

THE NORTH MARINE BIOREGIONAL PLAN

BIOREGIONAL PROFILE

APPENDIX D8

NORTH MARINE REGION PROTECTED SPECIES GROUP REPORT CARDS: CETACEANS



A DESCRIPTION OF THE ECOSYSTEMS, CONSERVATION VALUES AND USES
OF THE NORTH MARINE REGION



Australian Government

Department of the Environment, Water, Heritage and the Arts

D8 North Marine Region Protected Species Group Report Card – Cetaceans

Current at February 2008. For updates see www.environment.gov.au/coasts/mbp/north.

General information

The order Cetacea includes more than 80 species of whales, porpoises and dolphins (International Whaling Commission 2007), divided into two sub-orders: the Mysticeti, or baleen whales, and the Odontoceti, or toothed whales. Baleen whales include species such as blue whales, humpback whales and minke whales, and are generally characterised by their large size (10–30 m) and keratinous baleen plates which hang from the upper jaw and are used to filter krill, plankton and other prey items from seawater. Toothed whales include dolphins and porpoises as well as killer whales and sperm whales. They are active hunters, feeding on squid, fish and other marine mammals. Forty-five species of cetacean occur in Australian waters. Of these, nine are known to occur regularly in the waters of the Region, including three species of whale and six species of dolphin (see appendix C, table I). Cetacean species that do not regularly feed, aggregate or migrate through the Region, or are considered outside their normal range if found in the Region, are listed in appendix C, table II.

Nationally protected species

All cetaceans are protected under the EPBC Act. Three species of cetacean known to occur in the Region are listed as threatened and/or migratory under the EPBC

Act (table D IV). Additionally, the long-snouted spinner dolphin, Australian snubfin dolphin (then listed as Irrawaddy dolphin) and Indo-Pacific humpback dolphin are considered as priority species under the 1996 *Action Plan for Australian Cetaceans*, although information is still too scarce to assign them to a conservation category (Bannister et al. 1996; Ross 2006).



Australian snubfin dolphins. Photo: Deb Thiele.



Table D IV Cetaceans listed as threatened or migratory under the EPBC Act that are known to occur in the North Marine Region

Species	Conservation status	Australian Government conservation plans or strategies for the species
	Migratory [also listed under CITES (Appendix I) and CMS (Appendix II)]	<ul style="list-style-type: none"> <i>The Action Plan for Australian Cetaceans</i> (1996) <i>Guidelines on the Application of the Environment Protection and Biodiversity Conservation Act to Interactions between Offshore Seismic Operations and Larger Cetaceans</i> (2001) <i>Australian National Guidelines for Whale and Dolphin Watching</i> (2005)
	Migratory [also listed under CITES (Appendix II) and CMS (Appendix II)]	
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The Australian Government has established the Australian Whale Sanctuary to protect all whales and dolphins found in Australian waters. The Australian Whale Sanctuary covers the Commonwealth marine area and includes waters around Australia's external territories such as Christmas, Cocos (Keeling), Norfolk, Heard and McDonald islands. Within the sanctuary it is an offence for Australian residents to kill, injure or interfere with a cetacean. Further information on the Australian Whale Sanctuary can be found at <www.environment.gov.au/coasts/species/cetaceans/sanctuary.html>.

Ecology of protected cetaceans in the North Marine Region

Cetaceans found in the Region include species such as the long-snouted spinner dolphin, found in pelagic waters, the false killer whale, found in deeper offshore waters, and the short-finned pilot whale, that is observed around areas of upwelling and canyons on the continental shelf. Other species that occur in waters in and adjacent to the Region include the Australian snubfin dolphin and Indo-Pacific humpback dolphin. The Australian snubfin dolphin, Indo-Pacific humpback dolphin and the bottlenose dolphins are the most common species found inshore in Northern Territory coastal waters.

