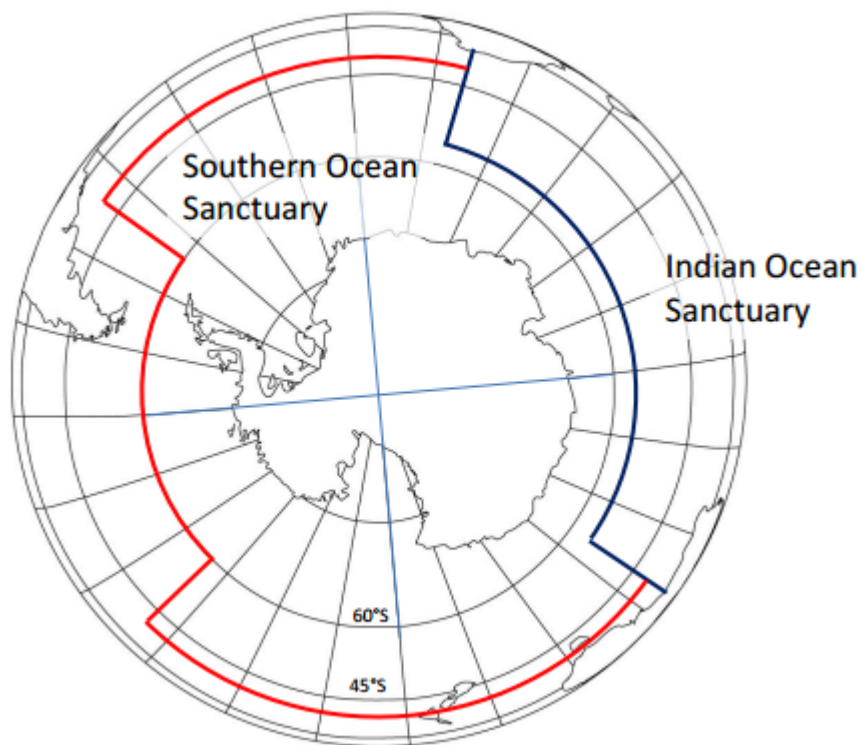


## Southern Ocean Sanctuary Management Plan

Revised August 2018

The Southern Ocean Sanctuary, established under paragraph 7(b) of the Schedule to the International Convention for the Regulation of Whaling (the Convention), was adopted in 1994. It covers the waters of the Southern Ocean around Antarctica (Figure 1). The exact geographic coordinates for the Southern Ocean Sanctuary are given in paragraph 7(b) of the Schedule to the Convention.

The northern boundary of the Southern Ocean Sanctuary partially coincides with the southern boundary of the Indian Ocean Sanctuary. The Indian Ocean Sanctuary covers the whole of the Indian Ocean south to 55°S. The combined effects of the two sanctuaries is to provide a high level of protection from future commercial whaling by member states of the International Whaling Commission for the populations of great whales that breed in the Indian Ocean.



**Figure 1.** Boundary of the Southern Ocean Sanctuary. The southern boundary of the Indian Ocean Sanctuary coincides with the northern boundary of the Southern Ocean Sanctuary. Factory ship whaling is forbidden in southern hemisphere waters north of 40°S.

### Objectives of the Southern Ocean Sanctuary

The Southern Ocean Sanctuary proposal, put forward by France, stated that the primary purpose of the Sanctuary is to “contribute to the rehabilitation of the Antarctic marine ecosystem by reinforcing and complementing other measures for the conservation of whales and the regulation of whaling, in particular by the protection of all Southern Hemisphere species and population of baleen whales and the Sperm whales on the feeding grounds” (IWC/44/19).

In 2014 the Commission adopted the following objectives for the Southern Ocean Sanctuary:

1. Contribute to the rehabilitation of a marine ecosystem damaged by the over-exploitation of whales and allow for the restoration of a complex of whale species and populations.
2. Secure a long-term satisfactory habitat for cetaceans and other marine life.
3. In combination with the Indian Ocean Sanctuary, fully protect at least one population of each of the great whales throughout its migratory range and life-cycle, i.e. on feeding and breeding grounds, to provide for their long-term conservation.
4. Provide a reference area to allow for the collection of information on levels and trends on unexploited and recovering whale populations.
5. Allow for the monitoring of the recovery of ecosystems without their being disturbed by further commercial whaling
6. Allow for coordinated research on the effects of environmental change on whale stocks.
7. Allow for the Comprehensive Assessment of the effects of setting zero catch limits on whale stocks.
8. Allow for application of the Revised Management Procedure (RMP) to be phased in over limited geographic ranges and species.

