

Summary of capacity building activities provided by the IWC to:

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INTRODUCTION

At the 62nd annual meeting in Agadir, the International Whaling Commission endorsed the report of the first “Workshop on Welfare Issues Associated with the Entanglement of Large Whales” (2010, IWC/62/15) which made several recommendations, including one for capacity building on the issue of large whale entanglement in manmade materials (e.g. ropes and net). Also at that meeting the Commissioners from Brazil and Argentina requested capacity building from the workshop conveners. Given this request and other related IWC initiatives the USA contributed funds and a Technical Adviser (TA) to the IWC Secretariat, in part to carry out this capacity building.

In order to gain the widest acceptance for IWC sponsored capacity building, an overall strategy and curricula were developed and agreed to by the directors of all current large whale entanglement response networks, at a second workshop, held in Provincetown (USA), 2011 (IWC/64/WKM&AWIRep1). This strategy and curricula (Annex F) were used by the TA supplied to the Secretariat, while conducting capacity building on this issue in both Argentina and Brazil.

The IWC TA, working in close consultation with the Commissioners from Brazil and Argentina, as well as designated regional authorities and stranding coordinators, arranged for a series of meeting, seminars and training sessions in both countries, March 14 – 31, 2012. The following is a summary of the work conducted.

RESULTS: BRAZIL

All seminars and training in Brazil were conducted in cooperation with the Centro Nacional de Pesquisa e Conservação de Mamíferos Aquáticos (National Center for research and conservation of Aquatic Mammals, CMA), and the Chico Mendes Institute for Biodiversity Conservation (ICMBio), at their facilities in Itamaraca, Brazil. On March 17 the IWC TA provided a full day of classroom and land training for 43 trainees, who represented the stranding network for the entire 8,000 km coast of Brazil. Most of the participants were large whale researchers and veterinarians.

Forty of these trainees participated, in three groups over the next three days (March 18-20), in the practical training at sea. This was conducted in the surrounding coastal waters using two small vessels provided by CMA/ICMBio.

Practical simulations included:

- Grapple throw and securing of control line.
- Advancing along control line for the placement of drag buoys, while being towed.
- Safe use of line under load and knot tying.
- Mobile approach and use of breakaway “flying” knife with simulated entanglement.

During all classroom and simulated practical training, the principles and guidelines for safe disentanglement of large whales, developed by the second IWC workshop on this topic (IWC/64/WKM&AWIRep1, Annex E) , were stressed.

Upon completion of the classroom and practical training, the IWC TA met with the alternate Commissioner in order to discuss strategies for entanglement response in Brazil, and to review the performance of the trainees, including discussions of potential candidates for apprenticeships. In addition the TA provided a list of suggested custom tools to supply to each of the four stranding regions.

RESULTS: ARGENTINA

Activities in Argentina included a formal meeting in Buenos Aires with the two alternate Commissioners from Argentina in order to discuss national approaches and potential initiatives. Additionally, an overview seminar was given to approximately 30 attendees at the Veterinary College in the City.

Actual entanglement response training consisted of a full day in the classroom for approximately 60 attendees in an auditorium provided by the EcoCenter in Puerto Madryn, in the Chubut province of Argentina. This, and the subsequent training at sea, was arranged by the Director of the Dirección de Fauna y Flora Silvestre (Division of wild flora and fauna), for the Ministerio de la Producción (Ministry of agriculture), for the Chubut Province. Additional assistance was provided by the regional stranding network and its coordinator. On the second day, simulated training at sea was conducted for 10 selected individuals at Puerto Piramides. The simulated training included the same activities as conducted in Brazil. Vessels were provided by the local whale watch companies and the local Coast Guard.

Upon completion of the classroom and practical training, the IWC TA met with the appropriate Government representative in order to discuss strategies for entanglement response in the Peninsula Valdes region of the Chubut province, and to review the performance of the trainees, including discussions of potential candidates for apprenticeships. In addition the TA provided a list of suggested custom tools to supply to the region.

FOLLOW UP ACTIONS

In both countries the IWC TA conferred with the appropriate government authorities after the training was completed. In addition to discussing the specifics of the training, the following potential large whale entanglement initiatives were also discussed:

- Research to assess the scope of the issue (e.g. entanglement scar studies, fishermen questionnaires...etc)
- Potential strategies for entanglement response given infrastructure, resources and logistics
- Recommendations for immediate actions (e.g. purchase of custom tools and associated equipment)
- Discussions of attributes of potential apprentices, in order to maximize benefit to the relevant country
- Discussions of any ongoing or potential entanglement mitigation

- TA communicated summary of training and lessons learned to (proposed) IWC expert panel

In Argentina, discussions with the local authorities and stranding network stimulated the production of a report detailing all known entanglements of southern right whales over the past decade. This report has been submitted for consideration at this IWC meeting (SC/64/BC1).