Cetaceans that are found in the Region vary widely in their biological characteristics. The Region does not appear to be a part of the usual migratory pathway for

humpback whales, although they have been sighted traversing the western part of the Arafura Sea between their breeding areas in the tropical and subtropical waters and their feeding areas in the Antarctic. Humpbacks are thought not to feed while visiting the Region. Both the Australian snubfin dolphin and Indo-Pacific humpback dolphin reside in enclosed, shallow seagrass habitats in the Region and adjacent areas, and share similar habitat preferences (Parra 2006). The Australian snubfin dolphin is newly described and is endemic to Australian and possibly Papua New Guinea waters (Beasley *et al.* 2005). Spotted bottlenose dolphins are resident in the Region and prefer estuarine and shallow waters.

Important areas for cetaceans in the North Marine Region

Important areas in the Region are identified for cetaceans listed as threatened or migratory under the EPBC Act. A number of areas in or adjacent to the Region are of particular importance for cetacean species, including:

Anson Bay to Fog Bay – supports aggregations of Australian snubfin and Indo-Pacific humpback dolphins.

Beagle Gulf – including Darwin and Bynoe Harbours, Shoal Bay and Adelaide River – supports aggregations of Australian snubfin and Indo-Pacific humpback dolphins.



Humpback whale breaching. Photo: Mark Farrell.

Bathurst and Melville islands – support aggregations of Australian snubfin and Indo-Pacific humpback dolphins.

Van Diemen Gulf – including Chambers Bay, South and East Alligator rivers, Kakadu National Park, Cobourg Peninsula and the Croker Islands – supports aggregations of Australian snubfin and Indo-Pacific humpback dolphins.

Blue Mud Bay – has a nationally significant resident population of Australian snubfin dolphins and a resident population of Indo-Pacific humpback dolphins.

Groote Eylandt – supports aggregations of Indo-Pacific humpback dolphins.

Sir Edward Pellew Group – supports aggregations of Australian snubfin, Indo-Pacific humpback and spotted bottlenose dolphins.

Wellesley Islands – home to resident populations of spotted bottlenose dolphins.

Albatross Bay – has resident populations of Indo-Pacific humpback dolphins during the dry season.

Known interactions, threats and mitigation measures

Under the EPBC Act, all cetaceans are protected within the Australian Whale Sanctuary. Since the termination of whaling in Australian waters, cetacean populations have been recovering at varying rates, with humpback whale populations increasing at a rate close to their biological capacity.

Current international whaling activities are believed to remain as the most significant impact on whales that reside in or traverse through Australian waters. Antarctic minke whales which may migrate past Australian shores are the primary target of a special permit, or ‘scientific’ whaling by Japan (JARPA II). Short-finned pilot whales and some dolphin species (e.g. long-snouted spinner, spotted, striped and rough-toothed dolphins) that are known to occur or may be found in the Region are also hunted in Japan, Indonesia and Sri Lanka. Interactions between cetaceans and humans in Australian waters are generally accidental. The most significant interactions between human activities and cetaceans in the Region are likely to be those involving fisheries, oil and gas, defence and shipping. These are considered in more detail below.

Commercial fisheries

Interactions between cetaceans and fisheries activities can include competition for target species, depredation of catch, entanglement by cetaceans in gear, and injury or death through incidental capture. The primary threat associated with fisheries to cetaceans in the Region is likely to be incidental mortality in fishing gear.

Information on trophic interactions between cetaceans and fisheries is limited. Work on marine mammals generally indicates that cetaceans at the top of the food chain may have a significant effect on the structure of the marine ecosystem. Competition between cetaceans and fisheries may be direct, where both are targeting a common prey species, or indirect, through complex trophic interactions. In particular, fisheries targeting small pelagic species, such as pilchards and redbait, may have a significant effect on some cetacean species, as small pelagic fish are thought to be important to many components of the marine ecosystem generally.

Dolphins are known to actively feed on discards from the Northern Prawn Fishery (Department of the Environment and Heritage 2003). An assessment of the possible impacts of discards on select species populations including dolphins is described by Poiner *et al.* (1998). Discarding in areas of regular trawling may affect dolphin populations as discards concentrate in smaller areas within the foraging range of the scavengers. Provisioning of animals is an issue of concern, with the possibility of increasing populations of some species beyond their natural capacity, which may have implications for the ecosystem as a whole. The reduction in the number of fishing vessels in the Northern Prawn Fishery and the reduction in length of the trawling season will assist in a reduction in the amount of discards from prawn trawls in the Region.