#### **Review of the Southern Ocean Sanctuary and recent recommendations**

The Schedule amendment establishing the Southern Ocean Sanctuary (SOS) requires the Sanctuary to be reviewed at succeeding ten year intervals, unless otherwise revised by the Commission. The first review of the Sanctuary took place in 2004 and the second review was completed in 2016. In 2014 the Commission adopted objectives given above and provided terms of reference for the review to be undertaken by the Scientific and Conservation Committees. The Scientific Committee in its review (IWC, 2016) made the following recommendations:

- Each SOS objective should be linked to an appropriate performance measure.
- Appropriate performance measures for the SOS should be developed. These should link the objectives of the SOS with field monitoring programmes.
- Performance measures for some scientific objectives could draw on existing mechanisms, such as the In-Depth assessment process.
- The SC could provide suggestions for appropriate performance measures in relation to the scientific objectives of the SOS to the Commission in future, should the Commission request it.
- Outputs from existing and planned research programmes should be incorporated into the development of a management plan for the SOS and subsequent monitoring programmes.
- A management plan for the SOS should be developed to clearly outline the broad strategies and specific actions needed to achieve Sanctuary objectives. This information could be collated, based on the SC's recent relevant activities.

These recommendations were taken into account in drafting the management plan.

#### **Purpose of the Southern Ocean Sanctuary Management Plan**

The purpose of this Management Plan is twofold: 1) to inform the Commission and public about the Sanctuary objectives and actions planned for the next ten years, and 2) to propose strategies toward the achievement of the Sanctuary's goals using the best means available and point out clear performance measures for each proposed action.

### **Structure and scope of the Southern Ocean Sanctuary Management Plan**

This Plan is designed to guide the mitigation of threats faced by whales and the assessment of their recovery for the next ten years in the Southern Ocean Sanctuary. The operative part of this Plan is the Research and Action Plan. The Research and Action Plan is key to achieving the objectives of the Southern Ocean Sanctuary concerning (1) the assessing and addressing of threats and (2) the research on the recovery of whale populations and their habitats.

The Research and Action Plan is structured around the Commission's agreed objectives for the Southern Ocean Sanctuary. Each objective is linked directly to a measureable objective, action or approach and performance measure.

#### *Commission Objectives*

The objectives given above describe in general terms the desired outcomes of the Southern Ocean Sanctuary concerning the conservation and management of whales.

#### *Measurable Objectives*

A measureable objective is one that can be objectively assessed based on outcomes that can be expressed quantitatively or can be assessed against defined criteria that allow a statement of whether or not it has been achieved. The Commission's general objectives are deemed to be met when the measurable objectives are met

#### *Approach/Action*

An Approach/Action outlines how the measureable objectives will be progressed. Actions are activities developed and implemented to contribute to achieving the measureable objectives.

#### *Performance Measure*

A performance measure is a direct measure consequent to a measurable objective that allows for a judgement to be made about progress towards meeting it.

The Research and Action Plan takes into account a number of threats faced by whale populations both inside the Southern Ocean Sanctuary, in the adjacent Indian Ocean Sanctuary and other waters in the Southern Hemisphere. These threats include by-catch and entanglement, vessel collisions, effects on whale habitat of climate change and ocean acidification, marine pollution, competition with fisheries and marine noise. The Commission has made considerable progress in its efforts to address these threats globally. This management plan provides for this progress to be evaluated in the specific context of the Southern and Indian Ocean sanctuaries.

### **Coverage of the Management Plan**

This Management Plan focuses on all great whale species that were subject to commercial whaling within the area subsequently covered by the Southern Ocean Sanctuary<sup>1</sup>. The species covered by the Management plan are listed below and a summary of the state of knowledge on these species as of 2014 is given in Appendix 1. Any reference in this plan to "all species" means all stocks of the species listed below that spend at least part of the year in the Sanctuary.

- Blue whale
- Pygmy blue whale

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<sup>1</sup> Specifically paragraph 7b states "This prohibition applies irrespective of the conservation status of baleen and toothed whale stocks in this Sanctuary, as may from time to time be determined by the Commission"

- Fin whale
- Sei whale
- Antarctic minke whale
- Common minke whale
- Humpback whale
- Southern right whale
- Sperm whale
- Killer whale

### **Implementation of the Management Plan**

The implementation of this management plan will require cooperation and coordination among national and international government agencies, as well as private organizations and individuals. The management plan is designed to provide guidance for researchers and policy makers to facilitate policy development and research within an ecosystem context, particularly through information exchange and the coordination of research.

