

Action Statement

Flora and Fauna Guarantee Act 1988

No. 94

Southern Right Whale

Eubalaena australis

Description and Distribution

The Southern Right Whale, *Eubalaena australis*, is the only southern hemisphere representative of the mysticete (baleen) whale family Balaenidae. It is a large whale with no dorsal fin on its flat, shiny back.

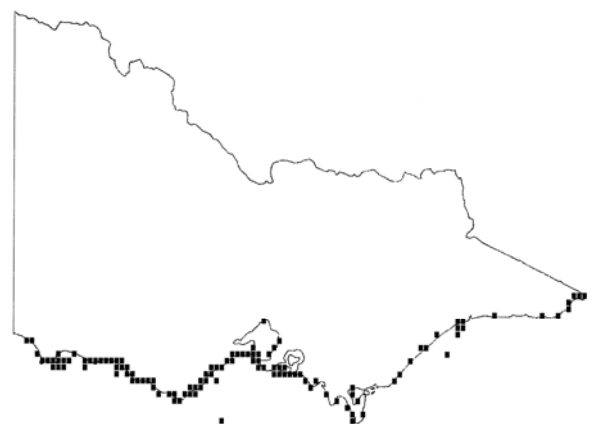
This species is unique in having pale horny outgrowths of skin - generally referred to as callosities - on the head, chin and variably on the top edge of the lower jaw. The number, size and arrangement of these callosities can be used to identify individuals (Cummings 1985). Most individuals are predominantly black in colour, except for scars, parasites and head callosities. Some individuals have white belly patches, which can be quite conspicuous. Almost completely white animals are encountered occasionally. One large female sighted in Victoria in 1994 was grey and was accompanied by a white calf.

Southern Right Whales are considered to be sexually mature when 9-10 years of age, and approximately 12-13m in length. An adult whale averages about 50 tonnes in weight and 16m in length; males are generally slightly smaller than females. The maximum recorded size is 80 tonnes and 17.5m (Bannister *et al.* 1996).

This species uses triangular plates of baleen on the sides of the upper jaw to strain food from water collected at or near the surface, by swimming slowly along with the mouth open. By closing the mouth periodically, the water is pushed out of the mouth through these filters, and pelagic larval crustacea (mainly *Munida gregaria*) and adult copepods are retained. Southern Right Whales



Southern Right Whale, *Eubalaena australis*
(illustration by Ian Dickinson and reproduced with permission from Thomson undated)



Distribution in Victoria
[source: Atlas of Victorian Wildlife, NRE 1998]

frequent sub-Antarctic and the lower Antarctic latitudes during the summer and feed on species which are abundant at that time. They rarely feed on Krill *Euphausia superba* which is the key food of other baleen whales. They fast during their over-wintering sojourn in Australian coastal waters (Bannister *et al.* 1996).

Southern Right Whales leave Antarctic waters - between 40°S and 60°S - and head north as winter approaches. The winter months are spent along the southern coasts of Australia, South America and South Africa. It is thought that there may be up to seven more or less geographically isolated populations in the southern hemisphere, of which some are believed to concentrate in the vicinity of sub-Antarctic islands such as Macquarie, Heard and the Chathams.

In Australia, Southern Right Whales are found along the southern coastline, in small groups or as individuals. Between 500 and 800 animals are thought to regularly overwinter in this region. The largest congregations occur in the Great Australian Bight, where they mate and calve regularly. Two sub-populations may exist in Australian waters, one in the waters off Western Australia and one off South Australia and Victoria, perhaps extending into southern New South Wales. There is an unknown level of interchange; some individuals, mainly adult females, are known to travel between the two groups (Bannister *et al.* 1996, Kemper *et al.* 1996, Ling and Needham 1991).

Breeding appears to be on a three-year cycle, with females returning to preferred breeding areas between June and August. Mating usually occurs between July and August; the gestation period is 11-12 months. The species is long-lived, with a probable life-span of up to 50 years (Bannister *et al.* 1996).

Most records of reproductive activity in Victoria are from the Logan's Beach area, between the Mepunga Cliffs and the Hopkins River mouth, near Warrnambool. Cows give birth within the period June-August during their winter visits, which often last until October or November. Although no birth has actually been witnessed there to date, there is strong circumstantial evidence that calves are born in the area, i.e. cows have been observed alone and then, within hours, accompanied by a calf. Elsewhere in Victoria, births have been inferred but not confirmed from observations near Mallacoota, the Otway coast and Port Fairy. Apparent mating behaviour has been reported off Cape Woolamai, Phillip Island, and possibly at Logan's Beach, although this remains unconfirmed (Warneke 1989, 1993, 1995).