Australian snubfin and Indo-Pacific humpback dolphins are vulnerable to gill-nets set for barramundi and other fish species in river and estuarine habitats. Overfishing of the prey of these dolphin species is of increasing concern (Ross 2006).

The Gulf of Carpentaria Inshore Finfish Fishery has trialled acoustic pingers to warn dolphins of net locations in the Region, but the effectiveness of the pingers is yet to be proven. Other measures that have been introduced to prevent impacts of fisheries operations on cetaceans include requirements for attending nets, restrictions on net lengths, closed water



declarations in important areas, and minimum and maximum mesh sizes for nets.

Aquaculture

Aquaculture activities and equipment may be a source of interaction with cetacean species, particularly smaller whales and dolphins in waters adjacent to the Region. Cetaceans may become entangled in aquaculture installations (Kemper and Gibbs 2001; Watson-Capps and Mann 2005) and animals may avoid aquaculture installations, resulting in displacement from their preferred habitat.

Oil and gas exploration

Oil and gas exploration and other geophysical surveys involve the use of seismic 'air-guns', which generate a rapid release of air under high pressure to determine the geological profile of the sea floor and the substrate. The generation of noise resulting from this high pressure air is known to have some impact on cetaceans. The effects of seismic surveying on whales are not fully understood, but may lead to physical or behavioural changes. This is particularly significant where there is a high likelihood that whales will be encountered, or seismic work is to be undertaken near important habitats, such as areas of known breeding, resting, feeding or migration. Baleen whales such as humpback, blue and fin whales may be more affected by seismic activities surveys than toothed whales, as their acoustic range is thought to operate in the same frequency as air gun pulses. Seismic operations are regulated by the Australian Government's EPBC Act Policy Statement 2.1 – *Interaction between Offshore Seismic Exploration and Whales* (May 2007) and are available at www.environment.gov.au/epbc/publications/seismic.

The guidelines provide precautionary mitigation measures aimed at preventing injury and minimising the threat of biologically significant changes. The petroleum industry has taken an active role in the development and implementation of measures to minimise the potential impacts of exploration on cetaceans. The industry seeks to undertake exploration, where practicable, during times when encounters with whales are generally least likely to occur.

Defence activities

The Australian Government Department of Defence conducts a range of activities, such as target practice, which involve the use of live ammunition and the use of active sonar to locate targets within the marine environment. Noise from some types of military sonar

has been linked to cetacean strandings and deaths of some species of deep-diving beaked whales in other parts of the world. To date, there is no evidence of whale strandings linked to defence training activities in the Region.

In order to prevent impacts on cetaceans by their activities, the Royal Australian Navy has developed procedures for detecting whales during defence training activities. These procedures provide advice for operators of military aircraft and equipment and naval vessels that produce sonar or sources of underwater sound. The Department of Defence, in cooperation with the Department of the Environment, Water, Heritage and the Arts, develops guidelines when planning activities in the marine environment. These guidelines outline any approvals that are required, and how to avoid migrating, breeding and feeding whales. The Department of Defence has also provided financial and technical support to a range of research activities related to cetaceans to better improve their understanding of how to avoid impacts on the species.

Shipping

Shipping is an important activity in the Region. Overseas studies indicate that ship strikes may be a major cause of mortality for some cetacean species (Knowlton and Kraus 2001). Within the Region interactions with small cetaceans are likely to be more common than with larger species, as these species occur only infrequently in the Region. In particular, the coastal nearshore distribution of Australian snubfin dolphin and Indo-Pacific humpback dolphins suggests that they may be vulnerable to interactions with vessel traffic. A study in Queensland showed that acoustic communication and group cohesion in Indo-Pacific humpback dolphins was affected by boat traffic and noise (Van Parijs and Corkeron 2001).

