

**INSERT COMPANY LOGO**

# **Marine Fauna Interaction Management Plan**

Prepared By:

*Insert Author*

**Insert Month Year**

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## 1 Introduction

The Marine Fauna Interaction Management Plan has been developed to identify and mitigate potential impacts on marine fauna through direct and indirect interactions with the **INSERT LEASE NAME**. The plan includes a Marine Fauna Interaction Protocol, Marine Fauna Monitoring Program and an Observer Protocol have been prepared as a combined document as the matters are interrelated.

In accordance with consent condition **INSERT DETAILS (E.g. D12 & D12A of the State Significant Infrastructure Approval SS1-5118)**, the Marine Fauna Interaction Protocol component of this document details the following:

- **LIST DOT POINTS OF CONSENT CONDITIONS**
- **E.g. Details of the measures employed to remedy, alleviate and reduce the incidence of marine fauna interactions; and**
- **E.g. Details of an Observer Protocol**

The macrobenthic fauna monitoring has not been included in this plan as it has been incorporated within the Water Quality and Benthic Environment Monitoring Program.

**The INSERT LEASE NAME is located within a Habitat Protection Zone of the Jervis Bay Marine Park. In addition, vessels servicing the INSERT LEASE NAME may pass through other zones within the marine park. The marine park zones have various specific restrictions that apply to the protection of marine fauna which has been included in this plan.**

The Marine Fauna Interaction Management Plan will be supported with relevant policies, protocols, and safe work method statements to promote a comprehensive approach to all farming operations that have the potential to impact on marine fauna. The Marine Fauna Interaction Management Plan will be continuously reviewed and improvements employed to meet this goal.

## 2 Marine Fauna Interaction Committee

The Marine Fauna Interaction Management Plan has been developed in consultation with the Marine Fauna Interaction Committee which consists of the following personnel:

- **CONTACT RELEVANT PEOPLE**
- **E.g. NAME (POSITION), ORGANISATION/DEPARTMENT;**
- **E.g. NAME (Manager Aquaculture), NSW Department of Primary Industries.**

- E.g. NAME (Manager, Jervis Bay Marine Park), NSW Department of Primary Industries;
- E.g. NAME (Senior Wildlife Management Officer), NSW Office of Environment and Heritage,
- E.g. Professor XXXXXX, Department of Biological Sciences, Macquarie University;
- E.g. XXXXX (Manager, Jervis Bay Marine Park), NSW Department of Primary Industries.

See Table 1 for the contact details of the Marine Fauna Interaction Committee and additional entanglement respondent members. Other personnel with relevant expertise may join the committee as required to investigate specific matters.

### 3 Observer Protocol

The Observer Protocol aims to minimise adverse interactions between the INSERT LEASE NAME, marine fauna and other waterway users by early detection of marine fauna and associated issues. The Observer Protocol is a key component of the Marine Fauna Interaction Management Plan.

A nominated observer must be present during all vessel movements and INSERT LEASE NAME activities to minimise the risk of vessel strikes and navigational issues, as well as monitor marine fauna interactions. An observer will be particularly important during the deployment of the longlines/sea pens and construction works. Appropriate distances from marine fauna where practicable will be maintained by service vessels when in transit.

If deployment activities are to be undertaken between the months of September to November the observer must be approved by NSW Office of Environment and Heritage (NSW OEH). Where safe to do so and following discussion with the vessel master, the directions of the NSW OEH approved observer must be complied with to mitigate any potential impacts on cetacean species particularly female whales with calves.

Observations of marine fauna interactions with the INSERT LEASE NAME and the service vessels or in close proximity to the INSERT LEASE NAME will be recorded on a separate Marine Fauna Interaction/Cetacean Report Form (See Attachment 1).

Particular attention will be given to dolphins and the movements of threatened and protected species, migratory species (e.g. Humpback and Southern Right whales) and light sensitive species (when conducting night work), as well as any vessel strike events, behavioural changes, entanglements and predatory interactions.

All observations will be summarised on the Marine Fauna Interaction/Observation Register (See Attachment 2) and these entries and any incident reports will be periodically reviewed to identify any issues of concern and areas that need further management attention.

All records of marine fauna that are observed during the construction and operation stages will be provided to the (i) 'NPWS Wildlife Atlas' database, (ii) local NPWS office at Jervis Bay, and (iii) to the Jervis Bay Marine Park office, for their records.

