

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

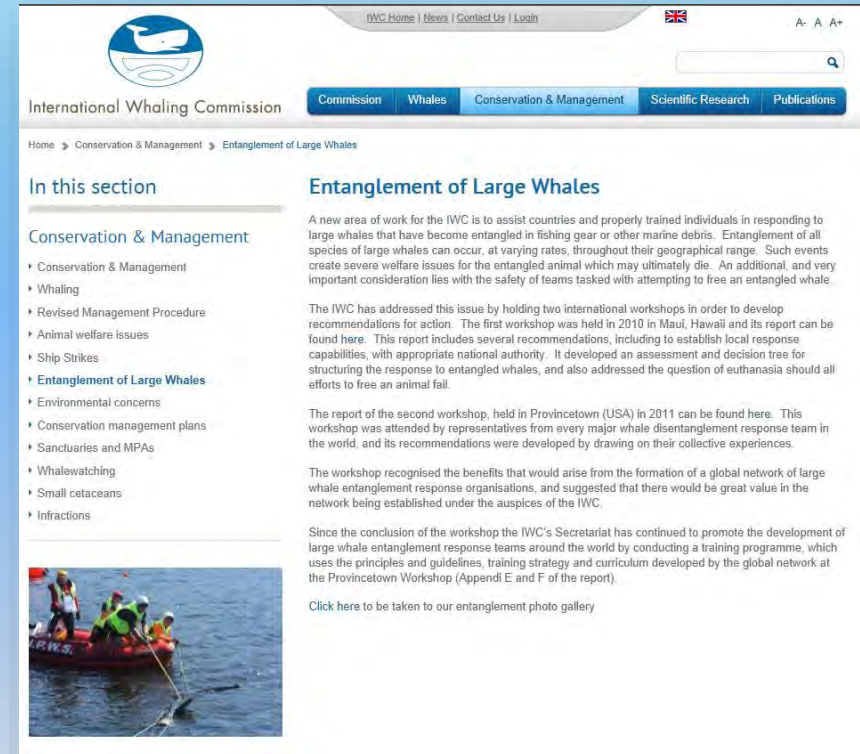


- **Scientific Committee**

- ✓ Human-Induced Mortality Working Group (formerly Bycatch)

- **Commissioner's meeting**

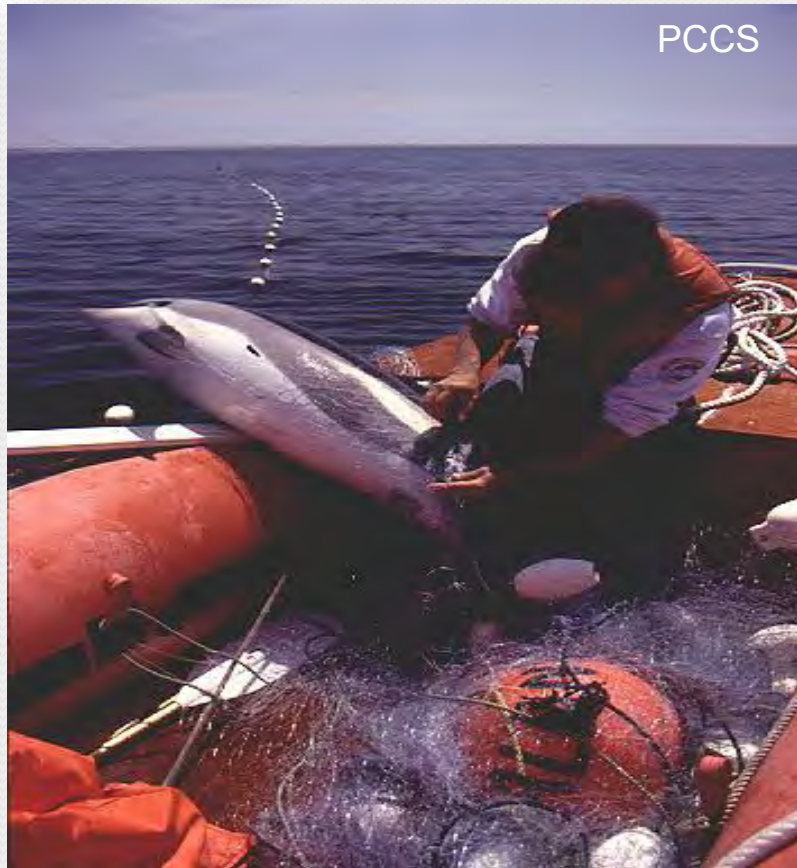
- ✓ Working Group on Whale Killing Methods & Associated Welfare Issues
- ✓ Conservation Committee



