

# South Eastern Australian and Tasmanian Shelf Waters IMMA

## Summary:

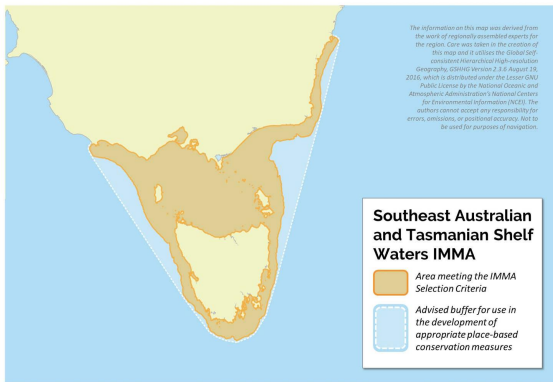
The South Eastern Australian and Tasmanian Shelf waters IMMA includes critical coastal, shelf and slope habitat off Victoria, New South Wales and Tasmania, Australia. The area extends from the Portland-Warrnambool region in the west to Jervis Bay in the east, and includes Tasmania and the Bass Strait from the coast to the 200m depth contour. The region encompasses critical habitat for a range of marine mammal species. The coastal area and bays also represent important habitat for large populations of common dolphin, Indo-Pacific and common bottlenose dolphins. The region is home to the Bonney Upwelling off Portland in western Victoria and the continental shelf and slope is also used for foraging by toothed whales such as Shepherd's beaked whales, strap-toothed beaked whales, killer whales, and pilot whales.

## Description:

The South Eastern Australian and Tasmanian Shelf Waters IMMA ranges from Cape Bridgewater west of Portland in western Victoria around the coast to Jervis Bay in New South Wales and includes Bass



Figure 1 – Southern right whale calf breaching off the Augusta coastline, as its mother rests. The Southwest Australian population of southern right whales is showing continued recovery. Photo credit: R.Harcourt.



## Area Size

237,286km<sup>2</sup>

## Qualifying Species and Criteria

Antarctic Blue Whale – *Balaenoptera musculus intermedia*  
Criterion A, C2, C3

Pygmy Blue Whale – *Balaenoptera musculus brevicauda*  
Criterion A, C2, C3

New Zealand fur seal – *Arctocephalus forsteri*  
Criterion C1, C2

Australian fur seal – *Arctocephalus pusillus doriferus*  
Criterion B1, C1, C2

Southern right whale – *Eubalaena australis*  
Criterion B2, C1

Humpback whale – *Megaptera novaeangliae*  
Criterion C3

## Marine Mammal Diversity (D2)

*Delphinus delphis*, *Tursiops truncatus*, *Tursiops aduncus*, *Arctocephalus tropicalis*, *Orcinus orca*, *Globicephala melas*, *Mirounga leonina*, *Caperea marginata*, *Physeter macrocephalus*, *Mesoplodon layardii*, *Mesoplodon grayi*, *Ziphius cavirostris*, *Mesoplodon densirostris*, *Mesoplodon bowdoini*, *Mesoplodon hectori*, *Hydrurga leptonyx*, *Balaenoptera borealis*

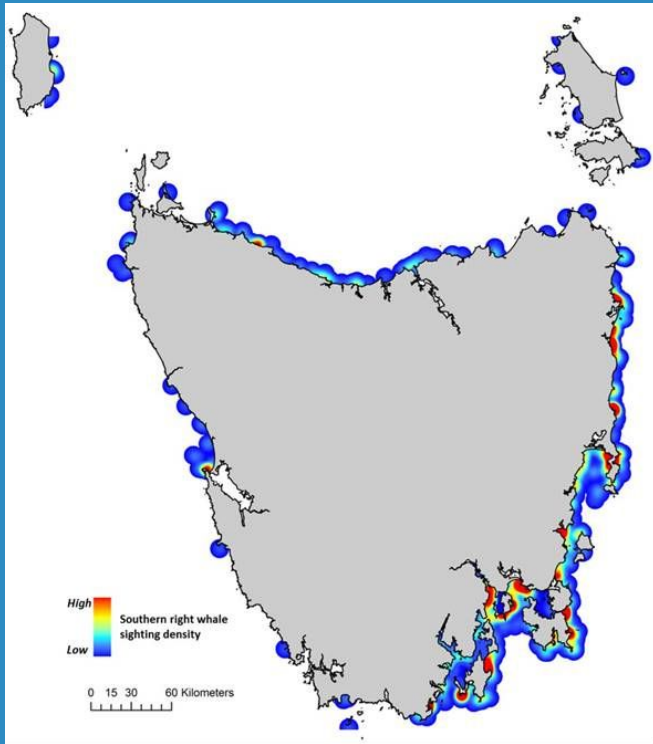


Figure 2 – Heat map showing sightings of southern right whales in Tasmania (1989-2018). Source: DPIPWE, unpublished data.