## 4 Marine Fauna Interaction Protocol

The Marine Fauna Interaction Protocol was developed in consultation with XXXXXXXX (E.g. NSW OEH) and has been successfully used on other marine based aquaculture farms in NSW. This protocol aims to minimise the potential for entanglement of marine fauna in longline/sea pen infrastructure, as well as implement prompt and appropriate management responses if an event occurs in order to maximise successful releases, as well as minimise injuries and stress to marine fauna.

If marine fauna become entangled the main priority is to assess their condition and determine the most appropriate and safe release method. It is also important to discern whether the animal needs to recuperate and be provided with further treatment under veterinary supervision. In the event of deceased animals, the carcasses of dead marine fauna will where possible be necropsied and then be disposed of appropriately following consultation with the Marine Fauna Interaction Committee. The method of disposal will be determined largely by the size of the carcass. Some carcasses may be kept for scientific purposes (e.g. Australian Museum or other authorised research institutions). National Parks and Wildlife Service (NPWS) – Wildlife Management Officers, will be consulted to ensure all relevant procedures have been carried out e.g. the incident has been recorded in Marine Fauna “Elements” Database.

All marine fauna interaction events will be recorded in the Marine Fauna Interaction/Observation Register (See Attachment 2). In the event of an entanglement, an incident report detailing the time, location, species and the entanglement circumstances, will be prepared and provided to members of the Marine Fauna Interaction Committee and any other relevant authorities. For further details refer to Attachment 3 – Marine Fauna Entanglement Report Form and Attachment 4 – Entanglement Assessment Process.

A risk assessment will be completed for all incidents which will form part of the post action report. The protocol and any incident reports will be reviewed annually to assess the effectiveness of this protocol and identify any issues of concern. The review will also enable modifications to be made based on recommendations from post action reports, field experience and professional advice.

In the event of a marine fauna entanglement, dependant on the species of marine fauna, the respective personnel listed in Table 1 should be contacted to ensure the appropriate fauna rescue/response team can be activated, e.g. cetacean – NPWS; sharks – NSW DPI.

**Table 1:** Listing of entanglement respondent members for the INSERT LEASE NAME.

Representative	Position	Name	Contact details
E.g. NSW DPI	E.g. Aquaculture Research Leader	XXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
E.g. University	E.g. Professor	XXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
			T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
			T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
E.g. NSW DPI – Fisheries	E.g. Senior Research Scientist	XXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
NSW DPI – Jervis Bay Marine Park	Manager	XXXXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
NSW DPI – Jervis Bay Marine Park	Ranger	XXXXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
NSW DPI - Fisheries	Fisheries Officers	XXXXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
NSW Roads & Maritime	Boating Safety Officer Jervis Bay	XXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
NPWS	NPWS State Ops Duty Officer	XXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX
NPWS	Coastal Duty Officer	XXXXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX

E.g. NSW OEH	Senior Wildlife Management Officer	XXXXXX	T: 02 XXXXXXXXXX M: 04XXXXXXXX E: XXXXXXXX 131555
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There are a series of requirements that the **INSERT PROPONENT** must adhere to in order to comply with the Marine Fauna Interaction Protocol including:

- Consultation with the Marine Fauna Interaction Committee prior to the construction and deployment of the longline infrastructure to ensure it incorporates the latest best practice for mitigating marine fauna interactions. For example, current research **indicates that orange coloured multistrand rope with a large diameter** should be used for mooring/anchor lines where practical to assist in making the infrastructure more visible to marine fauna;
- Ensure all reasonable action to remedy, alleviate and reduce the incidence of adverse marine fauna interactions are undertaken;
- Conduct regular inspections of anchors, chains, ropes and buoys to ensure compliance with the ‘taut rope policy’ to minimise the chance of entanglement. These inspections should be conducted daily where practicable. Regular inspections also promote early detection of entanglements which increases the chance of successful release of marine fauna and minimises the chance of infrastructure damage;
- Ensure that there are no loose ropes or other aquaculture gear on any component of the longline infrastructure;
- Notify immediately relevant government agencies, including the NPWS and JBMP, if an entanglement incident occurs, including events where the entangled animal may have been released (assisted or self-released);
- Develop a response plan to deal with entanglement incidents in consultation with NSW OEH and other relevant departments and organisations;
- Ensure that a number of staff members receive regular training on wildlife rescue and rehabilitation techniques, as well as conduct response plan drills, to ensure appropriate responses to potential entanglement incidents. Drills should be conducted with the members of the rescue team;
- Maintain a copy of the protocol and the contact details of members of the Marine Fauna Interaction Committee on all service vessels. In the event of an entanglement, the aquaculture permit holder must provide assistance to the committee if required, including the rescue team;

- Document any incidence of death or injury to marine fauna associated with the infrastructure and activities of the **INSERT LEASE NAME**, including a statement of how the incident occurred and any action taken; and
- Implement the control measures listed in Attachment 5 and 6 for potential marine fauna interactions.