The number of Southern Right Whales over-wintering in Victorian waters is a very small part of the Australian population. Total numbers of the

species appear to be growing slowly, and this trend may be reflected in time by increased numbers of sightings in Victorian waters. However, the level of annual variation in numbers is such that this cannot yet be confirmed.

Conservation Status

Current status

ANZECC (1995) Endangered (Australia)

NRE (1999) Critically Endangered (Victoria)

The Southern Right Whale is listed on Appendix 1 of the CITES Convention. Its global status is assessed as Lower Risk (Conservation-dependent) by the IUCN. The Southern Right Whale is fully protected within the Australian Exclusive Economic Zone under the **Whale Protection Act 1980**.

Reasons for conservation status

The Southern Right Whale was the basis of a Victorian whaling industry, begun in 1833 by William Dutton. Large numbers occurred in coastal waters off Portland - Port Fairy, from which the shore-based whaling operations were conducted (Carroll 1989). The industry reached its peak in 1837, only four years after commencing, subsequently declining and being abandoned only ten years later (Powling 1980, Peel 1996).

The species was also hunted by off-shore Sperm Whalers from a number of nations, mainly in their summer feeding waters and during migration (Townsend 1935). Historical catch efforts and the records of whale numbers they provide (Dawbin 1986) suggest that the initial 'Australian' population may have been in excess of 40 000.

Southern Right Whales were hunted extensively throughout their entire range until about 1899, by which time the species was near to extinction. The cessation of 'right' whaling was due to the collapse of commercial viability of the industry rather than by any concern for the conservation of the species.

In 1935, the Southern Right Whale was protected by international agreement, but by then the total world population was estimated at only about 1 000 animals. Some harvesting, by Russian whalers, was still taking place as recently as the early 1970s. The current estimate of the total population is 2 000-3 000 animals, indicating that the recovery has been extremely slow, perhaps reduced by illegal take. The recovery rate is considered to be about 10% per year off Western Australia (Bannister 1990), slightly higher than observed off South Africa and South America (7%: Best 1990, Bannister *et al.* 1996)

The low world and local population is the principal reason for the species' threatened status. Thomas (1990) suggests that a population of about 5 000 is required for a taxon to be considered to have a viable population. Using revised criteria developed by IUCN (Baillie and Groombridge 1996), for the species' status to be down-listed in Australia the population should approach 10 000. To achieve this, a number of potentially threatening processes will need to be addressed.

In its final recommendation the Scientific Advisory Committee (SAC 1991) determined that the taxon is:

- significantly prone to future threats which are likely to result in extinction; and
- very rare in terms of abundance or distribution.

Major Conservation Objective

- To protect critical, over-wintering habitat of the Southern Right Whale in Victorian waters. In particular, to ensure that calving and nursery grounds and migration routes are managed and protected so as to maximise the species' reproductive potential.
- To define and quantify threats to the taxon and to minimise such threats by their removal or control by appropriate means.

Management Issues

Ecological issues specific to the taxon

Calving and nursery sites and mating grounds will need to be secure and free of disturbance to encourage breeding and to protect young from distress, thus maximising the chances of successful rearing of calves. In Victorian waters, the only regular calving and nursery ground known is off Logan's Beach; no favoured mating sites are yet known.

Potentially Threatening Processes

Habitat quality of the near-shore zone is potentially threatened by:

- Disturbance of the whales during the calving and nursing season by commercial fishing and recreational boating activity, particularly by boats engaged in whale-watching. The increased demand for eco-tourism experiences could lead to competition between operators to provide better viewing, which may lead to greater levels of boat traffic and commensurate increased disturbance to the whales.

- Disturbance of the whales by the movement of aircraft over the Warrnambool coast, in particular fixed-wing aircraft for sight-seeing and helicopters for news filming.
- Fishing activities in which fishing gear is set which may lead to the entanglement of resident or migrating animals. This is more likely to occur with methods that use long nets, trailing ropes or tethered buoys. These activities are common in the Southern Rock Lobster (*Jasus edwardsii*), and Giant Crab (*Pseudocarcinus gigas*) pot fishery and the southern shark fishery. Entanglement has happened on at least four recorded occasions in South Australian and Western Australian waters (S. Burnell *pers. comm.* 1995) but while the activity of the individuals has been compromised, no deaths have been reported. The gear used in recreational fishing is unlikely to be a major concern.
- Pollution by plastic waste, which may cause entanglement, and degradation of water quality by industrial waste, untreated sewage, eroded soil and other environmental contaminants. Possible pollutants and much litter may enter from the Hopkins River, indicating the need for a catchment management approach to resolution of these issues. Sedimentation can be a problem in winter, when currents from the south-west push sediments from the Hopkins River directly towards Logan's Beach. The disposal of waste at sea by fishing boats could also be a problem.
- Southern Right Whales are extremely sensitive to sounds below and above the water surface, relying on their acute acoustic sense to monitor their environment. Human activities which produce loud and persistent sounds under water may interfere with whale activity and induce significant levels of stress. This could cause changes in use of specific habitat areas by the whales. Shipping noise, seismic exploration, hazard removal and military testing may all cause unacceptable levels of acoustic disturbance (Bannister *et al.* 1996).

