

**GUIDELINES FOR THE STRATEGY AND DEPLOYMENT OF  
LARGE WHALE ENTANGLEMENT RESPONSE EQUIPMENT**

**for**

**DEPARTMENT of ENVIRONMENT**

**and**

**CONSERVATION**

**LARGE WHALE DISENTANGLEMENT STANDARD OPERATING  
PROCEDURE**

**(IMPLEMENTATION OF THIS DOCUMENT REQUIRES A TRAINING PRE-REQUISITE)**

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## Purpose of Procedure

Provide skills and knowledge required to disentangle large whales in a safe, disciplined and structured manner.

Personnel will operate in accordance with occupational safety and health guidelines and organizational procedures.

## Incident Control System (ICS)

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The Department of Environment and Conservation (DEC) manages responses to entanglements using the Incident Control System (ICS) of the Australian Intra Service Incident Management System (AIMS). The ICS is a structure that ensures all vital management (actions) and information (procedures) are undertaken properly.

ICS is the combination of personnel, procedures, facilities, equipment and communications operating within an organisational structure with responsibility for managing resources to effectively accomplish incident objectives. It is a modular structure that can be expanded or contracted depending on the size or stage of the incident. When ICS is expanded is divided into four functions:

**Incident Control (IC):** An IC will be designated by the responsible agency to have overall management of the incident. The IC prepares objectives upon which subsequent planning will be based. It is the IC responsibility to approve an *Incident Action Plan* and approve all requests for personnel or resources.

**Operations:** Established to deploy resources at the incident and is responsible for the control of operations in accordance with the *Incident Action Plan*. Managed by the Operations Officer.

**Planning :** Supports the incident by collection and analysis of incident information, outcome prediction, location of personnel & resources, strategies to manage the incident and preparation of the *Incident Action Plan*.

**Logistics:** Support the incident, with the responsibility for services (first aid, food, fuel), materials, equipment and communications. Managed by the Logistics Officer.

## Key Principles of ICS

### Management by Objectives

A process of consultative management where the management team determines the outcomes of the incident. These outcomes are communicated to those involved so that they know and understand the direction to be taken.

### **Span of Control**

Relates to the number of groups or individuals which one person can successfully supervise / manage at an incident. The maximum is 5. Direct responsibility for more than 5 impacts on the ability to ensure safety and effective operation delivery.

### **Equipment**

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Experience and training with entanglements, including interstate has resulted in the identification of the following equipment. The list is a basic set of equipment; the minimum required to perform the task. Techniques, strategies and types of entanglements do vary, resulting in the need for additional equipment and resources. Incidents may require a revision, addition and ongoing development of equipment and modified techniques.

Basic Kit;-

- 3 x grapple with trace
- 1 x 10 metre grapple throwing line
- 1 x 10 metre main line
- 2 x 30 metre main line
- 2 x 30 metre silver rope
- 2 x 50 metre silver rope
- 8 x personal safety knives
- 8 x end of line floats
- 5 x large buoys (A4/A5/A6 type floats)
- 2 x extendable pole sections with Hoffman 911 blade attachment
- 4 x additional cutting tools, with extendable pole attachment
- Cutting heads with pole attachment capability of cutting light/medium and heavy line
- 6 x Carabiner clips (none-locking) and pole adaptors.
- 1 x 20 cu/ft pony bottle with regulator (optional)
- 1 x Mask/snorkel for over bow assessment.
- 1 x sub-surface viewer
- 1 x Dive slate and pencils
- 1 x buoy (float) inflation device
- 1 x Satellite/VHF harness and buoy
- 1 x Helmet Camera and 1 Pole Camera
- Radio communications

Staff operating in the point boat will require;

Full wetsuit

Buoyancy vest

Gloves, diving boots and helmet

**Personal Safety knife located in a universal location, in easy access**



## **Vessels**

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A minimum of 2 vessels are required to facilitate a safe rescue operation.

Consideration should be given to the combination of 2 inflatable vessels in addition to the main large support vessel.

### **Inflatable (approximately 12-14ft)**

This vessel is the main operational platform to assess, perform the entanglement removal and monitoring. It is essential that only disentanglement staff essential equipment be carried.

This vessel is maintained by a helmsman, a specialist crew member at the bow and a third specialist crew person to ensure trailing lines are clear of the engine leg and to assist the crew at the bow. A second inflatable with a minimum of two crew perform support duties and assist with a safety line or apply tension to the main working line when the main operational inflatable is on the main working line with motor up. It is essential to maintain tension on either a safety line or the main work line when the main operational inflatable is working in close proximity to the entangled whale.

It is essential that the deck of the inflatable be kept clear and free of loose objects and any other materials or equipment which may potentially interfere with the safe deployment of running lines during the operation. Additional key equipment can be carried in the support inflatable and the main support vessel along with additional personnel.