www.IWC.int

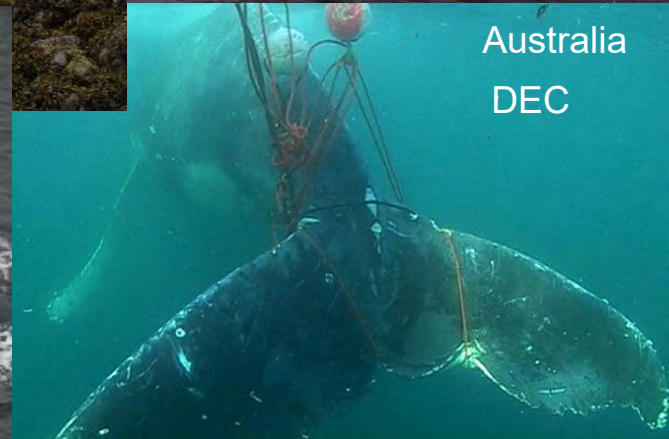
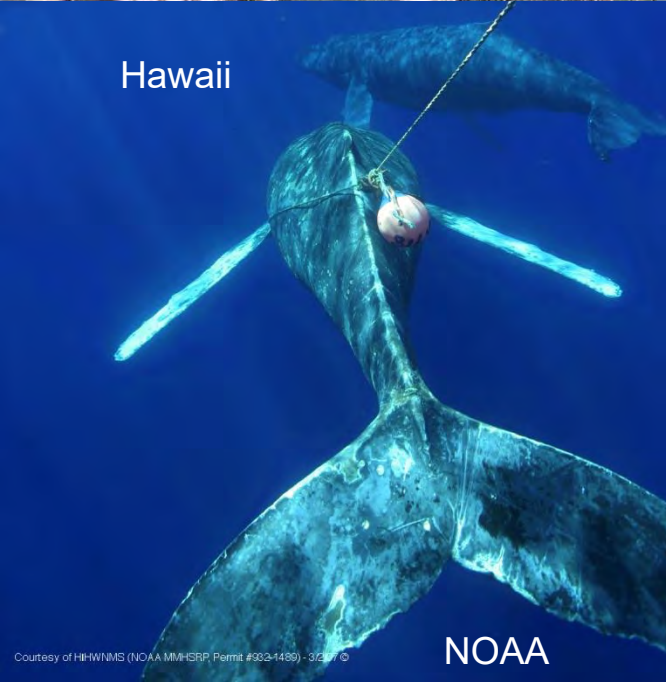


Determining the extent of the problem: Observer programs



- 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

COUNTRY	SPECIES										
	Mink	Humpback	Northern Right	Southern Right	Fin	Brydes	Gray	Sei	Bowhead	Blue	Sperm
Argentina											
Australia											
Brazil											
Newfoundland and Labrador, Canada*											
Denmark											
France											
Iceland											
Ireland											
Italy											
Japan											
Korea											
Mexico*											
Netherlands											
New Zealand											
Norway*											
Spain											
South Africa*											
Sweden											
UK											
USA*											

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



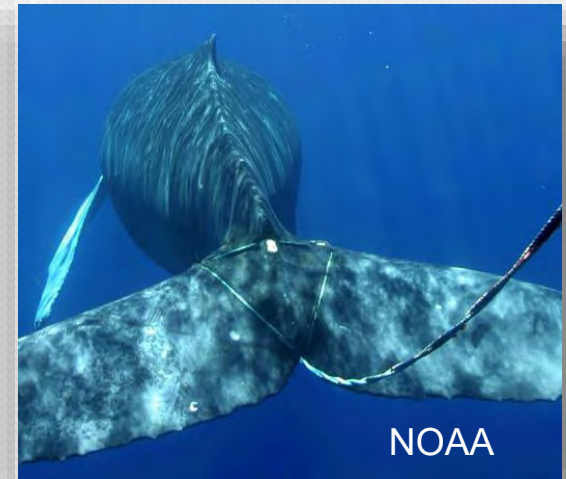
Feeding

W. Australia



Migrating

Hawaii



Breeding



Alaska



S. Africa



Hawaii

When and Where?