Strait and Tasmanian coastal waters to a depth of roughly 200m or 3nm off the coast. This area provides migratory, breeding and foraging habitat for many species including baleen whales such as blue whales, southern right whales, pygmy right whales and humpback whales, several dolphin species including common dolphins, Indo-Pacific bottlenose dolphins and killer whales as well as several species of pinnipeds, the Australian fur seal, New Zealand fur seal, southern elephant seal, leopard seal and sub-Antarctic fur seal. The area is also habitat for a number of toothed whales including sperm whales, pilot whales and several species of beaked whales.

The coastlines and bays represent important habitat and breeding areas for large populations of coastal common and Indo-Pacific bottlenose dolphins, including the Burrunan form, which represents a lineage that may eventually be recognized as a species endemic to southern Australian coastal waters. Genetic studies on the long-finned pilot whale from Tasmania saw a difference in the regional structure between the east and west coast of the state (Oremus et al. 2008 & 2013).

The sperm whale (*Physeter macrocephalus*) is red-listed as Vulnerable and large numbers were historically taken by commercial whalers off Tasmania (Gaskin, 1973; Bannister, 1974). This region encompasses nearly the entire breeding distribution of the Australian fur seal (*Arctocephalus pusillus doriferus*), except one small breeding colony on Kangaroo Island, South Australia (Mcintosh et al. 2018).

Though the southern right whale is listed as Least Concern on the IUCN Red List, the species is locally listed as Endangered under Australia's Environmental Protection and Biodiversity Conservation (EPBC) Act. There are two sub-populations in Australia, based on genetic differences and differing rates of increase (Carroll et al. 2011; 2015; DSEWPaC 2012; Harcourt et al. 2019). The south western sub-population occurs predominantly between Cape Leeuwin, Western Australia and Ceduna, South Australia. It comprises most of the Australian population and was estimated at around 3,500 individuals in 2018, increasing at an annual rate of approximately 6% per annum (Bannister 2017; Smith et al. 2019). The south eastern subpopulation occurs along the south eastern coast, from Ceduna in South Australia to Sydney (with regular sightings and calving as far north as Jervis Bay in New South Wales – the northern extent of the IMMA) and including Tasmania. The south eastern subpopulation is estimated to consist of fewer than 300 individuals, increasing at a rate of 4.7% per annum with no significant change in the annual abundance of mother-calf pairs at the only established calving ground (Logans Beach, Warrnambool) over the last 3 decades (Watson et al. 2015; DSEWPaC 2012, Stamation et. al. 2020).

## Criterion A – Species or Population Vulnerability

Blue whales (*Balaenoptera musculus*) are listed as Endangered on the IUCN Red List. Two recognized

subspecies (Antarctic blue whale and pygmy blue whale) occur within the central Bass Strait (Commonwealth of Australia 2015). This area is within the EPBC Act recognised as a biologically important area for foraging blue whales (CoA 2015). McCauley et al. (2018) suggests that acoustic detection of Antarctic blue whales indicate they predominantly occur along southern coastline that is included in this IMMA.

## Criterion B: Distribution and Abundance

### Sub-criterion B2: Aggregations

Important seasonal aggregations of multiple species occur within the IMMA including breeding aggregations of southern right whales in areas such as Warrnambool, and there are emerging aggregation areas along the Victorian coast eastwards from Portland and north to Jervis Bay in New South Wales (DSEWPac 2012). Specifically, the IMMA includes Logans Beach in Warrnambool which is the only known calving location for the south eastern subpopulation, and emerging aggregation areas at Port Fairy, Portland, Port Campbell and Peterborough in Victoria (DSEWPac 2012).

There is an important aggregation area for Australian fur seals off the coast of Victoria with the Seal Rocks and Lady Julia Percy Island colonies accounting for more than half of births, at least 12 years ago (Kirkwood et al. 2009). This region is an important aggregation area for both the pygmy and Antarctic blue whales. The south eastern section of the Bonney Upwelling (included in this IMMA) is the largest foraging aggregation of pygmy and Antarctic blue whales in Australian waters, associated with the aggregations of krill in the mid-shelf and slope waters (Gill and Morrice, 2003).