Marine debris

The ingestion of, or entanglement in, harmful marine debris has been identified under the EPBC Act as a key threatening process causing injury and fatality to vertebrate marine life. Entanglement in marine debris such as discarded fishing gear can lead to restricted mobility, starvation, infection, amputation, drowning and smothering. The ingestion of plastic marine debris can cause physical blockages leading to starvation, or

injuries to the digestive system leading to infection or death.

Few data are available on the effects of ingested plastic objects on cetaceans in Australia, but plastics and rope have been found in the intestines of dead dolphins and whales in other parts of Australia sufficient to have caused fatal blockages (Bannister *et al.* 1996, Thompson 2000). A number of whales and dolphins have also been recorded entangled in derelict fishing gear around Australia's coasts (Chatto and Warneke 2000; Limpus *et al.* 2003). Records of cetaceans seen entangled at sea are poorly documented. Cuvier's beaked whales are thought to be particularly susceptible to ingestion of anthropogenic debris due to their suction foraging techniques.

The Australian *Action Plan for Australian Cetaceans* (Bannister *et al.* 1996) and existing whale recovery plans (Department of the Environment and Heritage 2005a, 2005b, 2005c) identify entanglement in derelict fishing gear and ingestion of plastics at sea as a current threat to a number of vulnerable and endangered cetacean species. The *Action Plan for Australian Cetaceans* also notes several species that are not yet considered to be threatened (because of the lack of sufficient data on populations) as also being vulnerable to the effects of harmful marine debris (Bannister *et al.* 1996).

The Australian Government is currently developing a threat abatement plan which aims to minimise the impacts of marine debris on threatened

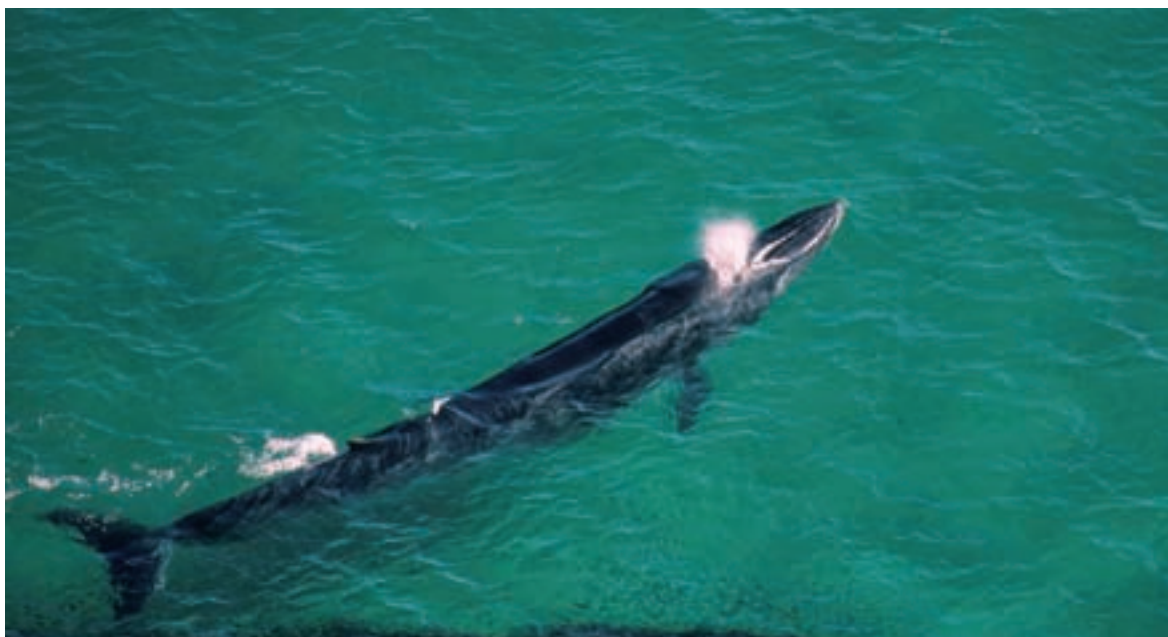
marine species. Further information is available at <www.environment.gov.au/biodiversity/threatened/publications/marine-debris.html>.