Gear type?



NOAA



NOAA



NOAA



SAWDN



NOAA

GEAR INVOLVED: REPORTED TO IWC

FAO GEAR TYPE

COUNTRY	SV	SX	TX	TMS	GND	GN	FPN	FPO	FYK	FSN	FIX	LLS	LLD	LL	NSC
Argentina	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
Australia [†]	-	-	-	-	-	X	-	X	-	-	X	X	-	X	X
Brazil	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-
France	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Iceland ^{††}	-	-	-	X	-	X	-	-	-	-	-	-	-	-	-
Ireland	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
Italy	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-
Japan ^{††}	-	-	-	-	-	X	X	-	-	-	X	-	-	-	-
Korea	X	X	X	-	X	X	X	X	X	X	-	-	-	X	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Zealand	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	X	-	-	X	-	-	-	-	-	X	-
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UK	-	-	-	-	-	X	-	X	-	-	-	-	-	-	-
USA ^{†††}			X		X			X				X		X	

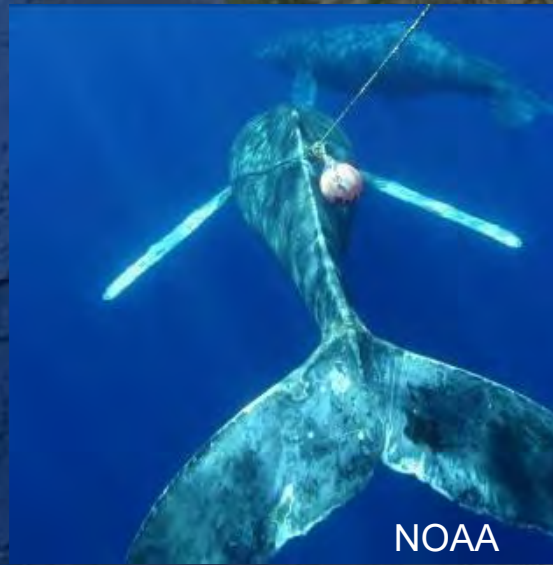
All passive (stationary or drifting) gear: (IWC/62/15)



Pribilof Isl, AK

Wrangell, AK

Unimak Pass, AK



Alaska Pot Gear in Hawaii:

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

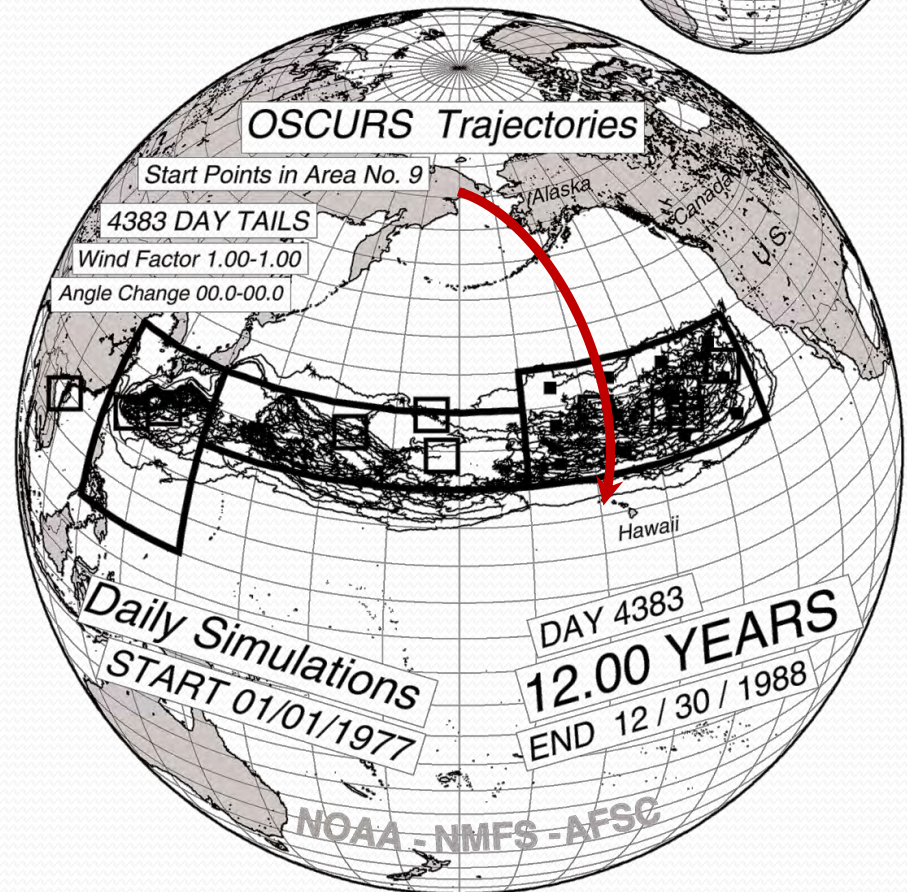
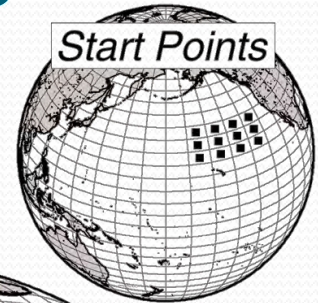
Marine Debris