#### *Role of Scientific and Conservation Committees*

The Scientific and Conservation Committees should include standing agenda items to report progress to the Commission's biennial meetings. This will ensure that the Commission, public, researchers, and other interested parties are apprised of progress and will enable resource gaps to be identified and will improve communication among researchers, stakeholders and the general public.

### **Communicating the Management Plan**

The Secretariat with the assistance of the Scientific and Conservation Committees will compile and maintain a contact list of intergovernmental organisations, range states not members of the IWC, NGOs, polar programmes, scientists and SORP project investigators. This list will be used both to provide and to seek information relevant to the implementation of this plan. The Secretariat will establish a web page informing the public about the SOS and maintain an appropriate digest of matters relating to the progress of the management plan.

### **Duration of the Management Plan**

The Sanctuary management plan should be reviewed and refined every ten years to account for ecological, oceanographic and other possible changes in an adaptive fashion.

### **Performance and limitations of the Management Plan**

A fundamental aspect of the SOS Management Plan is to enable regular and continuing performance evaluation. Regular evaluation of progress is required in order to identify aspects that can be improved or that require more attention.

Given that the recovery of severely depleted populations will take many decades, it is not realistic to suppose that the Commission's objectives will all be met in the ten year life of this management plan. Consequently, the measurable objectives are framed in terms of whether progress is in the appropriate direction. The success of the actions proposed by this management plan is closely linked to the availability of budget, secretariat support and logistic/research support from a range of agencies. Many of the actions that will contribute to the overall success of the plan fall outside the regulatory competence of the IWC. In such cases the actions required of the IWC are to inform other agencies about steps that they might take to improve the conservation and management of whales and their habitats.

## The Research and Action Plan

**Objective 1: Contribute to the rehabilitation of a marine ecosystem damaged by the overexploitation of whales and allow for the restoration of a complex of whale species and populations.**

This objective is deemed to be met by the existence of the Sanctuary, and hence it does not require measurable objectives or performance measures.

**Objective 2: Secure a long term satisfactory habitat for cetaceans and other marine life.**

This objective is interpreted in the context of Southern Ocean sanctuary on its own, and hence deals primarily with threats to the species on their feeding grounds in the Southern Ocean.

Measureable objective	Approach/Action	Performance measure
Encourage complementary actions from international agencies.	<p>Liaise/transmit information about whales and their habitat with relevant organisations.</p> <p>Receive information from relevant organisations on actions to mitigate environmental threats.</p> <p>Collaborate with IMO on development of the Polar Code for shipping.</p>	<p>IWC designated Observers have engaged and reporting on key meetings: at CEP, CCAMLR, IMO, FAO, and UNEP<sup>2</sup>.</p> <p>Secretariat transmits recommendations from the IWC to relevant organisations and seeks information about any consequent actions taken.</p>
Encourage the sustainable management of krill fisheries by CCAMLR consistent with its ecosystem approach.	<p>Receive information from CCAMLR about krill, status of krill predators, measured by CEMP.</p> <p>Transmit information about whales and their habitat to CCAMLR.</p>	Collaboration between the respective scientific committees to examine interactions between krill and dependant species.

**Objective 3: In combination with the Indian Ocean Sanctuary, fully protect at least one population of each of the great whales throughout its migratory range and life-cycle, i.e. on feeding and breeding grounds, to provide for their long-term conservation.**

With respect to commercial whaling this objective is also attained by maintaining the existing legal protections and management measures for the combined Southern and Indian Ocean sanctuaries, and in this sense this objective has the same measurable objective and actions as set out under objective 1.

This objective is additionally interpreted here as actions that could be taken to mitigate other threats to at least one population of each species that occur across their full migratory ranges

<sup>2</sup> See appendix 2 for a list of acronyms.

covered by the combined SOS and Indian Ocean Sanctuary areas. Of course these actions are relevant to all ocean areas adjoining the SOS.