Fatigue and exposure to the cold is a potential safety issue, team members working in the inflatable are to monitor each other team member to ensure their health and well-being is not compromised. This may vary due to weather conditions and temperature.

### **Support Vessel (20-30 ft)**

A large support vessel will be needed to carry necessary personnel, equipment and maintain a multiple communications support system. It must comply with Navigable Waters Survey Regulations. A support vessel is mandatory when dealing with large whales. This vessel should also carry human first aid and resuscitation equipment including qualified staff to deal with possible eventualities.



## Safety of Team Members

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It should be stressed that it is critical to recognise that removal of entanglements from whales is a very dangerous task that should not be undertaken without appropriate training, equipment, Incident Management structure and resources. The variables of the nature of the animals, lack of predictability, complexity of entanglement, equipment, working environment, sea, tides & weather make for a difficult combination.

Whales are large and are capable of inflicting injury or death, particularly if harassed or distressed. All precautions must be taken to protect the public and staff when responding to large whale entanglement incidents. **At no time should anybody enter the water.** Marine animals entangled in monofilament net pose an extremely dangerous high probability of entangling an in water person assessing or attempting to assist the animal. **The first priority is people safety followed by animal welfare.** Large predators often frequent the location of a distressed whale.

### GENERAL SAFETY

- Do not put the whales rescue above human safety at any time
- Only trained operators to participate in disentanglement activities.
- Any action needs to be thoroughly planned, with full briefing to all participants. All participants need to be clear on aims, objectives, operational procedure and roles.
- Focus on the job, but pay attention to the overall environment.
- Actions need not be pressured by weather, onlookers, or the perceived need to act.

### PERSONNEL EQUIPMENT

- Personal safety knives on each individual at all times
- Complete wetsuit, gloves, boots and PFD required at all times.
- Helmets are to be worn, particularly if working close to the whale or with poles.

### POINT BOAT & SUPPORT VESSEL

- Never approach the whale directly from behind.
- Avoid the 'danger zone' – the range of movement of the tail flukes
- Easy – quick lift mechanism on the outboard is a pre-requisite for the point boat.
- Ensure effective communication between vessels, the Incident Controller and land based support vessels.
- Minimise the equipment (and personnel) in the point boat – use the support vessel to carry additional equipment and personnel.
- Ensure each inflatable has a spare knife at the transom.

### DURING DEPLOYMENT OF KEGGING PROCESS

- Be aware of location of your equipment and tools at all times.
- Be aware of the location of the whale, and that of other team members.
- Keep all gear attached to whale out of the inflatable & free from the engine.
- Never attach the inflatable to the whale.
- Stay clear of any load bearing line; *Do not loop any rope around hand, foot or body.*

## **Operational Strategy**

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'Kegging' is term to describe the process of attaching a series of trail lines to the entanglement. These lines, along with a series of large floating buoys aim is to slow the progress of the whale and accelerate fatigue and keep the whale at the surface sufficiently to enable the disentanglement team to safely and effectively remove the entanglement.

The strategy varies according to a number of variables, some of which are listed below;

### **The animal**

Size, species, temperament, behaviour, condition, company of other cohorts and the presence of sharks are all factors requiring consideration by experienced and qualified personnel in determining the strategy to be employed.

### **Nature of the Entanglement**

Entanglement can occur by way of nets, ropes, fishing line, floating debris. The amount of entangled debris trailing the animal and whether the animal is tethered, stationery or free swimming will impact on the strategy to be utilized.

These include;

- Entangled in rope and mobile
- Entangled in rope and anchored to the seabed, only capable of swimming in a circle.
- Entangled in net and mobile.
- Entangled in net and anchored to the seabed, only capable of swimming in a circle.
- Entangled in net and rope, mobile.
- Entangled in net and rope, anchored to the seabed and only capable of swimming in a circle.
- Entangled in net and/or rope and immobile.

Weather conditions, water depth, location and availability of resources are factors.

The strategy to be employed will require the attachment of the rescue equipment by the most appropriate means (as determined by the initial assessment). This equipment is used to impose a condition of exhaustion to the point where the animal can be safely approached by a disentanglement team to achieve the release of the entangled gear.

### **Assessment**

The assessment establishes the species, size and condition in addition to the type of entanglement and any potential obstacles to the rescue operation.

The initial approach is often from behind, off centre and parallel to the animal (to minimize disturbance and avoid startling the animal). A safe distance must be

maintained. The approach must be as slow and as quiet as possible so as not to add to the confusion and anxiety of the animal.

## **Rescue**

(Scenario for a Net and/or Rope Entanglement and mobile).

### *Equipment Preparation*

*Kegging* (a process of attaching a working line with large floats to the entanglement) remains the primary method to reduce the movement of an entangled free-swimming whale. This strategy aims to slow (through fatigue) the movement of the whale and keep it at the surface to a stage where removal of the entanglement can be safely attempted.