#### **4.1 Cetacean Monitoring**

It is considered unlikely that dolphins or other cetaceans will represent a significant predatory concern to the **INSERT LEASE NAME**.

A Cetacean Interaction Register has been developed (See Attachment 1) which will record the following details:

- Time and date of any cetacean interactions;
- Observer duration on the lease and purpose of observer visit (e.g. maintenance);
- Sea conditions (e.g. sea state, wind, cloud cover) and boat traffic (on and adjacent to the lease);
- Number of individuals present including the number of calves;
- The nature of the interaction (i.e. duration of the cetacean visit, proximity to the longlines, direction of travel);
- Description of cetacean behaviour (i.e. resting, milling, feeding, socialising, travelling);
- Degree of development of the lease site (i.e. number of longlines, stocking density); and
- A photo record of the visit if possible.

**INSERT PROPONENT** will record all observations of dolphin interactions with the lease area, including longlines and vessels. These records will be included in the Annual Report and distributed to the NPWS, the MPA and the NSW OEH offices in **Jervis Bay**.

#### **4.2 Training and Response**

In accordance with consent condition **INSERT DETAILS (E.g. D15 of the State Significant Infrastructure Approval SS1-5118)**, **INSERT PROPONENT** in consultation with **NSW OEH**, will develop a training package for the staff working on the **INSERT LEASE NAME** during the operation stage. The training package will be regularly reviewed by the Marine Fauna Interaction Committee.

In addition, the **INSERT PROPONENT** in consultation with NSW OEH, will develop a program to assist NSW OEH in responding to local marine fauna entanglements and/or in undertaking NSW OEH simulation training events.

All entanglement respondent members will undergo training with the Organisation for the Rescue and Research of Cetaceans in Australia (ORRCA) by completing the Marine Mammal Rescue Training Workshop.

## 5 Consultation

In the preparation of the Marine Fauna Interaction Management Plan the following personnel were consulted.

- E.g. XXXXXXXX NSW Office of Environment and Heritage;
- E.g. Professor XXXXXXXX, E.g. Department of Biological Sciences, Macquarie University;
- E.g. Professor XXXXXXXX E.g. NSW Department of Primary Industries;
- E.g. Professor XXXXXXXX E.g. (NSW Department of Primary Industries & Conjoint Professor, School of Environmental and Life Sciences, University of Newcastle);
- E.g. XXXXXXXXXX NSW Department of Primary Industries.

## **6 References**

## **7 Attachments**

**Attachment 1** – Marine Fauna Interaction / Cetacean Report Form

**Attachment 2** – Marine Fauna Interaction / Observer Register

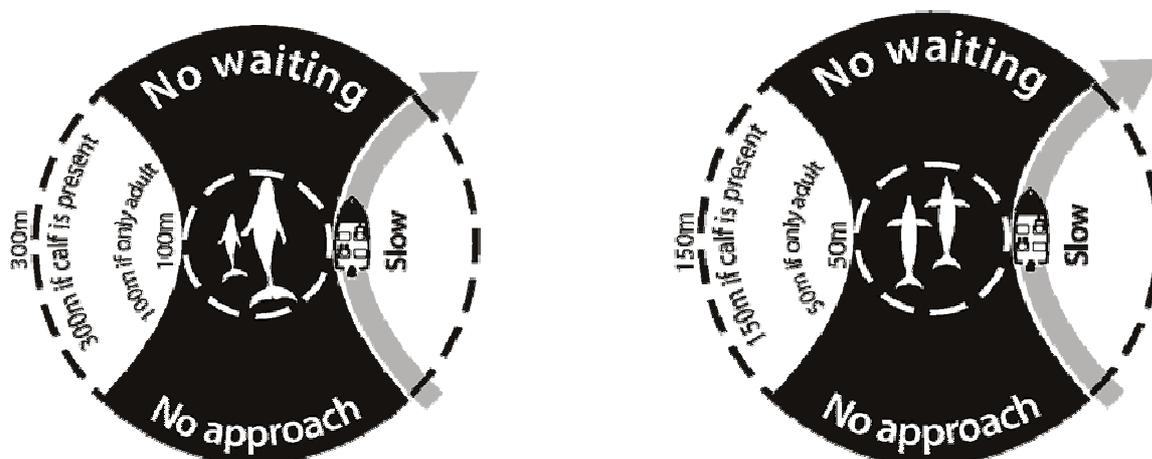
**Attachment 3** – Marine Fauna Report Form

