Entanglement and bycatch around the world: Understanding and reducing the impact

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Secretariat: International Whaling Commission
COMMISSION: EFFORTS TO MANAGE LARGE WHALE ENTANGLEMENT

- Scientific Committee
  ✓ Human-Induced Mortality Working Group (formerly Bycatch)
- Commissioner’s meeting
  ✓ Working Group on Whale Killing Methods & Associated Welfare Issues
  ✓ Conservation Committee

www.IWC.int
Determining the extent of the problem: Observer programs

- Read et al. (2006) estimate mortality at 308,000/yr
- Mostly from observer programs (e.g. small cetaceans)
- Under-reporting widely acknowledged for large whales
- Full extent is still unknown for most whale populations
Entanglement is a Global issue for large whales:
IWC WORKSHOP TO REVIEW THE SCOPE, IMPACT AND POTENTIAL ACTIONS (MAUI, 2010)

Participants from:

Argentina
Australia
Brazil
Canada *(Pacific and Atlantic)*,
Korea
New Zealand
Norway
South Africa
USA *(Pacific and Atlantic)*

http://iwc.int/index.php?cID=2635&cType=document
### Large Whales: All Species

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<th>Humpback</th>
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Shaded squares represent documented entanglements.
Empty squares represent species not reported entangled in 2003-2008

Summary of six years of large whale bycatch data from National Progress Reports submitted to the IWC Scientific Committee annual meetings (56-61), generally covering the years: 2003-2008 (2010, IWC/62/15)
When and where?

- W.N. Atlantic
  - Feeding: PCCS
  - Migrating
  - Breeding: NOAA

- W. Australia
  - Feeding: NOAA
  - Migrating: DEC
  - Breeding

- Hawaii
  - Feeding
  - Migrating
  - Breeding: NOAA

- Alaska
  - Feeding: NOAA
  - Migrating
  - Breeding: SAWDN

- S. Africa
  - Feeding
  - Migrating
  - Breeding: NOAA
When and Where?
Gear type?
All passive (stationary or drifting) gear: (IWC/62/15)
Alaska Pot Gear in Hawaii:

- Maximum known straightline distance carried is ~ 2,450nm (Wrangell, AK)
- Crab, shrimp, and fish pots (traps)
Marine Debris

http://iwc.int/pwoatiomd2013
Debris?: while migrating?

Area 9
Eastern
Garbage Patch?
Gear retrieved from whales in Hawaii

- Unknown: 47.3%
- Pot: 25.5%
- Mooring/Aq: 3.6%
- Longline: 10.9%
- Debris Monofilament: 5.5%
Two recent IWC workshops on scope, impacts and management actions (2013 and 2014)

Report of the 2013 IWC Scientific Committee workshop on Marine Debris

1. Introductory Remarks

1.1 Welcome and Opening Remarks

The workshop was held at the IWC Secretariat on 7 July 2013. The workshop was attended by a number of experts from various disciplines and organizations.

Michelle Ley, the Director of the IWC Secretariat, welcomed the participants and emphasized the importance of addressing marine debris in the context of the IWC's mandate. She highlighted the need for international cooperation and collaboration in this area.

2013
http://events.iwc.int/index.php/scientific/SC65a/paper/view/277/267

2014
http://events.iwc.int/index.php/scientific/SC65a/paper/view/277/267
Sperm whales apparently play with FAD made of debris

Guadeloupe, November, 2013

Caroline Rinaldi and Renato Rinaldi
SC/65b/ HIM02, 2014, Bled, Slovenia
Possible Southern Ocean gear: Spanish (twin) long line?
Long line
Impacts to Fisheries
Newfoundland, Canada 1979 - 2012
How can entanglement kill a whale?