In addition to near-shore issues, activities off-shore may present potential threats. These include:

- The presence of marine traffic in the whale's migration routes (although these are unknown as yet), which may lead to collision and subsequent death or injury. This has happened in South Africa where two animals were killed by a collision with a freighter leaving Port Elizabeth Harbour (G. Ross *pers. comm.*). Some 20% of Northern

Right Whale *Eubalaena glacialis* mortality is due to shipping strikes (Kraus 1990), and as numbers of Southern Right Whales increase the risk of collision for the latter species will also rise. Zones in which Southern Right Whales are known to move to and from over-wintering areas, and coastal movement areas, will need to be managed so as to minimise interference by shipping.

- The potential of oil spills from exploration and exploitation of off-shore petrochemical resources in both State and Commonwealth waters is an issue. Although experience in existing Bass Strait fields and the predominance of gas structures rather than heavy oil in the Otway Basin suggests that the possibility of a major spill is low, exploration and production has the capacity to disturb a wide range of marine environments.
- Oil spills from tankers passing through Bass Strait are inevitable. Their potential effects on Southern Right Whales will be dependent on the location and movement of the spill, but would be most damaging if they affected calving/nursery sites. Smaller spills from other shipping are of regular and increasing occurrence. The Wildlife Response Plan for Oil Spills (NRE 1997) has been produced to deal with such events, large or small.

Wider conservation issues

Member nations of the International Whaling Commission have agreed that commercial whaling is banned in the Southern Ocean until 2004, at which time the situation will be reviewed. It is unlikely that the decision will be reversed, but for any harvesting to take place, certain conditions, detailed in the Revised Management Procedure developed by the IWC Scientific Committee, would have to be met (Bannister *et al.* 1996). The Southern Right Whale is far from recovering to a point where it could sustain even a low level of commercial whaling.

The Southern Right Whale is protected throughout its range. The recent creation of the Southern Ocean Sanctuary, in which all commercial whaling is banned south of 40°S adds a most important conservation overlay to the existing protective legislation as does the protection provided within the Australian Exclusive Economic Zone in which the federal **Whale Protection Act 1980** applies.

Formalising the conservation status of the marine habitat in western Victoria could be used as a means of managing the habitat identified as calving/nursery grounds. The provision of a Marine Reserve system is currently the basis of the

Land Conservation Council's recommendations from the Marine and Coastal Special Investigation (LCC 1996). The implications could be that proposed areas will be managed for the conservation of the marine habitat that favours this species. This would need to be considered as part of the critical habitat determination.

Sewage treatment is an issue for the Environmental Protection Authority, which has a stated aim to remove ocean outfall disposal of untreated waste. Secondary treatment for the City of Warrnambool has commenced and at Port Fairy the development of better treatment facilities is planned. Portland has commenced the development of land-based disposal facilities.

Tougher pollution controls for industry and agriculture are to be considered as part of a broader catchment management program. The promotion of better water industry management of waterways and disposal programs for storm-water and sewage are essential.

Continued adherence to international conventions such as the International Whaling Commission, the Antarctic Treaty, Convention on the Conservation of the Antarctic Marine and Living Resources and Australian Exclusive Economic Zone controls on activities of foreign vessels is Government policy.

Social and economic issues

The tourism benefits to the state and the region are potentially high, with recent reports (SWRTA 1994) indicating a 10% loss in revenue for local tourism because whales did not visit Warrnambool during 1994. Identification of Warrnambool and the south-west coast with whales has a significant value to local traders, in particular through the utilisation of facilities during the winter months, the traditional tourism off-season, when whales are present in most years. The multiplier effect this has on a seasonal industry is greater than an equivalent increase in demand for limited resources during the summer period. Therefore, the value of this opportunity to view whales must be seen as more valuable than additional summer-dependent attractions.

The effect of habitat protection on recreational and commercial fishing should be positive in the long-term, through improved habitat and stock management. Any negative effects could be ameliorated by imposing a temporal ban on some commercial activities, which would not remove resources from the industry but shift the time of harvest from winter to summer.