Measurable objective	Approach/Action	Performance measure
Encourage Contracting Governments, range States, particularly in the Indian Ocean, IGOs and NGOs to address threats identified by the IWC.	<p>Liaise/transmit information about whales and threats with relevant organisations including range states, regional fisheries management organisations, IGOs and NGOs.</p> <p>Receive information from relevant organisations on actions to mitigate environmental threats.</p>	<p>IWC designated Observers have engaged and reporting on key meetings of IMO, FAO, and UNEP. Observers have also report on meetings of regional bodies that consider marine conservation and management.</p> <p>Secretariat has transmitted recommendations from the IWC to relevant organisations and sought information about any consequent actions taken.</p>
Contribute to a reduction in whale-vessel collision rates.	<p>a) Initiate/promote a broad and long-term program to evaluate the degree of overlapping between vessel routes and the distribution of whale populations.</p> <p>b) Estimate rates of whale-vessel strikes and identify areas of higher risk.</p> <p>c) Evaluate and propose mitigation actions if appropriate.</p> <p>d) Contribute data to the IWC vessel-strike database.</p>	<p>Information provided to IGOs and range states on best practice to reduce risks of whale-vessel collisions.</p> <p>Actions taken to reduce risks of whale-vessel collisions.</p>
Reduce mortality due to entanglements in fishing gear.	<p>a) Study overlap between fisheries and the distribution of whale populations.</p> <p>b) Promote cooperation with fishing industry and other stakeholders in order to minimise entanglements.</p> <p>c) Develop and promote best practice plans to mitigate entanglements.</p>	<p>Information provided to IGOs, RFMOs and range states on best practice to mitigate whale entanglements.</p>

Measurable objective	Approach/Action	Performance measure
	d) Promote capacity building under the IWC disentanglement program.	
Identify significant feeding and breeding grounds for important populations of great whales in SOS.	<p>Improve and deploy satellite tracking and remote sensing methods for identifying whale migration routes.</p> <p>Collaborate with relevant research programmes to improve remote sensing to measure the distribution, production and abundance of krill.</p>	<p>Improved information on whale distributions and migration routes.</p> <p>Improved information about krill distributions.</p> <p>Improved information on whale foraging behaviour.</p>

**Objective 4: Provide a reference area to allow for the collection of information on levels and trends on unexploited and recovering whale populations**

In practical terms some of the information on recovering populations is most efficiently collected outside the Southern Ocean Sanctuary, particularly in the case of populations that migrate or breed near coasts.

Measurable Objective	Approach/Action	Performance measure
<p>Continue baleen whale abundance research.</p> <p>Continue to develop acoustic methods for measuring trends for some species.</p>	<p>Develop cost- feasible methods for estimating the abundance of baleen whales in the Southern Ocean Sanctuary.</p> <p>Take account of information provided under NEWREP-A.</p>	<p>Information about methods, abundance and trends in abundance continues to accrue.</p>

**Objective 5: Allow for the monitoring of the recovery of ecosystems without their being disturbed by further commercial whaling.**

The measurable objectives relates to monitoring of Southern Ocean marine ecosystems.

Measureable objective	Approach/Action	Performance measure
Support ecosystem monitoring programs.	Develop and maintain collaborations through SORP, CCAMLR, SCAR, SCOR, SOOS, NEWREP-A.	IWC provides information that contributes to the implementation and analyses of ecosystem monitoring programs

**Objective 6: Allow for the coordinated research on the effects of environmental change on whale stocks.**

Measureable Objective	Approach/Action	Performance measure
Contribute to long term strategic research programs to gather relevant information about environmental change and its effects on whale stocks.  Contribute to the development methods for predicting the environmental effects on whale prey, such as Antarctic krill.	Develop and maintain collaborations through SORP, CCAMLR, SCAR, SCOR, SOOS, NEWREP-A. Contribute information about whales and their habitats to relevant international research programmes.	Collaboration with relevant scientific programmes to examine effect of environmental change on marine ecosystems, including interactions between primary production, krill and dependant species.

**Objective 7: Allow for the Comprehensive Assessment of the effects of setting zero catch limits on whale stocks.**

Measureable Objective	Approach/Action	Performance measure
Continue to develop comprehensive assessments for SOS species.	Scientific Committee to continue its work on comprehensive assessments.	Continuing Progress on comprehensive assessments.



**Objective 8: Allow for application of the Revised Management Procedure (RMP) to be phased in over limited geographic ranges and species.**

Paragraph 7b of the Schedule (which establishes SOS) would have to be amended before the RMP/RMS could be applied to any region currently included in the sanctuary.

Measureable Objective	Approach/Action	Performance measure
Assess the evolution of the RMP/RMS before amending the SOS.	Application of the RMP/RMS has been demonstrated elsewhere that it can be applied successfully	RMP/RMS is found to be able to be applied with a broad and stable consensus within the IWC
Examine effects on the RMP of the potential application of new technologies for the long-range detection of whales or developments in methods for the estimation of whale abundance	Revised simulation trials	RMP found to be robust or otherwise modified

**References**

- IWC, 1993. IWC/44/19. A southern Ocean Whale Sanctuary Proposal by the Government of France. *Rep. int. Whal. Commn* 43:41-8.
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- IWC, 2017. Report of the Scientific Committee. *J. Cetacean Res. Manage.* 18 (SUPPL.), 2017
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## Appendix 1.

