

---

# GUIDELINE TO MITIGATE MARINE MAMMAL ENTANGLEMENT FOR THE SALDANHA BAY AQUACULTURE DEVELOPMENT ZONE

---



29 April 2020

VERSION 1



**environment, forestry  
& fisheries**

Department:  
Environment, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

<b>PREPARED BY:</b>		
	<b>Department of Environment, Forestry and Fisheries</b> Private Bag X2 Roggebaai, 8001 Tel: +27 (0)21 402 3911 Contact persons: Mrs Michelle Pretorius	
	<b>REVIEWED BY:</b>	
Department of Environment, Forestry and Fisheries (DEFF): Fisheries Branch: Aquaculture and Economic Development; and Compliance and Monitoring; Department of Environment, Forestry and Fisheries (DEFF): Environment Branch; Compliance and Monitoring; The Western Cape Department of Environmental Affairs and Development Planning (DEA&DP): Development Management (Region 1); and Biodiversity and Coastal Management; Transnet National Ports Authority (TNPA): Real Estate Management; and Environmental; Department of Agriculture (DoA): Farmer Support and Development;		
Report should be cited as: Department of Environment, Forestry and Fisheries. 2020. Saldanha Bay Aquaculture Development Zone Entanglement Guideline.		
<b>Approved by:</b>		
Name	Mr F Endemann	Ms M Naiker
Designation	AMC co-chair	AMC co-chair
Signature		
Date	27/05/2020	25 May 2020

# Table of Contents

1. Preamble .....	4
2. Background .....	4
Table 1: Entanglement Prevention Guideline .....	5
3. Action to be taken in the Event of an Entanglement .....	6
4. Reference List .....	6
5. Contact List .....	7

# 1. Preamble

- 1.1. The approved Environmental Management Programme (EMPr) for the Saldanha Bay Aquaculture Development Zone (ADZ) requires the development of a guideline for the prevention and management of marine mammals in the aquaculture infrastructure (which includes ropes, cages and rafts).
- 1.2. This Guideline is a synthesis of inputs from the aquaculture industry, academic research institutes and is based on a specialist opinion on the most appropriate measures to prevent entanglement submitted by Dr Simon Elwen of Sea Search (Elwen 2020). It represents a practical guide for the implementation of preventative measures without compromising compliance with regulatory requirements of the Transnet National Ports Authority (TNPA).
- 1.3. This guideline is to be implemented by all holders of aquaculture Marine Rights in the Saldanha Bay ADZ. Compliance will be monitored (as necessary) by the appointed Environmental Control Officer (ECO) and will be reported on in the monthly ECO reports.

# 2. Background

- 2.1 Fisheries bycatch is acknowledged as one of the largest threats to cetacean populations globally (IWC 2010, FAO 2018). "Entanglements" may occur in a broader range of anthropogenic materials including "ghost" gear, shark nets, free floating plastic or ropes, mooring lines and increasingly aquaculture farms – the latter being applicable to this Guideline.
- 2.2 Three main mammalian taxa that are vulnerable to entanglement in aquaculture infrastructure in the Saldanha ADZ are:
  - Whales and dolphins; and,
  - Seals.
- 2.3 There are few records of interactions between baleen whales and aquaculture as a consequence of low numbers of individuals inshore and small spatial overlap of the mostly pelagic baleen whales with aquaculture farms which are mostly placed within protected coastal waters. The risk of whales becoming entangled in ADZ aquaculture infrastructure is therefore very low.
- 2.4 Oceanic dolphins (Delphinidae) are the only members of the toothed cetaceans with a coastal and shelf habitat in Southern Africa. Dolphins include the Heaviside's dolphin (the smallest) (*Cephalorhynchus heavisidii*) to the largest species the killer whale (*Orcinus orca*). Although there may be seasonal movements along the coast and changes in local numbers, these dolphins are all resident. All dolphins are predatory, eating fish or squid (only the killer whale is known to predate on other mammals in our waters). Dolphins and whales rarely become entangled in single ropes. The risk of dolphins becoming entanglement in the Saldanha Bay ADZ aquaculture infrastructure is consequently low.
- 2.5 The only resident seal in South Africa is the Cape fur seal *Arctocephalus pusillus pusillus*. They are similar in overall body size to most of the oceanic dolphins. They are more susceptible to bycatch in nets, rather than ropes. However, they are prone to becoming entangled around the neck in much smaller ropes and twines including fishing line.
- 2.6 In summary, the most likely animals to become entangled are seals. The precautions detailed in the table below attempt to minimise the risk of such entanglements. It is clear that the ropes (mooring and production) of the bivalve farms and the nets of the finfish farms pose the biggest risk to marine mammals. The focus of this guideline is therefore on those components of the aquaculture infrastructure.
- 2.7 Also of concern is the entanglement of birds in the nets covering the finfish cages.
- 2.8 The following table defines the requirements of this guideline in the Saldanha ADZ to prevent entanglement of marine mammals.

Table 1: Entanglement Prevention Guideline.