Also in Argentina, the TA had several discussions with experienced local captains (trainees) about the causes of entanglement and potential solutions. TA is canvassed international experts and followed up with advice to potentially reduce entanglement risk of boat moorings.

REFERENCES

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- Bellazzi G.; R. Orri; and S. Montanelli, 2012. *Entanglement of Southern Right Whales (Eubalaena australis) in Gulf Nuevo, Chubut, Argentina* Report submitted to the 64th annual meeting of the Scientific Committee of the International Whaling Commission, Panama City, Panama. SC/64/BC1

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Annex E

Principles and guidelines for large whale entanglement response efforts

DEDICATION

This document is dedicated to the memory of Tom Smith from Kaikoura, New Zealand. A kind and generous man, Tom was a fisherman and conservationist who tragically died during an attempt to disentangle a humpback whale while he was in the water. Particularly as a result of this and other human injuries recorded worldwide, an important motivation for these guidelines and principles is to try to prevent similar tragedies and to honour his family.

DISCLAIMER

While these principles and guidelines have been developed to try to maximise safe and successful operations, disentanglement operations are complex and can be unpredictable; following these guidelines does not necessarily guarantee personal safety, an animal's successful release, or operation in accordance with national rules and regulations (permits and/or letters of authorisation). All responsibility is upon the operator to undertake safe activities under their best judgment. The IWC and the authors of this document are not liable for any actions taken as a result of these guidelines and principles.

This is a living document, intended to be dynamic and evolving as new information and experience is gained. It is **not** an instruction manual.

OBJECTIVE

Based on the most recent information, the objective of this document is to provide principles and guidelines for trained persons to safely and effectively respond to reports of entangled live whales at sea. The objective of an entanglement response is to remove all detrimental entangling gear safely from the whale and learn as much from the entanglement as possible to ultimately prevent entanglements from occurring. Actions by well-meaning untrained persons can worsen an entanglement, through a lack of subject knowledge and experience. For example, removing easily accessible trailing gear from entangled whales may leave the most critical components on a whale, making future, organised disentanglements more difficult or even impossible, potentially resulting in severe harm or death to the animal.

Regional entanglement response scenarios and complexities may require different techniques and strategies (see Annex F on capacity building and training).

GOALS OF ENTANGLEMENT RESPONSE

- (a) Human safety
- (b) Animal welfare
- (c) Contribution to the conservation of large whale populations, recognising that prevention is the ultimate goal
- (d) Data collection to assist with identifying key fisheries and whale populations and thus better specification of actual entanglement problems within a region to assist with mitigation and prevention.
- (e) Awareness of issues at all levels to improve reporting and appropriate measures to address issues (a)-(d)

(1) GENERAL SAFETY

- (a) **At no time should an individual enter the water.** It is not necessary given the proper disentanglement training, tools and techniques. Over a thousand successful disentanglements have occurred with a boat-based technique without significant human injury, whereas human life has been lost during dive-based disentanglement attempts.
- (b) Do not put the whale's rescue above human safety at any time
- (c) Only trained and authorised operators should participate in disentanglement activities.
- (d) Actions must be thoroughly thought through and planned, with full briefing to all **participants** and **team members**. All **participants** need to be clear on aims, objectives, operational procedure and roles.
- (e) Do not secure a line from the whale to the vessel.
- (f) In addition to focussing on the disentanglement itself, pay careful attention to the overall environment.
- (g) Actions must not be pressured by weather, time of day, onlookers, media, or the perceived need to act.
- (h) When in doubt about safety or the success of the operation, stand down, if possible attach a satellite telemetry device for tracking and/or try again on another day with better support, conditions, and/or resources.

2. PERSONNEL

- (a) Human safety is the number one priority.
- (b) Appropriately, trained, experienced and authorised personnel should be used for the roles required and actions/efforts must be based on the qualifications of personnel on hand.
- (c) Roles must be assigned to team members based on their experience, training, and overall qualifications.
- (d) Personnel should be monitored (e.g. for fatigue, dehydration, emotional state) at all times to maintain safety.
- (e) Team members must be encouraged to speak up if they are not comfortable with a particular action or the general situation. Leaders must respect any concerns raised and not instruct personnel to take a role or action that they are not comfortable with.