Whale watching

In response to concerns regarding the impact of the growing cetacean watching industry on whales in other parts of Australia, the Australian Government and all State and Territory governments jointly developed the *National Guidelines for Whale and Dolphin Watching* (Department of the Environment and Heritage 2005d). These guidelines apply equally to commercial and recreational whale watching and have the dual aims of:

- minimising harmful impacts on whales, dolphins and porpoises; and
- ensuring that people have the best opportunity to enjoy and learn about the whales, dolphins and porpoises found in Australian waters.

The guidelines set out a number of requirements of relevance to both commercial and recreational whale and dolphin watching, including minimum distance requirements for vessels, aircraft and helicopters. State and Territory governments manage the day-to-day activities of the cetacean watching tourism sector in coastal waters, and their management arrangements are consistent with the national guidelines. The Australian Government implemented the latest national guidelines in the EPBC Regulations in June 2006 <www.environment.gov.au/coasts/publications/whale-watching-guidelines-2005.html>.



Bryde's whale. Photo: C. Jenner.

Recreational activities

Recreational and tourism activities at sea have the potential to affect the behaviour of cetaceans. Because of their presence in shallower coastal waters in the Region, humpback whales and some species of dolphin may be susceptible to disturbance from tourism operations.

Recreational boating may affect cetaceans through direct strikes resulting in injury or death, physical disturbance, and masking of the acoustic cues that cetaceans depend on for communication, orientation or food-finding.

Offshore installations

Offshore installations such as wind farms or wave generators in other parts of the world are currently under assessment for their potential to impact on cetaceans.

Aircraft

Because of their speed, noise, shadow or downdraft (in the case of helicopters), aircraft have been shown to disturb whales and dolphins. Provisions for the operation of aircraft in the vicinity of whales and dolphins are outlined in the *Australian National Guidelines for Whale and Dolphin Watching 2005* (Department of the Environment and Heritage 2005d).

Land-based activities

Toxic contaminants such as heavy metals and synthetic compounds such as organochlorines may enter the marine environment through soil erosion and agricultural run-off. Organochlorines are commonly used in insecticides and, while usually only found at very low concentrations in seawater, they can accumulate up the food chain to toxic levels (Environment Australia 2002). Organochlorines are soluble in fat and heavy doses may be passed to offspring through mothers' milk. Concentrations of organochlorines and other toxic contaminants have been found in marine mammals throughout the world including sperm whales off Tasmania, and in dolphins off South Australia (Evans *et al.* 2004; Correll *et al.* 2004). It is thought that organochlorines and other toxins may have deleterious effects on the immune, endocrine and nervous systems of cetaceans and may contribute to mass mortality events and strandings. Species with an inshore distribution such as Australian snubfin and Indo-Pacific

humpback dolphins may be particularly vulnerable to pollutants entering coastal waters through land-based activities.

Climate change

The long-term effects of global warming on marine species are still speculative, however it is predicted that both habitat and food availability will be affected by increasing ocean temperatures, changing ocean currents, rising sea levels and reductions in sea ice. Such changes may affect current migration routes, feeding areas and calving grounds, rendering current habitat unsuitable. Similarly, changes to climate and oceanographic processes may lead to decreased biological productivity and different patterns of prey distribution and availability (Department of the Environment and Heritage 2005a,b,c).

Threats to those cetaceans listed as endangered or vulnerable under the EPBC Act are addressed in the objectives of the *Recovery Plan for Australia's Threatened Whales* (Department of the Environment and Heritage 2005a,b,c). The objectives of the recovery plan are:

- the recovery of populations of whales using Australian waters so that the species can be considered secure in the wild; a distribution of whales in Australian waters that is similar to the pre-exploitation distribution; and
- to maintain the protection of whales from human threats.

To achieve these objectives, the recovery plan recommends the implementation of programmes to measure population abundance and trends, to better define the characteristics of calving, feeding and migratory areas, manage and monitor threats to important habitat and prey availability, and monitor climate and oceanographic change. More information on the recovery plans for humpback, blue, fin and sei whales can be found at <www.environment.gov.au/biodiversity/threatened/publications/recovery/m-novaeangliae> and <www.environment.gov.au/biodiversity/threatened/publications/recovery/balaenoptera-sp>.