## Criterion C: Key Life Cycle Activities

### Sub-criterion C1: Reproductive

This area is important for the reproduction of

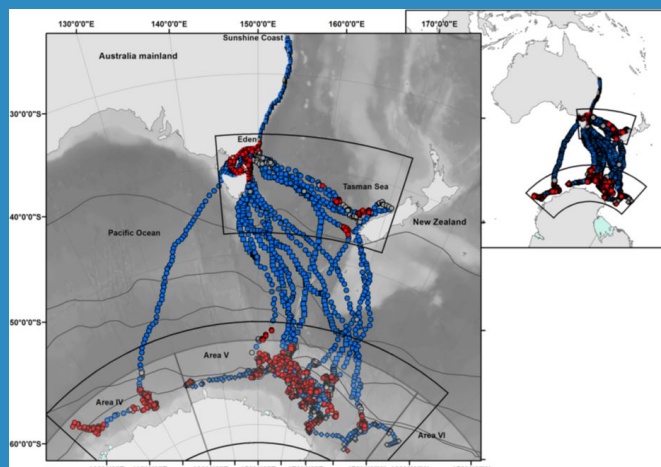


Figure 3 - Satellite tag tracks of humpback whales over three austral summers from 2008-11. (from Andrews-Goff et al. 2018)

Australian fur seals with the two colonies off Victoria accounting for more than half of the pups born (Seal Rocks 25.9%, Lady Julia Percy Island 25.5%) (Kirkwood et al. 2009; Kirkwood & Arnould 2011). New Zealand fur seals have also been recorded off the coast of south eastern Australia (including states: South Australia, Victoria, Tasmania, and New South Wales) with important breeding colonies in southwest Tasmania, the Skerries and Kanowna Island in the northeastern Bass Strait (Mcintosh et al. 2018). These colonies make up a relatively small percent of the population of New Zealand fur seals in Australian waters, with roughly 600 pups born between 2012-2014, making about 2,400 individuals, which equates to 2.5% of the Australian population (Shaughnessy et al. 2015). The south eastern Australian and Tasmanian regions contain a number of large, small and emerging calving grounds for southern right whales, which calves in shallow coastal embayments (Charlton et al. 2019a, 2019b, DSEWPac 2012; Watson et al. 2015; Carroll et al. 2011). Photo identification studies have identified thirteen breeding females with site fidelity to the Warrnambool site (Watson et al. *in review*), representing an important proportion of the south eastern population.

### Sub-criterion C2: Feeding Areas

The south eastern Australian region and Tasmania provide important foraging habitat for Australian fur

seals. They are benthic foragers, generally in shelf waters between 60-80 m deep, though studies have shown that in summer and spring, some males make use of deeper waters up to 200m deep (Salton et al 2019; Knox et al. 2017; Kirkwood & Arnould 2011). New Zealand fur seals have a number of breeding colonies within the Bass Strait and around the south western coast of Tasmania, and as such the surrounding seas provide a valuable foraging environment especially during breeding periods when females spend time at sea with intermittent visits to land (Lea & Hindell 1997). Australia's largest foraging ground for pygmy blue whales and Antarctic blue whales occurs in mid-shelf and slope waters in the Bonney Upwelling during summer and autumn and foraging habitat extends throughout the Bass Strait and Otway regions (the south eastern section of the Bonney Upwelling overlaps with this IMMA). The time and location of the appearance of blue whales in the east generally coincides with the upwelling of cold water in summer and autumn along this coast (the Bonney Upwelling) and the associated aggregations of krill that they feed on (Gill and Morrice, 2003). The IMMA is within the EPBC Act recognised as a biologically important area for foraging blue whales (CoA 2015).

### **Sub-criterion C3: Migration Routes**

The Bass Strait located between Tasmania and Victoria is an important migratory area for both subspecies of blue whales, with Antarctic blue whales primarily using the area from November till May (Gill et al. 2011), and pygmy blue whale vocalisations recorded in the centre of Bass Strait between April and June (McCauley et al. 2018). Coastal areas within this IMMA provide important connective habitat for southern right whale aggregation areas and important migratory routes for this species (DSEWPaC 2012). The coastal zone from 0-2 km from shore along the entire south coast of Australia represents important movement habitat for southern right whales. It appears that as abundance

increases, so does the degree of linkage between aggregation areas via such habitat (Charlton et al. 2019b). Movement of calving and non-calving adults has been recorded across broad distances both within and across seasons (Burnell 2001; Pirzl et al. 2009; Watson et al. 2021). Within-year movements averaged 730 km, over 34 days (Pirzl et al. 2009). The maximum reported within-season movement of an individual southern right whale across coastal southern Australia is 1,600 km (Watson et al. 2021). The south eastern Australian coastal region around Tasmania and eastern Australia constitutes important migratory habitat for humpback whales traveling between their feeding grounds in the Southern Ocean and their lower-latitude breeding grounds. Satellite tracking data over three austral summers showed that these areas are used for migration and resting (Andrews-Goff et al. 2018).

