particularly in the southern hemisphere. The global population is estimated to have declined by more than 70% over three generations from 1929 - 2007 (Reilly et al., 2008j).

Description

The fin whale is the second-largest whale species, after the blue whale. Adult whales range between 20 and 27m long and weigh more than 70 tonnes (Aguilar & Lockyer 1987). The fin whale is very streamlined in appearance, with a distinct ridge along the back behind the dorsal fin. They are dark grey to brownish black dorsally, grading to pale or white ventrally. The undersides of the flippers and flukes are also white. The head is asymmetrical in colour and is mostly dark, but the right lower jaw is white. Baleen plates are black on the left jaw and white on the right jaw. The body is free of mottling or extensive scarring (Leatherwood & Reeves 1983).

Fin whales are more gregarious than other baleen whales, and can occur in groups of 6 – 10, though single animals and pairs are more common (Watkins et al., 1987). The breeding period in the southern hemispheres is between May-July (Aguilar 2009), with calves born mainly in winter (Mizroch et al., 2009). Gestation is about 11 months, with the mean calving interval estimated to be about 2.2 years (Bannister et al., 1996; Taylor et al., 2007).

Fin whales frequently lunge or skim feed at or near the surface. In Antarctica, they feed primarily on Antarctic krill (*Euphausia superba*) (Aguilar 2009, Double et al., 2014). They are known to sometimes occur in mixed feeding schools with blue whales *B. musculus* (Aguilar 2009). Surface feeding could make these whales particularly vulnerable to shipstrike (D. Thiele 2004, pers. Comm).

There are two described subspecies of fin whale (*Balaenoptera physalus*) (Rice 1998), *B. physalus quoyi* (southern hemisphere) and *B. physalus* (northern hemisphere). More recently, a third subspecies, known as the pygmy fin whale *B. physalus patachonica* (Southern Hemisphere) was described by Clarke (2004), based on a specimen that stranded in Argentina. This third subspecies is listed by the Society for Marine Mammalogy (Committee on Taxonomy 2014) but little is known about this third subspecies.

The total abundance and population trends of fin whales in Australian waters is unknown. They were very abundant prior to commercial whaling, with an estimated global population of about 400 000 whales in 1920, of which about 325 000 occurred in the Southern Hemisphere (Reilly et al., 2008j). Estimated population numbers identified by Aguilar (2009) in global locations included 15,200 fin whales in the Antarctic, south of 307°S.

Two distinct fin whale call types were detected during acoustic recordings in Antarctic waters, suggesting that two different populations may exist within the Southern Ocean (Širović et al., 2009).

Distribution

Fin whales are considered a cosmopolitan species and occur from polar to tropical waters, and rarely in inshore waters. The full extent of their distribution in Australian waters is uncertain, but they occur within Commonwealth waters and have been recorded in most State waters and from Australian Antarctic Territory waters (Bannister et al., 1996; Thiele et al., 2000; Bannister 2008a).

These whales are generally thought to undertake long annual migrations from higher latitude summer feeding grounds to lower latitude winter breeding grounds (Mackintosh 1965; Bannister 2008a; Aguilar 2009). It is likely they migrate between Australian waters and the following external waters: Antarctic feeding areas (the Southern Ocean); subantarctic feeding areas (the Southern Subtropical Front); and tropical breeding areas (Indonesia, the northern Indian Ocean and south-west South Pacific Ocean waters) (D.Thiele 2004, pers. Comm.)

Fin whales have been sighted inshore in the proximity of the Bonney Upwelling, Victoria, along the continental shelf in summer and autumn months (Gill 2002). Fin whales in the Bonney Upwelling are sometimes seen in the vicinity of the Endangered blue whale *B. musculus* and sei whale *B. borealis* listed as Vulnerable under the *Environment Protection and Biodiversity Act* 1999.

Fin whales were sighted between November-May (upwelling season) during aerial surveys conducted between 2002-2013 in South Australia (Gill et al., 2015). Feeding was also observed during observations. This is one of the first documented records these whales feeding in Australian waters, suggesting that the region may be used for opportunistic baleen whale feeding (Gill et al., 2015).

The sighting of a cow and calf in the Bonney Upwelling in April 2000 and the stranding of two fin whale calves in South Australia suggest that this area may be important to the species' reproduction, perhaps as a provisioning area for cows with calves (Morrice et al., 2004). However, there are no defined mating or calving areas in Australia waters.

Fin whales calls have been detected in Antarctic waters during February to July at three locations; the Western Antarctic Peninsula, the Scotia Sea and Eastern Antarctica (Gedamke et al., 2007, Širović et al., 2009, Gedamke & Robinson 2010). Their oceanic migratory routes and dispersal to winter breeding grounds are largely unknown.

Sightings of fin whales within Antarctic waters have been collected from various Antarctic expeditions, including 61 sightings (totaling 341 individuals) during the 2013 Antarctic Blue Whale Voyage (Double et al., 2013).

Threats

The Action Plan for Australian Mammals 2012 by Woinarski et al., (2014) has identified a number of threats:

Threat factor	Consequence rating	Extent over which threat may operate
Climate and oceanographic variability and change	minor-severe	large, potentially operating and increasing throughout the range
Anthropogenic noise and acoustic disturbance	minor	moderate-large
Habitat degradation including coastal development, port expansion and aquaculture	minor	moderate-large
Pollution (persistent toxic pollutants)	minor	moderate-large
Fisheries catch, entanglement and bycatch	minor	localised
Vessel strike	minor	localised, but potentially increasing in future as fin whale populations increase and shipping increases
Resource depletion due to fisheries (potential threat)	potentially minor to moderate, depending upon the scale of future over-harvesting	localised to minor
Resumption of commercial whaling (potential threat)	minor to severe depending upon the scale of whaling impacts	potentially throughout large part of range depending upon the scale of commercial whaling if it were to resume

Conservation Actions

Conservation and Management Actions

There is insufficient data on fin whales in Australian waters to determine abundance estimates, or an increase or decline in the population, and the full extent of their distribution in Australian waters is uncertain.

To implement a range of Conservation Management Actions research needs to be undertaken as a priority to define the spatial and temporal distribution of fin whales and further define biologically important areas so that adaptive management and additional mitigation measures can be implemented if necessary (i.e. within defined foraging or breeding areas).

Maintain and improve existing legal and management protection

- Continue or improve existing legislative management actions under the *Environment Protection and Biodiversity Act 1999*, including the Australian Whale Sanctuary provisions.
- Australia should maintain its position on promoting high levels of protection for fin whales in all relevant international agreements including the International Whaling

Commission (IWC), Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), fisheries related agreements, and the Antarctic Treaty Consultative Meetings (ATCM).

Understanding impacts of climate variability and change

- Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica.

Assessing and addressing anthropogenic noise

- Once the spatial and temporal distribution (including biologically important areas) of fin whales is further defined, an assessment of the impacts of increasing anthropogenic noise (including seismic surveys, port expansion, and coastal development) should be undertaken on this species.
- If required, additional management measures should be developed and implemented to ensure the ongoing recovery of fin whales.

Minimising vessel collisions

- Develop a national vessel strike strategy that investigates the risk of vessel strikes on fin whales and also identifies potential mitigation measures.
- Ensure all vessel strike incidents are reported in the National Vessel Strike Database.

Information and research priorities

Priority research objectives include:

- Determine population abundance, trends and population structure for fin whales, and establish a long-term monitoring program in Australian waters.
- Describe the spatial and temporal distribution of fin whales and further define biologically important areas (feeding and breeding), and migratory routes within Australian and Antarctic waters.

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