3. PERSONNEL EQUIPMENT

- (a) Personnel working near or with entangling gear must carry emergency safety knives on their persons at all times.
- (b) Gloves must be used when handling lines or netting under load (i.e. attached to whale).
- (c) Helmets must be worn by personnel operating near the whale and/or using poles.
- (d) Appropriate attire and personal floatation/protection must be worn at all times. Examples include PFDs, wetsuits, drysuits, worksuits that are snag-free (without straps, D-rings, and clips that can act as snag points for lines/ gear).

- (e) Proper communication tools must be available (e.g. waterproof VHF handheld, cellular phones).
- (f) Carry sufficient water and food.

4. PLATFORMS

Response efforts are generally conducted from two vessels, a primary response vessel and a support/safety vessel.

Primary response vessel (PRV)

- (a) This vessel is the main operational platform to assess, perform the entanglement removal and monitor the situation. It is essential that only disentanglement staff and essential equipment be carried.
- (b) It should be 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.
- (c) Its deck must 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.

Support/Safety Vessel:

A support vessel is needed to carry necessary personnel, equipment and to maintain adequate redundancy in communication systems (i.e. 'two is one, and one is none'). This includes human first aid and resuscitation equipment and qualified staff to deal with possible emergencies.

5. ASSESSMENT

The following factors are used to determine whether an animal is a response candidate through methodology outlined in IWC/62/15.

Animal and Entanglement Conditions

- (a) Size
- (b) Species
- (c) Temperament
- (d) Behaviour
- (e) Health condition (Appendix IV, IWC/62/15): body profile, cyamid coverage, general skin condition and colouration.
- (f) Nature of injuries
- (g) Company of other cohorts (pod members, calves) and the presence of sharks or other predators
- (h) Mobility (anchored, small circles, big circles, free-swimming)
- (i) Type and nature of gear (rope, line, pot, netting, chain, etc).
- (j) Body part(s) affected and not affected
- (k) Configuration and condition of gear

Environmental conditions

- (a) Weather conditions and forecast

- (b) Sea state
- (c) Navigational constraints (e.g. rocks, ice, depth)
- (d) Time of day (e.g. remaining daylight)
- (e) Remoteness of location
- (f) Availability of resources

Other conditions

- (a) Visibility of event
- (b) Media or public presence
- (c) Surrounding vessel traffic
- (d) Military operations
- (e) High recreational use areas

6. SAFETY CONCERNS ON APPROACHING AN ENTANGLED WHALE

- (a) Time spent in the danger zone (area immediately in front of and beside animal that is in range of tail flukes and/or flippers) must be avoided or at least minimised.
- (b) A swimming entangled whale must never be approached in its wake, as unseen trailing gear may foul the approaching vessel's engines.
- (c) Only the minimum required equipment and personnel should be present on the PRV (store non-immediate gear on support vessel). The approach boat must be kept 'clean' in order to minimise the risk of lines getting caught on the boat or gear stowed on boat.
- (d) Sudden boat manoeuvres (e.g. gear shifting or sudden velocity changes) must be avoided as these have a higher probability of startling the whale.
- (e) Approaches should be methodical and consistent. Animals may avoid and respond unpredictably to any perceived threat. It should be assumed that an animal does not know the responders are there to help.

7. ENTANGLEMENT RESPONSE PROCEDURES

Disentanglement procedures generally involve some control of the animal, cutting away gear using specialised tools, and documentation and follow-up of the event. The details of disentangling a whale involve a specialised discipline that is dangerous for both the responder and the entangled whale; as noted in the introduction this is **not** an instruction manual; specific disentanglement procedures should be addressed through a thorough and strict training programme (see Annex F).

8. DOCUMENTATION AND DE-BRIEFING

Documentation gathered during disentanglements offers one of the best and only opportunities to understand the scope and extent of regional entanglement issues.

Documentation may include:

- (a) Photographs of operations and of the animal before, during, and after a response
- (b) Video from point-of-view cameras mounted to safety helmets
- (c) Collection and documentation of gear removed
- (d) Biological sampling (biopsy, skin in gear)

(e) Field observations (operational log, behavioural log, etc)

This information should be assembled into a full disentanglement case study and shared with regional and international entanglement response networks.

Every attempt should be made to build documentation/data gathering into operational procedures. Data should identify species, individual, level of injuries, disentanglement activities and state of the animal and its entanglement at the end of an operation.

Effort should be made to monitor post-disentanglement behaviour and survival through the use of telemetry, genetics and or photo identification of individual animals.

Follow-up of an entanglement response 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 future disentanglement attempts.