## **Criterion D: Special Attributes**

### **Sub-criterion D2: Diversity**

There is high diversity of marine mammals in this region, as shown through live sightings and stranding data. Species found in this region include cetaceans: Antarctic and pygmy blue, southern right, humpback, sperm, long-finned pilot, pygmy right and killer whales, strap-toothed, Gray's, Cuvier's, Blainville's, Andrew's and Hector's beaked whales, common, Indo-Pacific bottlenose and common bottlenose dolphins, and pinnipeds: New Zealand fur, Australian fur, Subantarctic fur, Leopard and southern elephant seals. Based upon stranding records from Australia, at least six species of beaked whales have been recorded between 1869-2010, indicating their presence within the area (Hamilton and Lindsay 2013). Maatsuyker Island, located approximately 12 km south of Tasmania, is a sporadically used breeding colony and regular haul-out site for a small number of southern elephant seals, with one to two pups being born in some years, and a monitoring program since 1989 (Tas DPIE 2005; Shaughnessy 1999). This region also has recorded sightings of leopard seals

(Warneke, 1995) indicating use of this area by some individuals. Sei whales have been recorded feeding at the Bonney Upwelling, as well as individuals sighted off the coast of Tasmania, including cows with calves (Gill et al. 2015; Ensor et al. 2002)

## Supporting Information

Andrews-Goff, V., Bestley, S., Gales, N.J., Laverick, S.M., Paton, D., Polanowski, A.M., Schmitt, N.T. & Double, M.C. 2018. Humpbackwhale migrations to Antarctic summer foraging grounds through the southwest Pacific Ocean. *Scientific Reports*, 8(1), pp. 1-14. [10.1038/s41598-018-30748-4](https://doi.org/10.1038/s41598-018-30748-4).

Arnould, J.P., Littnan, C.L. and Lento, G.M. 2000. First contemporary record of New Zealand fur seals *Arctocephalus forsteri* breeding in Bass Strait. *Australian Mammalogy*, 22(1), pp.57-62.

Arnould, J.P. and Littnan, C.L. 2000. Pup production and breeding areas of Australian fur seals *Arctocephalus pusillus doriferus* at Kanowna Island and The Skerries in north eastern Bass Strait. *Australian Mammalogy*, 22(1), pp.51-55.

Bannister, J. L. 1974. Whale populations and current research off Western Australia. In *The whale problem. A status report: 239- 254*. Schevill, W. E. (Ed.). Cambridge, MA: Harvard University Press.

Burnell, S. R. 2001. Aspects of the reproductive biology, movements and site fidelity of right whales off Australia. *Journal of Cetacean Research and Management* 2, 89-102.

Carroll, E., N. Patenaude, A. Alexander, D. Steel, R. Harcourt, S. Childerhouse, S. Smith, J. Bannister, R. Constantine & C. Scott Baker. 2011. Population structure and individual movement of southern right whales around New Zealand and Australia. *Marine Ecology Progress Series*, 432:257-68.

Carroll, E. L., Baker, C. S., Watson, M., Alderman, R., Bannister, J., Gaggiotti, O. E., ... & Harcourt, R. 2015. Cultural traditions across a migratory network shape the genetic structure of southern right whales around Australia and New Zealand. *Scientific reports*, 5, 16182.

Charlton, C., Ward, R., McCauley, R. D., Brownell Jr., R. L., Salgado Kent, S., & Burnell, S. 2019a. Southern right

whale (*Eubalaena australis*), seasonal abundance and distribution at Head of Bight, South Australia. *Aquatic Conservation: Marine and Freshwater Ecosystems* 29, 576-588.

Charlton, C., Ward, R., McCauley, R. D., Brownell Jr., R. L., Guggenheimer, S., Salgado Kent S., & Bannister, J. L. 2019b. Southern right whales (*Eubalaena australis*) return to a former wintering calving ground: Fowlers Bay South Australia. *Marine Mammal Science*, 35(4), 1438-1462.