There are a range of costs and benefits of improved sewage treatment processes that result in no ocean outfall of untreated waste. The

economic cost to remove ocean outfall has been considered too high for the City of Warrnambool, but the analysis has not included the long-term effect on the tourism industry if the whales are adversely affected by disposal at sea.

Previous Management Action

Whale Watching Guidelines have been incorporated into the Wildlife (Whales) Regulations 1998, to ensure consistent control over aircraft, boats and swimmers in the vicinity of whales.

Environment Australia has prepared national guidelines for cetacean observation (Australian National Guidelines for Cetacean Observation, Environment Australia 1999). NRE has endorsed these guidelines.

Improved viewing facilities have been developed at Logan's Beach. These have been jointly funded and constructed by the City of Warrnambool and the Department of Natural Resources and Environment. This incorporates educational material for the public who gather at this location to observe the whales during winter.

NRE has prepared a contingency plan for dealing with stranded whales, dolphins and porpoises (The Victorian Cetacean Contingency Plan, NRE 1999).

A series of planned census flights, flights targeting individual animals for identification photography, an intensive effort to obtain incidental sightings during 1993 and a review of the entire series of incidental sightings accumulated for South Australia and Victoria has resulted in a comprehensive documentation of the occurrence of Southern Right Whales in these waters (Warneke 1989, 1993; Kemper *et al.* 1996). This program is continuing.

A PhD candidate at The University of Sydney (S. Burnell) studied Southern Right Whales at the Head of the Bight and also at Warrnambool between 1992 and 1996. This study concentrated on behaviour and some aspects of population dynamics.

The Museum of Victoria has a small series of partial skeletons of Southern Right Whale in its collection (Dixon and Frigo 1994) as has the South Australian Museum (C. M. Kemper *pers. comm.* 1997). Interpretive displays about whales have incorporated some of this material.

Intended Management Action

1. Enforce the provisions of the **Wildlife Act 1975** and the Wildlife (Whales) Regulations

1998 governing whale-watching activities and thus achieve greater protection from human disturbance.

2. Implement the exclusion of boats from Logan's Beach while whales are in residence.
3. Enforce adherence to published guidelines for the movement of aircraft over the Warrnambool coast. A standard Notice to Airmen (NOTAM) exists for air traffic in this area, which should be followed by both local and visiting pilots. Publicity concerning this instruction should be prominently displayed at the pilot's lounge at local airports.
4. Review recreational fishing and boating activity from the Hopkins River mouth east to the Mepunga Cliffs i.e. the inshore zone that is frequently utilised by cows with calves as a nursery site, to determine what type of exclusion zone for boating can be declared and enforced.
5. Ensure that the agreed Code of Practice for commercial fishing (CNR 1995) is implemented at appropriate times when whales are present in the Warrnambool area. This Code limits commercial fishing, including transit, within a designated area at specified times.
6. Prepare and implement an education and extension program, at both state and local levels, to ensure that the public is aware of the need for caution and concern for the species' welfare. Provide and maintain up-to-date displays and interpretation boards at Logan's Beach and the Tourist Information Centre, and at boat ramps and beaches close to Logan's Beach, harbours, viewing platforms and airports in the area. Encourage the Friends of the Southern Right Whale and Project Jonah in the promotion of conservation of the whale, by regular communication between NRE and these groups and their involvement in the preparation and implementation of the education program.
7. Co-ordinate the Victorian components of research being undertaken on this species:
 - Collaborate with national efforts to record Southern Right Whale activity, including the photographic identification of individuals as an aid to population studies, using aerial and shore-based cameras and standardised methods. Identify individual whales that visit the calving and nursery grounds and elsewhere on the Victorian coast.
 - Determine the habitat characteristics of the Logan's Beach area that make it attractive as a calving and nursery area, by

- comparison with other known calving and nursery sites throughout the species' range.
- Determine Critical Habitat for Southern Right Whale under the provisions of the **Flora and Fauna Guarantee Act 1998**.
8. Develop guidelines for the movement of shipping, particularly that to and from the proposed Minerva Gas Field development, to ensure that the general locations of whales are known to ships' captains, to better enable them to sight and avoid whales when possible. Provide information to coastal shipping management to ensure it is aware of the potential for whale-ship collisions during the early winter and late spring migration seasons. Enlist the support of ships' captains in the identification of whales and logging and reporting of the location of particular whales to allow for photo-identification missions.
 9. Negotiate the incorporation of protection measures for the species in development proposals. These measures should include the use of non-petrochemical based drilling muds, the on-shore disposal of wastes and extension of the oil spill plan (NRE 1997) to identify zones in which dispersants may be used in the deeper waters of the Otway Basin.
 10. Encourage better sewage treatment practice in municipalities adjacent to calving grounds. Water quality is an issue, due to the localised coastal sewage disposal program undertaken by the City of Warrnambool and the Towns of Port Fairy and Portland. The effects on Southern Right Whales are unknown, but untreated sewage has a detrimental effect on water quality.
 11. Encourage appropriate authorities to protect habitat through the development of catchment management guidelines to control industrial waste, plastic waste and other solids from storm-water drains and agricultural run-off. Negotiate, with Municipal planners, appropriate controls and management of residential development on the coast at Logan's Beach, where the incidence of development may have been detrimental to the habitat characteristics that may favour Logan's Beach as a calving and nursery site.