Immediate: Drowning

Long-term: Starvation

Chronic: Infection (sepsis)

Trauma: bleed out...etc
Average time to death = 6 months
Average time to death = 6 months

72 right whale cases:
• average minimum entanglement durations of 262 days,
• average confirmed maximum (not based on when animals were never seen again) of 503 days.
• The max minimum duration was 2947 days
From examining stranded carcasses

- Must float (e.g. not-starved)
- Die close to shore
- Prevailing wind & tide onshore
- Must be found and reported
- Limited time window before decomposition
- Often inconclusive cause of death

Recent studies suggest that only 1 in 10 bycatch mortalities strand
North Pacific:

- 50 Advanced disentanglement trainings/workshops
- ~400 people trained at various roles
- 22 dedicated caches of equipment
Confirmed* entanglements reported, to the USA Atlantic Network

*less than half of “reports” received
Scar analysis: humpbacks

- Lateral photos of tailstock and fluke
- Systematic analysis
- Tested with known entanglements
- Sensitive indicator of gear encounter rates (but only survivors)
Scar studies indicate the scope and impact has been greatly under-estimated

- Studies show 20 – 80% of studied populations are scarred
- 10 – 25% acquire new wounds each year
- Less than 10% are reported to the local Response Network
- 2 – 4% annual mortality in some populations
- Primary human threat to most stocks, especially critically endangered populations
Scarring results from SPLASH study
No population with less than 20% entanglement scarring
(North Pacific humpback whales)

IWC WORKSHOP: MAUI, 2010

- Agreed the issue occurs wherever whales and passive gear overlap
- Agreed that the frequency is widely and often severely under-estimated
- It is both a welfare and conservation issue

**Recommended:**
- Capacity building
- Prevention
- Better data collection

http://iwc.int/index.php?cID=2635&cType=document
Establish Response Networks
Build capacity through training: Classroom, land and sea
IWC entanglement initiative:
Seminars and trainings: 2012 - Present

SEMINARS: Belize, Chile, Colombia, Costa Rica, Korea, Norway, Oman, Peru, A. Samoa, SPREP, St. Lucia, St. Kitts & Nevis, St. Lucia, Trinidad & Tobago, USA, Venezuela

TRAINING: Argentina, Brazil (2), Chile, Dominican Republic, Ecuador, Caribbean: French (3), Dutch and English, Greenland, Japan, Mexico (5), Oman, Panama, Peru, Puerto Rico, Thailand, Tonga, U. K., Vanuatu
ENTANGLEMENT RESPONSE TRAINING IN VAVA’U, TONGA : JULY 2014
Working with Regional IGO Partners

Participants from: Chile, Peru, Ecuador, Colombia, Panama, Costa Rica, Mexico, Dominican Republic, Puerto Rico, St. Lucia, Venezuela, French and Dutch Caribbean, Tonga and Vanuatu
Training and advice: panel of experts

CONVENER
International Whaling Commission (David Mattila)

NATIONAL ENTANGLEMENT RESPONSE NETWORKS
Australian Large Whale Disentanglement Networks (Australia) (Doug Coughran)
Department of Conservation (New Zealand) (Mike Morrissey)
National Marine Mammal Health and Stranding Response Program (NOAA, USA) (Teri Rowles, DVM)
South African Whale Disentanglement Network (South Africa) (Mike Meyer)

REGIONAL NETWORKS (within National Networks)
British Columbia Marine Mammal Response Network (BC, Canada) (Paul Cottrell)
California Large Whale Disentanglement Network (USA) (Sarah Wilkin)
Hawaiian Large Whale Entanglement Response Network (USA) (Ed Lyman)
Atlantic Large Whale Disentanglement Network (USA) (Jamison Smith)

KEY LOCAL RESPONDERS
Marine Animal Entanglement Response (PCCS, New England, USA,): (Scott Landry)
Marine Mammal Center (Northern California, USA) (Frances Gulland, DVM)
Whale Release and Stranding (Newfoundland, Canada): (Wayne Ledwell)
Woods Hole Oceanographic Institute (Michael Moore, DVM)
Prevention is the answer!

- <10% of entangled whales are reported
- Most that are reported have already suffered

CCS