**Description of entanglement response training for Norway**

Whales become injured and often die through entanglement in materials such as ropes and nets. All species of great whale are affected and entanglements occur anywhere that whales and fishing gear overlap in the World’s Oceans. Given that whales routinely swim off with the gear, these often-lethal events are greatly under-reported. In some coastal populations of whales over 80% show evidence of entanglement at least once in their lives. The issue is severe, as approximately 308,000 whales, dolphins and porpoises are believed to die from entanglement each year. Entanglement may be the greatest source of human-related mortality for large whales. For some critically endangered populations, such as the North Atlantic right whale off the eastern coast of North America, the number of deaths in fishing gear can be sufficient to prevent recovery from historic whaling.

Aside from conservation concerns, entanglement is a serious animal welfare issue. An entangled North Atlantic right whale takes, on average, 6 months to die from causes including starvation, chronic infection and severed appendages. Entanglement is also a problem for fishermen who not only have no desire to harm whales, but who also suffer from loss of fishing gear and time. Unfortunately the increasing numbers of entangled whales, due in part to an increasing number of whales in many regions, have led to a corresponding increase in the number of untrained rescue attempts. Well-meaning attempts by untrained rescuers can not only make matters worse for the whale, but have also resulted in human injuries and deaths.

For all of these reasons the International Whaling Commission has convened several workshops of invited experts to document the scope and impact of this global problem, review actions currently taken by countries, and make recommendations for future mitigation. One of the strong recommendations of the panel of experts was to build capacity in countries where the problem is either known or likely to exist. The rationales for prioritizing this capacity building have been identified as the following:

1. **Conservation:** How endangered is the whale population and how significant is the entanglement impact?
2. **Human Safety:** Are well-meaning but un-trained people currently responding with dangerous techniques?
3. **Animal Welfare:** How many whales are likely to benefit from the range states developing a response network?
4. **Socioeconomic impact:** Is the impacted fishery artisanal and therefore more seriously impacted?
5. **National support:** Has the country requested or sanctioned the training?
6. **Added impact**: Does the training fit into and/or encourage other productive initiatives?
7. **Funding:** Is there logistical and financial support?

The proposed training Norway meets several of these criteria. The strategy and curriculum for the training was developed by the heads of all currently established National entanglement response networks (e.g. Australia, Canada, New Zealand, S. Africa, USA) during the second IWC workshop on this topic (Provincetown, 2011; <http://iwc.int/index.php?cID=2636&cType=document> ). It follows the consensus **“Principles and Guidelines” (Annex E)**, and the **strategy and components of the curriculum that were developed (Annex F)**. English versions of the agenda for the training are attached (Appendix A).

The two-day training consists of one day on land, largely in a classroom, where all participants are given an overview of the issue globally, with background information on how other countries are approaching this problem. In addition, an expert from the region is asked to provide a brief overview of what is known for the region, including: species and gear involved, examples of local events, and any local regulations. An overview of the science and methodologies used to understand the issue is also presented, and two overarching “principles” are reiterated. Firstly, that human safety must come first, and secondly, that disentanglement is only the first step in helping whales and fishers. On the latter point it is made clear that prevention is the ultimate solution to this problem, and all responses to an entangled whale should include gathering information (safely) that will eventually lead to prevention.

The remaining 2/3 of the first day are spent going over safe disentangling procedures using multiple case histories to illustrate the proper use of tools, techniques and safe decision-making procedures. At the end of the first day participants go outside to familiarize themselves with some of the common tools while still on land (e.g. grapple, long poles, snap hooks….etc.). In addition, the next day’s simulations on the water are discussed. The number of attendees for the first day in the class is only limited by the size of the room. However, not all of the attendees will be candidates for the hands-on training on the water, during the second day.

The second day takes place on the water. Two small boats (per trainer) are used- one acting as the “whale” and the other as the “rescue” boat. The “whale” boat is large enough to carry all but the trainer and 2-3 trainees (at a time), as they are in the “rescue” boat. The “whale” boat tows a long rope with a variety of objects on the end (e.g. buoy, tangle of net….etc.). As the “whale” boat moves at about 2-4 knots, the “rescue” boat makes multiple approaches to the rope and object being towed. Over the course of the day on the water, each trainee gets to use several different tools (e.g. jam grapple, snap hook and breakaway knife on a long pole….etc.). With each simulated exercise, the trainees rotate through the “rescue” boat until all have familiarized themselves with that procedure and those tools, and then the gear is set up for a different simulated procedure. All of this takes time and so one trainer can only train approximately 10-12 trainees in one day on the water. If more than that require this training, then a second trainer, with a second pair of boats, is needed, or the “at sea” training will run over onto a third day.