NB: As discussed under Items 3 and 8 of this report, there is work underway on consideration of standardising to the extent practical data that are collected, methods of storing these and facilitation of sharing data.

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Annex F

Recommended approach to capacity building and training

INTRODUCTION

The details of training will vary from country to country and depend on a number of factors including the level of knowledge of the entanglement issue, whether the government involved has requested assistance, whether there are existing networks to build upon such as stranding networks, the extent of the coastline, the level of resources available etc. It is also important to recognise the primary objective(s) motivating the instigators that may include one or more of public safety, animal welfare, population level conservation, public concern, retrieval of fishing gear, conflict with fisheries, and conformity with national legislation or matters related to international trade (e.g. export of fish). That being said, the fundamentals of the training will remain the same and this document presents an outline of for training programmes, within which the details will need to be tailored to the specific cases.

For countries for which there is no existing entanglement response network, there will need to be three levels of 'training' in the broadest sense. At each stage it is essential that appropriate local stakeholders are involved.

(A) Assembly of the available information on the entanglement issue *inter alia* to provide a rationale for the need for an entanglement response network and to provide a context and idea of the scope of the problem. [This will be considerable easier for those cases where a government or governments have requested assistance].

(B) Development of the structure within which disentanglement activities will occur, including improved documentation to assist with improving *inter alia* future prevention efforts (prevention is the best solution) as well as well as to enhance disentanglement efforts.

(C) Training of a disentanglement team or teams.

(A) RATIONALE FOR NEED FOR ENTANGLEMENT RESPONSE

This primarily involves working with governments and managers. As noted above where this is driven by a request from a government or governments, this may be a relatively straightforward step; if it is driven by a conservation-related need (perhaps suggested by the IWC Scientific Committee) then it is essential that the evidence and potential solutions are provided to the relevant government in a concise and balanced manner; it is essential that governments are part of the process. One approach would be to hold a short seminar with the appropriate government officials. Where IWC member nations are involved, this could be organised in conjunction with the relevant Commissioner.

Information provided should include what is known about the local situation with regard to entanglement and examples of how such issues have been dealt with elsewhere in the world.

(B) DEVELOPMENT OF THE STRUCTURE WITHIN WHICH DISENTANGLEMENT ACTIVITIES OCCUR

Disentanglement activities cannot exist in isolation. Entanglement response requires a structure that covers all aspects from outreach and reporting to responding, verification of reports and decisions on the appropriate response including disentanglement, follow-up and documentation. Developing this requires involvement of managers, biologists (and stranding networks where these exist), fishermen and other marine users, including the coast guard and the navy, with assistance from international experts. It is important to stress the pre-eminence of human safety issues, the need to focus on achievable objectives and the need to work towards prevention. This phase will almost certainly entail at least one meeting.

This stage requires knowledge of the local entanglement situation (including species, likelihood of events, gear that might be involved, potential 'hot spots', resources that may be made available, the existing legal framework) and an overview of how experiences and structures elsewhere (including the Incident Control System approach) can assist in designing a workable and efficient local structure and all aspects of communication including dealing with the media. It is important to recognise that the entanglement issues may involve more than one country given the migratory behaviour of large whales.

(C) TRAINING DISENTANGLEMENT TEAMS

Trainers should be chosen from the accredited global network of entanglement response operations, by its members, using criteria they develop including, but not limited to: thorough knowledge of all aspects of the curricula, experience training in existing networks, experience disentangling the species involved, communication skills, availability.....etc.

Trainees should be identified within the local structures developed under (B) above. There are a number of roles to be fulfilled within a disentanglement team ranging from boat handling in the presence of whales, data recording and direct disentanglement efforts. Criteria to be considered include previous experience with whales, with small boats, with fishing gear, gear under tension, availability and likelihood of remaining with the programme for a number of years, level headedness and communication skills.

There are a number of examples of existing training programmes (e.g. from the USA and Australia) and these were reviewed and the main components are listed below. Details will of course need to be tailored to particular situations, with relevant examples provided from elsewhere and will follow the agreed Principles and Guidelines for Entanglement Response Efforts (Annex E).

Much of the background information (e.g. legal context, what is known about local entanglement issues, basic biology of local populations) is best presented by local experts. Parts 1 and 2 (of the example outline for a training course given below) could usefully be attended by others than the trainees (e.g. managers, fishermen and other stakeholders). In addition to the training itself, the trainer, in collaboration with the trainees and managers, should aim at identifying potential leaders to undertake apprenticeships with established disentangling teams (see below).