### Abundance and trend estimates for whales' stocks found in the Southern Ocean (Annex Q, 2014).

Species	Stocks	Trends in abundance (period, CV, reference)	Most recent abundance estimate (Year, CV, reference)	Observation
Blue whale	Areas I-IV	2.5-8.4%/year (1978/79-1997/98, Branch, 2007)	2,280 (1991/92-1997/98, CV=0.36, Branch, 2007)	
Pygmy blue whale	Areas I-VI	NA		
Fin whale	Areas I-VI	NA	5,500 (1996, CV=XX, Branch and Butterworth, 2001)	Only includes animals south of 60oS
Sei whale	Areas I-VI	NA	NA	
Antarctic minke whale	Areas I-VI	515,000 (1992/93-2003/04, CV=XX, IWC, 2013)		
Common minke whale	Areas I-VI	NA	NA	
Humpback whale	BSA (Brazil)	7.4%/year (1995-1998, CV=0.45, Ward et al., 2011)	6,400 (2005, CV=0.11, Andriolo et al., 2010)	
Humpback whale	BSB1 (central-west Africa)	NA	6,800 (2001-5, CV=XX)	
Humpback whale	BSB2 (central-west Africa)	NA		
Humpback whale	BSC1 (eastern Africa)	9-12.3%/year (1988-2002, Findlay et al., 2006)	6,808 (2001, CV=0.14, Findlay et al., 2011)	
Humpback whale	BSC2	NA	NA	
Humpback whale	BSC3 (Madagascar)	NA	7,406 (2006, CV=0.37, Cerchio et al., 2009)	
Humpback whale	BSC4	NA	NA	
Humpback whale	BSD (West Australia)	12.9%/year (1999-2008, CV=0.2, Hedley et al., 2010)	NA	
Humpback whale	BSE1 (East Australia)	10.9%/year(1984-2010, CV=XX, Noad et al., 2011)	14,522 (2010, CV=XX, Noad et al., 2011)	
Humpback whale	BSE2+E3+F (Oceania)	NA	4,329 (1999-2005, CV=0.12, Constantine et al., 2012)	
Humpback whale	BSG	NA	6,504 (2006, CV = XX, Felix et al., 2011)	
Southern right whale	Southwest Atlantic	~6.2%/year (IWC, 2013)	4,030 (2009, IWC, 2013)	
Southern right whale	South Central Atlantic	NA	80 (2009, IWC, 2013)	
Southern right whale	Southern Africa	~6.8%/year (IWC, 2013)	4,410 (2009, IWC, 2013)	
Southern right whale	Southwest Pacific/Mainland NZ	NA	NA	
Southern right whale	Southwest Pacific/Sub Antarctic NZ	~7%/year	2,670 (2009, IWC, 2013)	
Southern right whale	SE Australia	NA	NA	

Species	Stocks	Trends in abundance (period, CV, reference)	Most recent abundance estimate (Year, CV, reference)	Observation
Southern right whale	South Central Australia/SW Australia	~6.8%/year	2,420 (2009, IWC, 2013)	
Southern right whale	SE Pacific (Chile/Peru)	NA	NA	
Sperm whales	Divisions 1-9	NA	11,599 (1991/92-1997/98, CV=0.20, Branch and Butterworth, 2001)	Only includes mature males south of 60oS

Appendix 2

**List of Acronyms**

<b>CCAMLR</b>	Commission for the Conservation of Antarctic Marine Living Resources
<b>CEMP</b>	CCAMLR Ecosystem Monitoring Programme
<b>CEP</b>	Committee for Environmental Protection under the Antarctic Treaty
<b>FAO</b>	Food and Agricultural Organisation of the United Nations
<b>IGO</b>	Inter-Governmental Organisation
<b>IMO</b>	International Maritime Organisation
<b>NGO</b>	Non-Government Organisation
<b>RFMO</b>	Regional Fisheries Management Organisation
<b>SCAR</b>	Scientific Committee for Antarctic Research
<b>SC-CCAMLR</b>	Scientific Committee for the Conservation of Antarctic Marine Living Resources
<b>SCOR</b>	Scientific Committee on Oceanic Research
<b>SORP</b>	IWC Southern Ocean Research Partnership
<b>SOOS</b>	Southern Ocean Observing System (SCAR and SCOR)
<b>SOS</b>	Southern Ocean (Whale) Sanctuary
<b>RMS</b>	Revised Management Scheme
<b>RMP</b>	Revised Management Procedure
<b>UNEP</b>	United Nations Environment Programme