ID	Mitigation Measure / Procedure	Monitoring
<b>ALL FARMS</b>		
<b>Farm placement</b>		
1	Outer Bay North and South farms should be placed as close together as possible without compromising the productivity of the installations.	Record <b>presence and number</b> of whale and dolphin species observed within ~1 km of the farms and reported in the monthly farm monitoring reports to the ADZ ECO As above. Any vessel strikes or entanglements <b>must</b> be recorded and reported to the ADZ ECO.
2	Support and service vessels should drive with caution and avoid mammals	
<b>Farm structure and design</b>		
3	Anchor lines used should not have any loose ends to minimise entanglement risk.	Ongoing visual inspection and maintenance of ropes, moorings etc.
4	Any groundlines used must be made completely of sinking line.	Ongoing inspection and maintenance of surface ropes, moorings etc. to ensure no unused or loose lines
5	Non-mooring ropes such as for marker buoys should be minimized and not have loose ends.	Ongoing inspection and maintenance of ropes, moorings etc.
<b>FIN FISH FARMS</b>		
6	<p><b>Above water anti-predator barriers</b> to prevent seals entering farms:</p> <ol style="list-style-type: none"> <li>1. Electric fencing</li> </ol> <p>If netting is used it should be:</p> <ol style="list-style-type: none"> <li>2. Highly visible (i.e. not mono-filament)</li> <li>3. Sufficiently high as to prevent seals climbing over it</li> <li>4. Use a fine mesh (5 cm or less) to minimize entanglement</li> </ol> <p>Other:</p> <ol style="list-style-type: none"> <li>5. Reduce resting places for seals on the cages</li> </ol>	Ongoing inspection and maintenance of nets, ropes, moorings etc.
7	<p><b>Below water anti-predator nets</b> should be</p> <ol style="list-style-type: none"> <li>1. Constructed of as small a mesh as possible, maximum 6 cm</li> <li>2. Closed at the bottom and sides and kept clear of the sea floor</li> <li>3. Weighted or moored to keep sides taut</li> <li>4. Well separated from main fish farm net (ideally with rigid poles)</li> <li>5. Repaired immediately if damage is observed</li> </ol>	Ongoing inspection and maintenance of nets, ropes, moorings etc.

### 3. Action to be taken in the Event of an Entanglement

In the event of entanglement, the following actions must be taken. It is important to remember that speed is paramount. These animals are air-breathing and delayed response can result in them drowning. They are simultaneously at risk of permanent injury from ropes and nets, especially if they start to struggle to free themselves.

1. **Do not attempt to free the animals yourself.**
2. **Remain on the scene. Maintain visual contact with the animal.**
3. **Immediately contact the NSRI / SANParks on the emergency numbers overleaf.**
4. Provide the following information:
  - a. Type of animal(s) involved
  - b. Number of animals involved
  - c. Nature of entanglement and if possible nature rescue equipment required
  - d. Exact location of the entanglement
  - e. Current state of the animal (stressed/ inert etc.) – any visible injuries.
5. If the animal appears to be distressed by your proximity, move away slightly but maintain visual contact wherever possible.
6. Remain on site to guide the rescue teams to the animal through submerged infrastructure
7. Prevent unauthorised vessels from approaching
8. Assist SANParks and/ or TNPA with the release of the animal under their instruction
9. Contact the other parties on the contacts list and inform them of the incident.
10. Complete an incident report form and submit to the ADZ ECO

### 4. Reference List

FAO 2018 Report of the Expert Workshop on Means and Methods for Reducing Marine Mammal Mortality in Fishing and Aquaculture Operations, Rome, 20-23 March 2018.

IWC 2010 Report of the Scientific Committee. Annex I. Report of the Working Group on Stock Definition. J Cetacean Res Manag:10–23

Kemper CM, Pemberton D, Cawthorn M, Heinrich S, Mann J, Wursig B, Shaughnessy P, Gales R 2003 Aquaculture and marine mammals: Co-existence or conflict? In: Gales N, Hindell M, Kirkwood R (eds) Marine Mammals: Fisheries, Tourism and Management Issues. CSIRO Publishing, Melbourne, p 208–225

Elwen, Dr S Guidelines and Standards to mitigate marine mammal entanglement for the Saldanha Bay Aquaculture Development Zone..Sea Search Research & Conservation. March 2020

## 5. Contact List

Designation	Name	Email	Telephone number
National Sea Rescue Institute	<b>In all cases the NSRI emergency contact number (National) is 112 from cell phone.</b>	<a href="mailto:info@searescue.org.za">info@searescue.org.za</a>	Mykonos office 082 990 5966
South African Maritime Safety Authority	Principal Officer Capt. M. Viljoen Deputy Principal Officer Mr. H. Esterhuizen SAMSA Duty Surveyor	<a href="mailto:saldanhabayoffice@samsa.org.za">saldanhabayoffice@samsa.org.za</a> <a href="mailto:Mviljoen@samsa.org.za">Mviljoen@samsa.org.za</a>	022 714 1612 0716241238 0832948617 0760777467
South African National Parks			office hours 022-7722144 after hours (16:00 to 07:00) 0710086472
Transnet National Ports Authority	Port Captain Willem Roux Acting Harbour Master Siiindele Mdlalose	<a href="mailto:Willem.Roux@transnet.net">Willem.Roux@transnet.net</a> <a href="mailto:Siiindele.Mdlalose@transnet.net">Siiindele.Mdlalose@transnet.net</a>	022 703 5472 0842912743
Saldanha Bay Municipality		<a href="mailto:mun@sbm.gov.za">mun@sbm.gov.za</a>	022 713 1815
ADZ Environmental Control Officer	Errol Cerff	<a href="mailto:ADZECOSaldanha@gmail.com">ADZECOSaldanha@gmail.com</a>	021 785 5664 082 451 6880
Saldanha Bay South African Police Services		<a href="mailto:saldanhasaps@saps.gov.za">saldanhasaps@saps.gov.za</a>	022-7148333, 022-7148308