Example outline of a training course

Part 1 – Background information with emphasis on local situation and relevant examples from elsewhere

1. International (IWC) perspective
2. Safety issues – stressing that this is the over-riding concern
3. Legal issues
4. Background and biology
 - 4.1. Local knowledge on entanglement events (and trends) in country - occurrence, geographical and temporal distribution, gear type/species
 - 4.2. Brief summary of biology of the large whales of the region that have been or may be involved in entanglements (particularly temporal and geographical distribution, status and behaviour related to entanglement and entanglement response
 - 4.3 Where, when and how do whales become entangled?
 - 4.4 The importance of prevention

Part 2 – Overview of the emergency response (this should be based on agreements and approaches that will already have been developed under component (B) above. i.e. the structure within which disentanglement activities occur

5. Components of response (general overview of what it takes to respond and the components of response). The agreed decision tree (IWC/62/15, Figure one) will be used to go through the next items.

- 5.1. Outreach and reporting
 - 5.2. First response
 - 5.2.1. Verification and assessment
 - 5.2.2. Tracking the animal
 - 5.3. Action
 - 5.3.1. Tag
 - 5.3.2. Disentangle or monitor
 - 5.4. Document and follow up
 - 5.4.1. Fate of the animal
 - 5.4.2. Tracing the gear
 - 5.5. The Incident Control System (ICS) approach
6. The Network [This will be tailored to the agreed local network, thus some items may be redundant]
- 6.1. Hot spots

6.1.1. How far apart?

6.1.2. Resources available (e.g. stranding teams, biologists, fishermen, whalewatching operators, military)

6.2. Rapid response team or local personnel approach

6.3. Training and experience

6.3.1. Criteria for selecting candidates

6.3.2. Simulated training vs. actual experience

6.3.2.1. Apprenticeships

6.4. Communications

6.5. Role of the Navy or Coast Guard

Part 3- The disentanglement training itself

7. Disentanglement Procedures

7.1. Common misconceptions

7.2. Assessing the situation (decision tree, including euthanasia)

7.2.1. Condition of the animal

7.2.2. Assessment of gear and entanglement

7.2.3. What action is warranted given conditions (e.g. weather, time of day, resources at hand)?

7.3. Telemetry buoys (brief informational summary)

7.4. Freeing an anchored whale

7.5. Controlling a free-swimming whale

7.5.1. Attaching to the whale and assessing strength of gear and whale

7.5.2. Attaching buoys and sea anchors

7.6. Cutting the whale free

7.7. Some examples (case histories), examine mistakes made

7.8. Unsuccessful operation (discussion of euthanasia)

7.9. New and experimental techniques (ie. sedation)

8. Documentation and follow-up

8.1 Debrief including mistakes

8.2 Close-up reports (provide examples)

8.3. Status of the whale (health and survival, limpet tags, etc)

8.4. Origin of the gear

9. Safety

9.1. Safety gear (e.g. helmets, life vests, knives....etc.)

9.2. Support vessel and communications

9.3. Safe procedures

10. Dealing with the media

11. Examination and familiarisation with special gear (on land)

Items 1-11 will normally complete one day's training.

The second day (at least one day but ideally more) will comprise on water familiarisation with equipment and techniques training including such activities as one boat acting as whale towing rope and gear while the second boat acts as a rescue boat, identified individuals practice attaching, controlling and cutting using specialised tools.

‘Leader’ apprenticeships, accreditation and levels of competence (including refresher courses and evaluations)

Clearly a 2-3 day course will not be sufficient to allow a new team to begin unsupervised disentanglement work. It is essential that part of the overall process is the identification of one or more individuals who have a medium- long-term expectation to be involved in the local effort as leaders. These should then visit established teams to gain experience of real disentanglement efforts. Both in the US and in Australia there are good examples of ways to evaluate the levels of experience (if appropriate, links to these can be included) and these will need to be developed within the local legal and administrative system and with advice from the global network of entanglement response operations via the IWC. It is important that provision is also made for refresher courses and evaluations.

Use of simulation programmes

The group was enthusiastic about the potential of the use of simulation programmes such as that being developed in Australia for aspects of training, as well as for exchanging information among teams about particular events. Of course, simulation programmes cannot replace at sea training but they can be a valuable supplement. It strongly encourages further development of the Australian programme and is happy to provide input into the types of parameters and scenarios to be incorporated.

Equipment

It is essential that trained teams are provided with the necessary equipment. Some of the equipment is standard and ‘merely’ requires appropriate funding. Other equipment is effectively custom-made and ways to ensure that this is made available or made locally must be developed