Charlton-Robb, K., Gershwin, L.A., Thompson, R., Austin, J., Owen, K. and McKechnie, S. 2011. A new dolphin species, the Burrnun dolphin *Tursiops australis* sp. nov., endemic to southern Australian coastal waters. *PLoS One*, 6(9):. e24047. doi:10.1371/journal.pone.0024047

Commonwealth of Australia (CoA). 2015. Conservation Management Plan for the Blue Whale - A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999 Available from: <https://www.environment.gov.au/system/files/resources/9c058c02-afd1-4e5d-abff-11cac2ebc486/files/blue-whale-conservation-management-plan.pdf>

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). 2012. Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the Environment Protection and Biodiversity Conservation Act. 1999 (2011-2021), Available at: <http://www.environment.gov.au/system/files/resources/4b8c7f35-e132-401c-85be-6a34c61471dc/files/e-australis-2011-2021.pdf>

Ensor, P., K. Sekiguchi, J. Cotton, R. Huckle-Gaete, T. Kariya, H. Komiya, D. Ljungblad, H. Marite, P. Olson & S. Rankin. 2002. 2001-2002 IWC-Southern Ocean Whale and Ecosystem Research (IWC-SOWER) Circumpolar Cruises, Area V. Available from the IWC secretariat. Cambridge, UK - unpublished.

Gaskin, D. E. 1973. Sperm whales in the western South Pacific. *N. Z. J. Mar Fresh. Res.* 7(1&2): 1-20. Final Report, Auckland Uniservices Limited: [https://data.marinemammals.gov.au/common/documents/grants/0607/Baker\\_15.pdf](https://data.marinemammals.gov.au/common/documents/grants/0607/Baker_15.pdf)

Gill, P. and M. Morrice. 2003. Cetacean Observations. Blue Whale Compliance Aerial Surveys. Santos Ltd Seismic Survey Program Vic/P51 and P52. November

– December 2002. Report to Santos Ltd.

Gill, P.C., M.G. Morrice, B. Page, R. Pirzl, A.H. Levings and M. Coyne. 2011. Blue whale habitat selection and within-season distribution in a regional upwelling system off southern Australia. *Marine Ecology Progress Series*, 421: 243–263. Available from: [http://www.intres.com/articles/meps\\_oa/m421p243.pdf](http://www.intres.com/articles/meps_oa/m421p243.pdf).

Oremus, M., Gales, R., Kettles, H. and Baker, C.S. 2013. Genetic evidence of multiple matriline and spatial disruption of kinship bonds in mass strandings of long-finned pilot whales, *Globicephala melas*. *Journal of Heredity*, 104(3), pp.301-311.

Salton, M., Kirkwood, R., Slip, D. and Harcourt, R. 2019. Mechanisms for sex-based segregation in foraging behaviour by a polygynous marine carnivore. *Marine Ecology Progress Series*, 624, pp.213-226.

Shaughnessy, P. D. 1999. *The Action Plan for Australian Seals*. Environment Australia, Canberra.

Shaughnessy, P. D., Goldsworthy, S. D., and Mackay, A. I. 2015. The long-nosed fur seal (*Arctocephalus forsteri*) in South Australia in 2013-14: abundance, status and trends. *Australian Journal of Zoology* **63**, 101–110.

Stamation, K., Watson, M., Moloney, P., Charlton, C., and Bannister, J. 2020. Population estimate and rate of increase of southern right whales *Eubalaena australis* in southeastern Australia. *Endangered Species Research*, Vol 41 pp 375-385.

Tasmanian Department of Primary Industries and Environment (Tas DPIE). 2005. *Part B A survey methodology to monitor population change in Sub-antarctic fur seals and Southern elephant seals*. Second part of a report on *Population monitoring for Sub-antarctic fur seals (Arctocephalus tropicalis) and Southern elephant seals (Mirounga leonina)* for the Department of the Environment & Heritage. Unpublished report by the Nature Conservation Branch of the Tasmanian Department of Primary Industries and Environment.

Watson M, Westhorpe I, Bannister J, Hedley S, Harcourt R. 2015. Final report on the assessment of numbers and distribution of southern right whales in Southeast Australia. Report to the Australian Marine Mammal Centre.

Watson, M., Stamation, K. and Charlton, C., 2021. Calving rates, long-range movements and site fidelity of southern right whales (*Eubalaena australis*) in south-eastern Australia. *J. Cetacean Res. Manage.*, 22(1), pp.17-28.

**MARINE MAMMAL PROTECTED AREAS TASK FORCE**

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