Other Desirable Management Action

12. Consider the use of radio-telemetry and satellite tracking, in conjunction with other States, to monitor movements between sub-populations and determine migration routes.

13. Consider participation in the sampling of tissue from resident animals during winter to assess genetic make-up of the population and to establish levels of bio-accumulation of pesticides and other pollutants. This should only occur as part of an Animal Experimentation Ethics Committee approved program.

Legislative Powers Operating

Legislation

Catchment and Land Protection Act 1994 - provides for the integrated management and protection of catchments and the control of noxious weeds and pest animals.

Conservation Forests and Lands Act 1987 - provides for the management of public land under the Act, the co-ordination of legislation administered by NRE and for the preparation of codes of practice.

Crown Land (Reserves) Act 1978 - provides for reserving areas as public land and for making a specific reservation status for existing public land.

Fisheries Act 1995 - provides controls for the management of fisheries.

Flora and Fauna Guarantee Act 1988 - provides for the protection of flora and fauna in Victoria through a range of mechanisms including controls over the handling of protected flora and listed fish.

National Parks Act 1975 - provides for the preservation, protection and management of natural areas and includes controls over taking native flora and fauna from parks.

Planning and Environment Act 1987 - provides for the protection of native vegetation through the State section, and for regional planning controls in all planning schemes.

Wildlife Act 1975 - provides for the management of wildlife (vertebrate animals other than fish, and Flora and Fauna Guarantee-listed invertebrates) and includes controls over the handling of protected wildlife. The status of the Southern Right Whale as protected wildlife makes the taking of it an offence under the Act unless an appropriate permit has been obtained.

Wildlife (Whales) Regulations 1998: provide for the control of persons and activities that may disturb whales in Victorian waters.

Licence/permit conditions

Permits for scientific study of the Southern Right Whale may be issued under the provisions of the **Wildlife Act 1975**. Applications are carefully assessed with regard to the benefit to the

conservation of the taxon. Research that might potentially interfere with the whales in their calving grounds or during calving or mating activities will not be permitted.

Research must be undertaken in such a manner as to ensure that the disturbance to the whales is minimised. Research activities must not be in breach of the Whale Watching Guidelines and must be seen to be so.

Consultation and Community Participation

Australian Conservation Foundation (ACF).

City of Warrnambool.

Environment Australia (formerly ANCA).

Environment Conservation Council (ECC).

Friends of the Southern Right Whale.

Marine Studies Group (now part of the Field Naturalists Club of Victoria).

Museum of Victoria.

National Threatened Species Network, Worldwide Fund for Nature.

Other fishing groups, both recreational and commercial.

Project Jonah (Victoria) Inc.

South Australian Museum.

South West Region Tourism Authority (SWRTA).

University of Sydney, Anatomy and Veterinary Departments.

Warneke Marine Mammal Services.

Warrnambool Fishermen's Association.

Western Australian Museum.

Implementation, Evaluation and Review

The Regional Managers, South West, Port Phillip and Gippsland Regions, and the Executive Director, Parks, Flora and Fauna Division, Department of Natural Resources and Environment will be responsible for the implementation of this Action Statement.

A review will take place in 2002 to ensure that the major conservation objectives are being met. A major review of the Action Statement will take place in 2004, at which time progress will be assessed and future direction for the program will be determined.

Contacts

Management

Flora and Fauna Management Officers in the following NRE Regions:

South West, Port Phillip and Gippsland.

Biology

Museum of Victoria.

South Australian Museum.

Western Australian Museum.

Flora and Fauna Program, NRE.

Warneke Marine Mammal Services.

Steve Burnell, *Eubalaena P/L.*

Personal communications

S. Burnell, University of Sydney, NSW.

Dr C. M. Kemper, Curator of Mammals, SA Museum.

Dr G. J. B. Ross, Australian Biological Resources Study (ABRS), Canberra.

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Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

This Action Statement was first published in 2000 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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