The organizers of the training will need to pre-select participants for the day on the water. It is strongly recommended that trainees be selected based on the following criteria:

* Experience with whale behavior and driving small boats around whales
* Experience with fishing gear and with handling lines under powerful “load” or strain
* Experience with small boat safety
* Physically fit (does not need to be an athlete though)
* Available (there is no point training someone who won’t be around or available to respond)
* Has insurance (in countries where it applies) and authorization of the relevant authority
* Level-headed (is able to remain calm and think clearly in stressful situations)

Every effort will be made to give all appropriate participants simulated experience on the water; however, if there are any participants who do not meet the criteria above, they can still learn important supporting tasks (e.g. safety protocols, documentation, gear preparation….etc.) by observing from the “whale” boat.

At the end of the day of training on the water, the trainers will meet with the responsible person from the country and evaluate the performance, and potential roles, for each trainee. The trainer(s) will use the attached evaluation form (Appendix B).

**APPENDIX A**

**IWC Large Whale Disentanglement Training for Norway**

**Day One (on land)**

1. **Introductions**

# Safety and Legal issues

# Example from the other countries

# Authorization under national laws

# Conservation, animal welfare, and human safety

# Background and Biology

# Events and trends in Norway

# Large whales of the region, brief summary of biology

# What do we know globally (e.g. from U.S., Canada and Australia)

# What species and gear interact to create entanglements?

# Where, when and how do they become entangled?

# Prevention

# Components of response

# Outreach and reporting

# First response

# Verification and assessment

# Tracking the animal

# Action

# Tag

# Disentangle or monitor

# Document and follow up

* + 1. Fate of the animal
		2. Tracing the gear

# The Incident Control System (ICS) approach

# Designing and building a Network

# Identify Hot spots

* + 1. How far apart?
		2. Resources available (e.g. stranding teams, biologists, fishermen, whale watch operators…etc.)

# “Swat” team or local personnel approach

* 1. **Training and experience**
		1. Criteria for selecting candidates
		2. Simulated training vs. actual experience
			1. Apprenticeships
	2. **Communications**
	3. **Potential role of the Navy or Coast Guard**

# Disentanglement Procedures

# Common misconceptions

# Assessing the situation

* + 1. Condition of the Animal
		2. Assessment of gear and entanglement
		3. What action is warranted given conditions (e.g. weather, time of day, resources at hand)?

# Telemetry buoys (brief informational summary)

# Freeing an anchored whale

# Stopping a free-swimming whale

* + 1. Attaching to the whale and assessing strength of gear and whale
		2. Attaching buoys and sea anchors
		3. Cutting the whale free
		4. Some examples (case histories)

# Documentation and follow-up

* + 1. Status of the whale (health and survival)
		2. Where is the gear from (U.S., S. America….etc.)?

# Safety

* + 1. Safety gear (e.g. helmets, life vests, knives….etc.)
		2. Support vessel and communications
		3. Safe procedures
	1. **Break to examine and familiarize special gear (on land)**
1. **Further discussion of the details of entanglement response for Norway**
	1. **Legal issues and authorization**
	2. **Potential roles for various players (eg. Navy, WW, NGOs, Fisheries….etc.)**

**Day Two**

# On water familiarization with equipment and techniques

* 1. **One boat acts as whale towing rope and gear**
	2. **Second boat acts as rescue boat**
	3. **Identified individuals practice attaching, controlling and cutting using specialized tools**

**APPENDIX B**

LARGE WHALE DISENTANGLEMENT WORKSHOP: EVALUATION FORM

Date Location:

TRAINER(S)

TRAINEE NAME

1. Physical fitness

 Excellent Good Fair Poor

(Comments)

1. Motorboat maneuvering

 Excellent Good Fair Poor

(Comments)

1. Gear handling

 Excellent Good Fair Bad

(Comments)

1. Team work

 Excellent Good Fair Bad

(Comments)

1. Following instructions

 Excellent Good Fair Bad

(Comments)

1. Communication skills

 Excellent Good Regular Bad

(Comments)

1. Level-Headed, calmness

 Excellent Good Regular Bad

(Comments)

RECOMMENDED FOR: OVERALL COMMENTS:

APPROACH TEAM

SUPPORT TEAM

BOTH

NEITHER

**APPENDIX C**

**Brief Biography of the Principal Trainer**

**David Mattila** IWC-CCS, Technical Advisor - Reduction of Human Impacts - Secretariat to the International Whaling Commission

David has studied humpback whales, since 1978, in three Oceans, from Greenland to the Caribbean, and Hawai’i to American Samoa. He has been a coordinator of two large Ocean-wide, international collaborative studies of humpback whales: the SPLASH project in the North Pacific and the YONAH project in the North Atlantic. He has co-authored over 65 scientific publications in scientific Journals, such as: *Nature, Marine Ecology Progress Series, Journal of Zoology, Journal of Mammalogy, Behaviour, Marine Mammal Science, Canadian Journal of Zoology, Endangered Species Research and PlosOne,* as well as reports to the Scientific Committee of the International Whaling Commission. In addition, he has given over 40 invited presentations to scientific and management conferences and symposia, both nationally and internationally (e.g. Canada, Dominican Republic, Mexico, Austalia, New Zealand, Samoa, New Caledonia, China, Korea, Japan). He works extensively with large whale entanglement, helping to develop rescue techniques, set up trained rescue networks and gather information that will hopefully lead to prevention. He is currently the convener of a group of experts comprised of the directors of all existing National and Regional entanglement response networks. Working through the IWC, this group has developed a consensus “principles and guidelines” as well as a strategy and curriculum for building international capacity to respond to entangled whales. He has led the IWC training effort, which has reached approximately 1,000 participants from 40 countries.