**Attachment 4** – Entanglement Assessment Process

## Attachment 1

### Marine Fauna Interaction / Cetacean Report Form

	Date:	Time:
<b>Name of observer/s</b>	Location: _____ Latitude: _____ Longitude: _____ GPS ref: _____	Description of location:
<b>Type of species (e.g. whale/dolphin/turtle/fish/bird/seal)</b>	Description of all animals present and numbers (including whether adults or calves)	Photo or video taken (attach if taken)  Yes No
<b>Behaviour of animals</b>	Description of behaviour (e.g. resting, milling, feeding, socialising, travelling). Any signs of distress e.g. sudden or erratic changes in behaviour (e.g. quick dives, aggressive, irregular changes in swimming speed and/or direction)?	Animal alive?  Yes No
<b>Duration of observation</b>	Time on lease _____ Time adjacent to lease _____ Proximity to longlines _____ Direction of travel _____	Observer activity (e.g. maintenance)
<b>Weather and sea conditions</b>	Weather (e.g. wind, direction, rainy, cloud cover)	Sea state (e.g. swell/wave height, currents)
<b>Boat traffic and lease operation stage</b>	Is boat traffic present on or adjacent to the lease?	What is the stage of operation? How many longlines? What is stocking density?



**Figure 1:** If approached by a marine mammal, reduce speed and maintain the recommended approach distance (Source: NSW OEH, 2014).