Cetacean stranding adjacent to the North Marine Region

The relationship between stranding events and human activities is not well understood. Possible natural causes of whale strandings include disease, injury, ocean currents and topographical features of the coastline.

Pollution, ship strikes and anthropogenic marine noise have also been suggested as contributing to strandings (for example, Engel *et al.* 2004; Laist *et al.* 2001).

Records of strandings collated by Chatto and Warneke (2000) between 1948 to 1999 list 57 cetacean strandings in coastal Northern Territory. For many of the strandings that involved a single animal found dead, there is no way of knowing whether the animal was alive when beached, or died at sea and was transported by currents, winds or tides before being washed ashore. Cetacean species that have been involved in strandings in the Region include bottlenose and Indo-Pacific humpback dolphins, melon-headed whale, humpback whale, sperm whale and Cuvier's beaked whale. In 2004, the largest stranding of short-finned pilot whales in the Northern Territory occurred where 54 whales were beached on Centre Island in the Sir Edward Pellew Group.



Indo-Pacific humpback dolphin. Photo: Guido J. Parra, University of Queensland.

Key references and further reading

Australian Fisheries Management Authority, 2005b, *Small Pelagic Fishery Management Advisory Committee 02*, Commonwealth of Australia, Canberra.

Australian Fisheries Management Authority (Small Pelagic Fishery Management Advisory Committee), unpub. 2005, *Meeting Papers from SPFMAC 30 September 2005*, Commonwealth of Australia, Canberra, <www.afma.gov.au/fisheries/small_pelagic/mac/2005/m20050930/item2024_research.pdf>, accessed May 07.

Australian Fisheries Management Authority and Department of the Environment and Heritage, 2005, *Report on the Incidents of Dolphin Deaths which Occurred During Fishing Operations Off Eastern Tasmania*, Commonwealth of Australia, Canberra, <www.afma.gov.au/fisheries/small_pelagic/rag/2005/11_30_spf_cetacean_20report_20final.pdf>, accessed May 07.

Bannister J.L., Kemper, C.M. and Warneke, R.M., 1996, *The Action Plan for Australian Cetaceans*, Australian Nature Conservation Agency, Canberra.

Beasley, I., Robertson, K.M. and Arnold, P., 2005, 'Description of a New Dolphin, the Australian Snub-fin Dolphin *Orcaella heinsohni* sp. N. (Cetacea, Delphinidae)', *Marine Mammal Science*, 21:365–400.

Chatto, R. and Warneke, R., 2000, 'Records of Cetacean Strandings in the Northern Territory of Australia', in *The Beagle, Records of the Museum and Art Galleries of the Northern Territory*, 16:163–175.

Correll, R., Müller, J., Ellis, D., Prange, J., Gaus, C., Shaw, M., Holt, E., Bauer, U., Symons, R. and Burniston, D., 2004, *Dioxins in Fauna in Australia*, National Dioxins Program Technical Report No. 7, Australian Government Department of the Environment and Heritage, Canberra.

Department of the Environment and Heritage, 2001, *EPBC Act Policy Statement 2.1 Significant Impact Guidelines – Interactions Between Offshore Seismic Operations and Larger Cetaceans*, Commonwealth of Australia, Canberra, <www.environment.gov.au/epbc/protect/seismic>, accessed May 07.

Department of the Environment and Heritage, 2003, *Assessment of the Northern Prawn Fishery*, Commonwealth of Australia, Canberra.