The process involves deployment of pre-prepared equipment by trained operators in a small inflatable, supported by participants in an additional vessel(s).

## **Phase 1**

### Technique for very active fast moving whaler

A grapple hook or carabiner is connected to a 10 metre throwing line. This is then connected to the snap hook on a small float. If a grapple is used, the line is thrown to achieve attachment to the entanglement. If it is possible to make a more controlled approach and attachment to the entanglement, then a carabiner is deployed via a self-release pole and adaptor. All lines are spooled such that they feed out of a round tub. An initial 30 metre main line with a small float is attached to the end of the 10 metre throw line, once it has been deployed, followed by a second 30 metre section of mainline with a small float attached at the trailing end. If required, all lines have a snap shackle at one end and an attachment ring at the other and are identifiable by pink flagging tape. This technique has been developed as a most effective way of attaching a work line when a whale is very active and travelling and diving at speed. It makes working the main line possible under strain and the attachment of floats achievable at pre-set locations along the main line.

The end of line float must be within ready access for attachment to the end of the main line as it is deployed. The float clearly identifies the lines end.

The large buoys (floats) are inflated on the support vessel with the use of the dedicated inflation device (this can be a standard SCUBA tank or compressor/pump), ready for deployment.

A slow and quiet left or right of rear approach is made by the inflatable to attach a mainline by using the grapple hook/carabiner by picking up a trailing rope.

Once the mainline has been attached, a slow and controlled deployment (feed out) of the line is executed to avoid fouling.

***In the event of an uncontrolled situation developing or snagging, fouling or similar, the mainline is to be cut immediately.***



***In the event of a person overboard, all operations are to be suspended and attention diverted immediately to retrieve the person overboard.***

***In the event of an accident involving personal injury to any of the crew, all operations are to be suspended and immediate management of the incident will take priority. The Skipper of the support vessel will manage the incident.***

As the mainline is deployed it may be possible to break the length of the line at any of the connecting points if required. In the case of a highly mobile animal, the full 70 metres of line should be deployed, however in the case of an exhausted or placid animal, 40 metres of line may be sufficient.

## **Phase 2**

Load is applied to the line by deploying the large buoys (floats), starting at the furthestmost pre-set attachment ring from the animal on the mainline. Working forward towards the animal the remaining large buoys (floats) are attached at 5 metre pre-set attachment points.

## **Phase 3**

As the animal tires, the large buoys (floats) are progressively leap frogged forward along the mainline. The buoys help keep the animal at the surface so the team can work on the entanglement. This load has the potential to free the whale of the entanglement under some circumstances, maximising the safe distance between the whale and team members.

### Technique for less active slow moving or stationary whale

If a whale is already fatigued, slow moving or stationary (whether anchored or not) the second option and most often used technique is to use a 30 or 50 metres coil of "silver rope" with a grapple or carabiner attachment at one end and an end of line float at the other. This is one continuous main working line that achieves two main functions. The first is a work line for the disentanglement crew to work along the line to attach floats by way of figure eight knots and work along the line to carryout assessments with the motor up most achievable if there is forward motion. Secondly, it doubles up as a safety line the second inflatable sits at the end of and maintains tension on the line, especially if the whale stops moving. This allows the disentanglement crew to work with total control whilst their motor is lifted out of the water, allowing them to work quietly and with less chance of engine snagging at close proximity. This technique allows greater control at close proximity when using pole cameras, assessment and cutting tools. The buoyancy of "silver rope" gives the advantage of being able to see were the surplus and slack rope is all of the time. Some grades of rope are negative buoyant and therefore difficult to see most of the time.

### **Safety Line**

A safety line may be required managed by the point boat helm, run back to the support vessel or a third support boat as a means of maintaining control of the point boat to ensure a safe zone from the whale's tail, especially if the whale has stopped swimming. It is also possible to manoeuvre the vessels and change the angles to the whale by the second inflatable standing off at distance, thus

maintaining control of the placement of the disentanglement team and eliminating the need to engage the motor on the point boat.

### **Release – entanglement removal**

Once the animal is sufficiently worn down through exhaustion the inflatable moves up to the animal to cut free the entanglement. The technique of walking up the line (motor tilted out of the water) allows a quiet and controlled approach supported by a safety line to a support vessel. This phase of the operation may involve a prolonged effort of cutting but must not be rushed. All phases of the operation must remain slow and steady.

***Divers will not be permitted to enter the water.***

### **Monitoring.**

Upon the successful completion of the rescue the condition of the animal should be suitably monitored for as long as is necessary.

### **Debrief**

All operations are followed by a wind down and debriefing to improve on future operations.

It is an opportunity to discuss the level of preparedness, the equipment, the process and identify any changes to procedure or equipment that could be made to improve.