**APPENDIX D**

**Logistical needs and other potential local cost breakdown for:**

**Norway large whale entanglement response training**

**Day one (classroom)**

1. Room for up to 30 people:

Trainees lodging USD $ ?

1. Powerpoint projector & Coffee break: USD $ ?
2. Trainer travel and lodging: USD $ ?

**Day two (on water)**

1. Misc equipment (see attached, below) USD $ 800
2. One set of basic custom disentanglement tools USD $ 1,400
3. One “whale” 6 m boats (e.g. Zodiac)\*: In kind USD $ 0
4. One“rescue” 13 m boats (e.g. Tuukaaq)\*: In kind USD $ 0

TOTAL EQUIPMENT USD $ 2,200

\* ***Projector can be provided by IWC if needed.*** ***The boats are provided by host and***

***fuel costs are in kind?***

**Misc. rescue equipment that can be purchased online (e.g. Amazon.com)**

**or at local stores.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| The following are some of the “off the shelf” items that are considered essential for safe large whale entanglement response. For the purposes of training, these can either be purchased or borrowed. Or, in some cases we might not need them, or simpler items can be substituted. However, if it is desired that a full rescue cache remains after training, these would need to be purchased.

|  |
| --- |
| A-4 / A-5 Polyform buoy  |
| ***50001 / 50002*** | *USD $75 / $165* |
| a-4 polyform buoy |
| *Inflatable buoys added gradually to a work line or entangling gear are a key component of slowing a whale and marking its underwater progress. A-4 and A-5 buoys are endurable and highly visible components of this process. Outfitted with short work lines, these can be added directly to an entanglement or an established work line. Can be inflated by foot pump or dive tank.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Height (mm/in) | Diameter (mm/in) | Eye Diameter (mm/in) | Buoyancy (Kg/lb) | Weight (Kg/lb) |
| A-4 | 730/28.7 | 590/23.2 | 27/1.1 | 115/253 | 4.1/9.0 |
| A-5 | 940/37.0 | 750/29.5 | 30/1.2 | 225/495 | 8.5/18.7 |

 |

 |
|  |

\* For the training, we can use boat fenders or other reasonably sized buoys

|  |
| --- |
| **safety gloves** |
| ***80011*** | *USD $30* |
| gloves |
| *Safety gloves are important when working line, especially if you are tending line or having to throw the grapple multiple times. It will give you a better grip and protect hands from rope burn.*  |

\*For the training, we don’t have to use new gloves, but we should have four pairs

|  |
| --- |
| **Personal floatation device***mustang four pocket safety vest* |
| ***80010*** | *USD $65* |
| mustang pfd |
| *This is a general purpose four pocket work vest that allows you maximum movement for grapple throws and working off a rescue vessel. The pockets are convenient for stowing your safety knife or other small tools.* |
| ***safety helmet****A helmet made for Kayaking or other water sports is good* |
|  |  |
| *USD $50* |
|  |

|  |
| --- |
| **personal safety knife***spyderco - atlantic salt* |
| ***60031*** | *USD $60* |
| spyderco personal safety knife |
| *Spyderco's Rescue knives are favored by rescue workers and EMT's during an emergency. The Atlantic Salt is a state of the art non-rusting steel blade with a durable handle.* |

\* These are not absolutely necessary for training, as we don’t push the simulation that far that it could be dangerous. But it is good to start off with people understanding the need to always be thinking of safety.

Floating “poly” tow line, behind “whale boat”

1 – 1.25 cm x 50 m USD $30



Additional equipment not pictured that is not needed during the training, but is important for actual rescue kit.

* Handheld radios
* Documentation equipment (e.g. waterproof digital, GoPro, high resolution Digital SLR with telephoto…..etc.)
* First Aid kit
* Dive mask (to look over the side of the boat)

These last items and others can be discussed at the training, with possible options or alternatives suggested.

And so, the budget for this equipment, assuming one trainer training one team would be:

1. One A-4 and one A-5 buoys: USD $240
2. Two pairs of safety gloves: USD $60
3. Two life vests: USD $130
4. Two safety helmets: USD $100
5. Two safety knives: USD $120
6. One spools of 2 cm line (50m) USD $150

**TOTAL $800**