- Department of the Environment and Heritage, *National Whale and Dolphin Sighting and Stranding Database*, Commonwealth of Australia, Canberra, <data.aad.gov.au/aadc/whales>, accessed September 07.
- Department of the Environment and Heritage, 2005a, *Southern Right Whale Recovery Plan 2005–2010*, Commonwealth of Australia, Canberra.
- Department of the Environment and Heritage, 2005b *Blue, Fin and Sei Whale Recovery Plan 2005–2010*, Commonwealth of Australia, Canberra.
- Department of the Environment and Heritage, 2005c, *Humpback Whale Recovery Plan 2005–2010*, Commonwealth of Australia, Canberra.
- Department of the Environment and Heritage (Natural Resource Management Ministerial Council), 2005d, *National Guidelines for Whale and Dolphin Watching*, Commonwealth of Australia, Canberra, <www.environment.gov.au/coasts/publications/whalewatching-guidelines-2005.html> accessed May 07.
- Department of the Environment, Water, Heritage and the Arts, 2008, *Species Profile and Threats Database*, Commonwealth of Australia, Canberra, <www.environment.gov.au/sprat>, accessed February 08.
- Engel, M.H., Marcondes, M.C.C., Martins, C.C.A., O Luna, F., Lima, R. P. and Campos, A., 2004, *Are Seismic Surveys Responsible for Cetacean Strandings? An Unusual Mortality of Adult Humpback Whales in Abrolhos Bank, Northeastern Coast of Brazil*, paper submitted to the IWC Scientific Committee (SC/56/E28).
- Environment Australia, 2002, *The Framework for Marine and Estuarine Water Quality Protection*, EA, Canberra.
- Evans, K., Hindell, M. and Hince, G., 2004, 'Concentrations of Organochlorines in Sperm Whales (*Physeter macrocephalus*) from Southern Australian Waters', *Marine Pollution Bulletin* 48:486–503.
- International Whaling Commission (IWC), 2007, <www.iwcoffice.org>, accessed February 08.
- Kemper, C.M. and Gibbs, S.E., 2001, 'Dolphin Interactions with Tuna Feedlots at Port Lincoln, South Australia and Recommendations for Minimising Entanglements', *Journal of Cetacean Research and Management* 3:283–292.
- Knowlton, A. and Kraus, S., 2001, 'Mortality and Serious Injury of Northern Right Whales (*Eubalaena glacialis*) in the Western North Atlantic Ocean', *Journal of Cetacean Research and Management* (special issue) 2:193–208.
- Laist, D.W., Knowlton, A.R., Mead, J.G., Collet, A.S. and Podesta, M., 2001, 'Collisions between Ships and Whales', *Marine Mammal Science* 17:35–75.
- Limpus, C., Currie, K. and Haines, J., 2003, *Marine Wildlife Stranding and Mortality Database Annual Report 2002: II Cetacean and Pinniped*, conservation technical and data report, volume 2002, No. 2 Queensland Environment Protection Agency/Parks and Wildlife Service.
- National Oceans Office, 2004, *Description of Key Species Groups in the Northern Planning Area*, Commonwealth of Australia, Hobart, <www.environment.gov.au/coasts/mbp/publications/north/n-key-species.html>, accessed September 07.
- Parra, G.J., 2006, 'Resource Partitioning in Sympatric Delphinid: Space Use and Habitat Preferences of Australian Snubfin and Indo-Pacific Humpback Dolphins', *Journal of Animal Ecology*, 75: 862–874.
- Poiner, I., Glaister, J., Pitcher, R., Burrige, C., Wassenberg, T., Gribble, N., Hill, B., Blaber, S., Milton, D., Brewer, D. and Ellis, N., 1998, *Final Report on Effects of Trawling in the Far Northern Section of the Great Barrier Reef: 1991–1996*. CSIRO Division of Marine Research, Cleveland.
- Ross, G.J.B., 2006, *Review of the Conservation Status of Australia's Smaller Whales and Dolphins*, Australian Government Department of the Environment and Heritage, Canberra.
- Thompson, C., 2000, 'Focus on Impact of Sea Trash', *Cairns Post*, Thursday 09/11/2000, p.12.
- Van Parijs, S.M. and Corkeron, P.J., 2001, 'Boat Traffic Affects the Acoustic Behaviour of Pacific Humpback Dolphins, (*Sousa chinensis*)', *Journal of the Marine Biological Association of the United Kingdom*, 81:533–538.
- Watson-Capps, J.J. and Mann, J., 2005, 'The Effects of Aquaculture on Bottlenose Dolphin (*Tursiops* sp.) Ranging in Shark Bay', *Biological Conservation*, 24:519–526.