**Marine Fauna Entanglement Report Form**

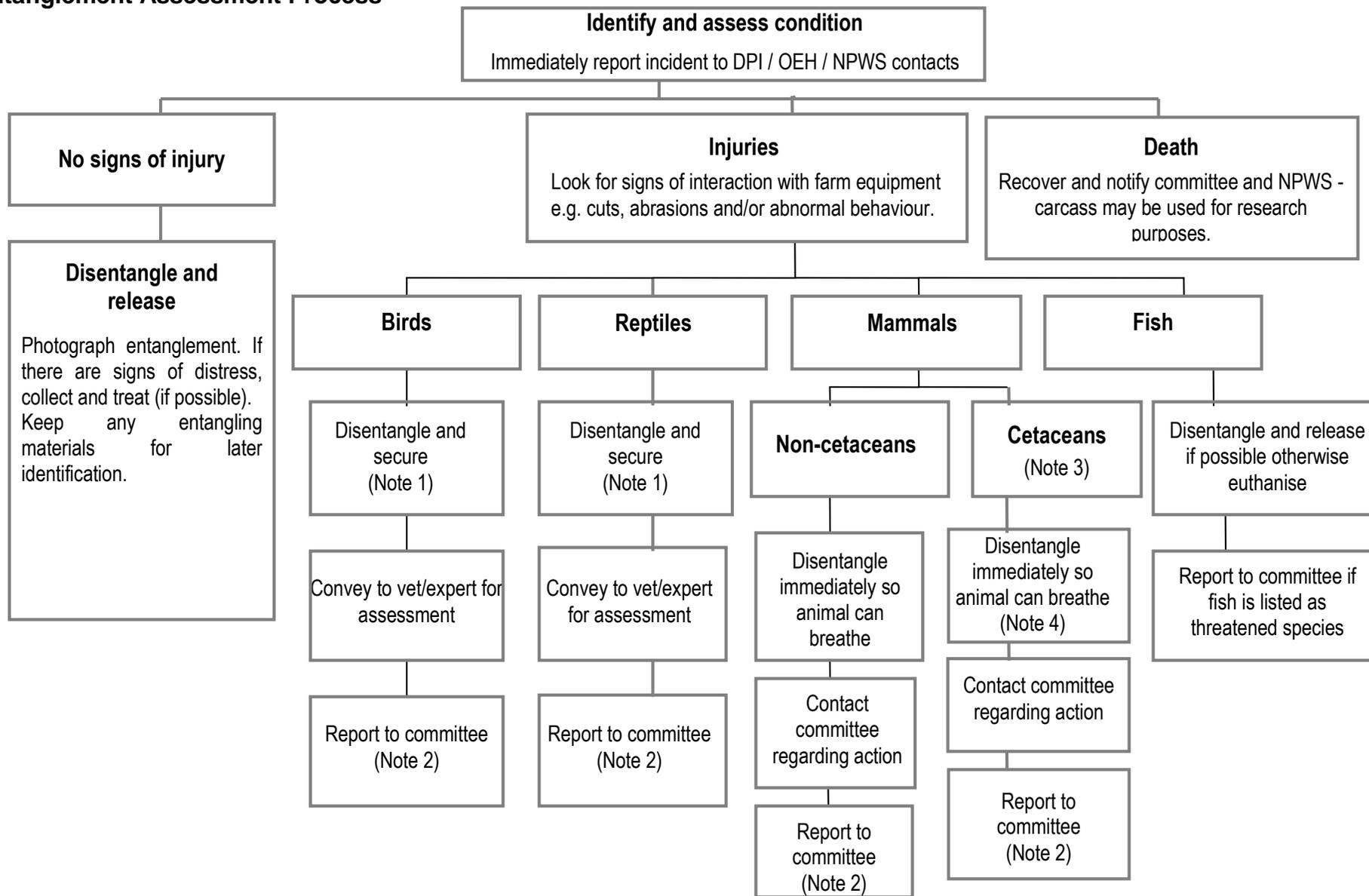
	<b>Date:</b>	<b>Time:</b>
<b>Name of observer/s</b>	<i>Location:</i> <i>Latitude:</i> <i>Longitude:</i> <i>GPS ref:</i>	<i>Description of location:</i>
<b>Type of species (e.g. whale/dolphin/turtle /fish/bird/seal)</b>	<i>Description of all animals and numbers</i>	<i>Photo or video taken (attach if taken)</i>  Yes    No
<b>Behaviour of animals</b>	<i>Description of behaviour and any signs of distress e.g. sudden or erratic changes in behaviour - quick dives, aggressive and irregular changes in swimming speed and/or direction.</i>	<i>Animal alive?</i>  Yes    No
<b>Duration of observation</b>	<i>Time on lease</i> _____ <i>Time adjacent to lease</i> _____	<i>Observer activity (e.g. maintenance)</i>
Drawing showing distinct characteristics, injuries and entangling gear.		Describe the animal as you have seen it: colour, shape, size, marks, scars etc.  Overall size: _____  Head: _____  Back (fin?): _____  Tail: _____  Flippers/fins: _____  Other: _____

Marine Fauna Interaction Management Plan – EMP.

<p><b>If animal left site, when was it last seen?</b></p>	<p><i>Describe the entangling gear: (e.g. ope, buoy, colour and trailing line).</i></p>	<p><i>Visible injuries?</i>                  Yes    No    <i>Scars?</i>                  Yes    No</p>
<p><b>If the animal dives, how long? How often?</b></p>		<p><i>Fresh blood?</i>                  Yes    No    <i>Where?</i></p>
<p><b>If moving, what speed and direction?</b></p>	<p><i>Where/how on the body? (head, tail, flippers, mouth)</i></p>	<p><i>Is the animal thin or emaciated?</i></p>
<p><b>Name of officer contacted (NSW OEH or NSW DPI):</b>   <b>Location:</b></p>	<p><i>Date:</i></p>	<p><i>Time:</i></p>
<p><b>NOTE:</b> Please attach photos with all reports that show entanglement as clearly as possible.</p>		

### Attachment 4

### Entanglement Assessment Process



Marine Fauna Interaction Management Plan – EMP.

- Note 1:** Secure means hold animal in a dark warm container such as a pet pack. For reptiles, a large plastic tub with additional padding on the inside is required.
- Note 2:** Report means prepare an incident report as detailed as possible stating all circumstances relating to the entanglement event including (if available) a veterinary report. The report will be submitted to the committee and relevant authorities.
- Note 3:** Cetaceans that are injured will have lacerations, irregular buoyancy and irregular swimming behaviour.
- Note 4:** When disentangling cetaceans personnel need to be as gentle as possible, suspend in the water and do not handle if possible.