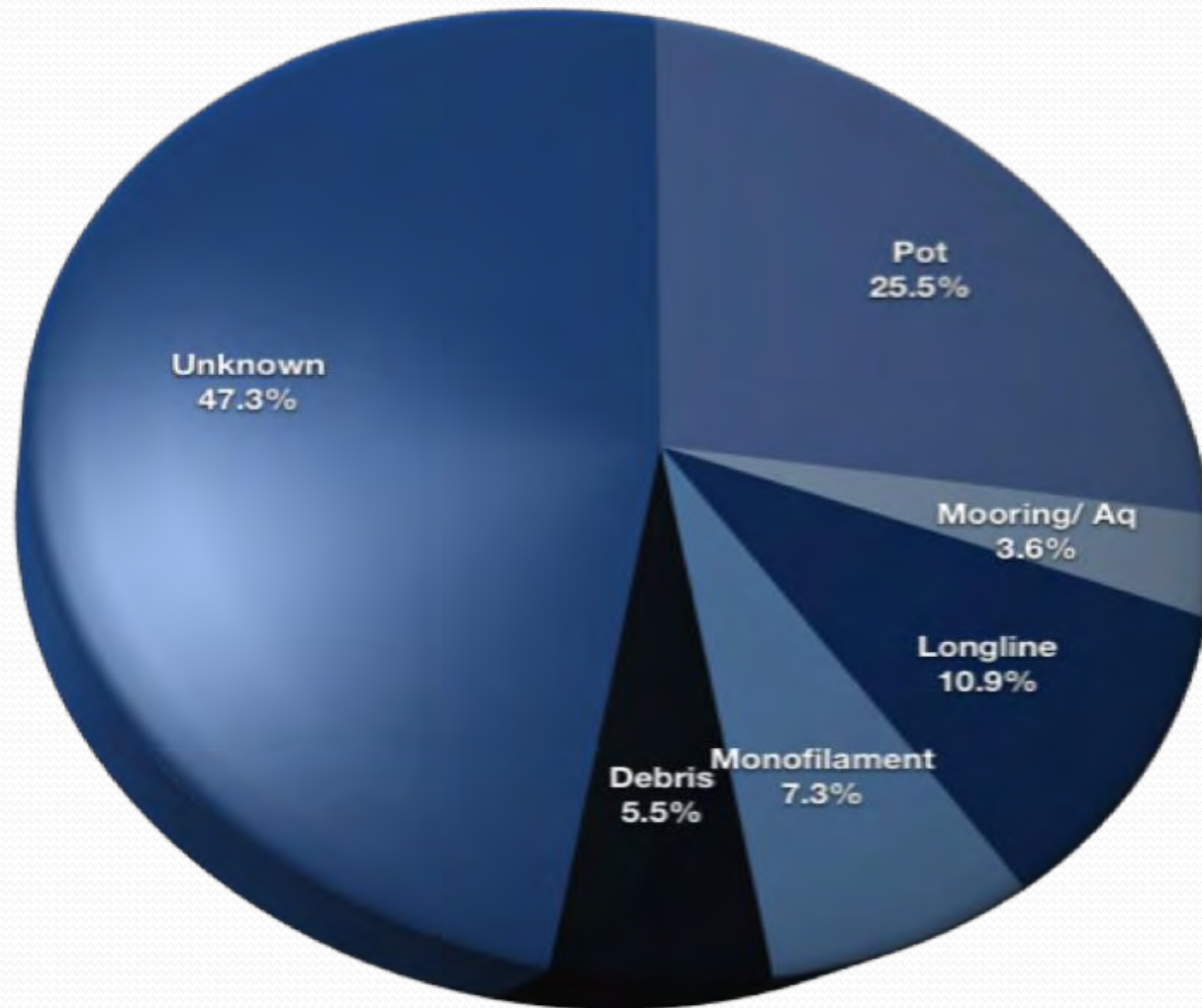
<http://iwc.int/pwoatiomd2013>

Debris?: while migrating?

Area 9
Eastern
Garbage Patch?



Gear retrieved from whales in Hawaii



TWO RECENT IWC WORKSHOPS ON SCOPE, IMPACTS AND MANAGEMENT ACTIONS (2013 AND 2014)

SC65a/Rep06

Report of the 2013 IWC Scientific Committee workshop on Marine Debris

1. Introductory items

1.1 Welcome and Opening Remarks

The workshop was held from 13-17 May 2013 at the Quisset Campus of the Woods Hole Oceanographic Institution (WHOI). The first day was a public seminar consisting of a number of keynote presentations and question and answer sessions.

Michael Moore, the Director of the Marine Mammal Center at WHOI welcomed everyone. He gave a brief description of the Woods Hole scientific community and noted that Woods Hole village had been a small whaling port, with the old spermaceti factory extant, and still known as the Candle House.

Mark Simmonds, as workshop convenor, thanked Michael and WHOI for hosting the workshop and everyone for coming. He commented that the old adage that things at sea tend to go on out of sight and out of mind certainly applied to a significant extent to marine debris. However, while entanglement was a well-known phenomenon in this part of the USA and one that many here were working hard to respond to, he added that this is an historic meeting. Both the IWC and the Woods Hole Oceanographic Institution were born long ago (the IWC in 1949 and WHOI in 1930). Both are concerned with marine conservation but this the first time that they have joined together in an initiative, and the first time that the IWC had held a public seminar. He thanked all the sponsors of the IWC's work on marine debris, including Oceana, the World Society for the Protection of Animals, the US National Oceanic and Atmospheric Administration (NOAA), the United Kingdom, the Environmental Investigation Agency (EIA), Humane Society International and the WHOI Marine Mammal Center.

A list of attendees is provided at Appendix One.

1.2 Procedural Matters

Simmonds was elected as Chair and Brookington, Hrudak, Ross, Sævi and Thiele were appointed as rapporteurs.

The adopted agenda is given in Appendix Two.

Review of documents: Simmonds drew attention to the documents which had been submitted to the workshop and were available through the IWC's document management website.

2. Keynote Presentations

2.1 Introduction to the work of the International Whaling Commission on environmental issues.

Simon Brookington, Executive Secretary of the IWC, introduced the range of environmental work being undertaken by the Commission. In particular, he highlighted progress to coordinate national programmes established to respond to whale entanglement in marine debris. The IWC strives to facilitate a co-ordinated, global capacity for responding to entangled whales, where apprentices from more than 15 countries have already been trained in safe disentanglement procedures. Other environmental work includes development of measures to



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>

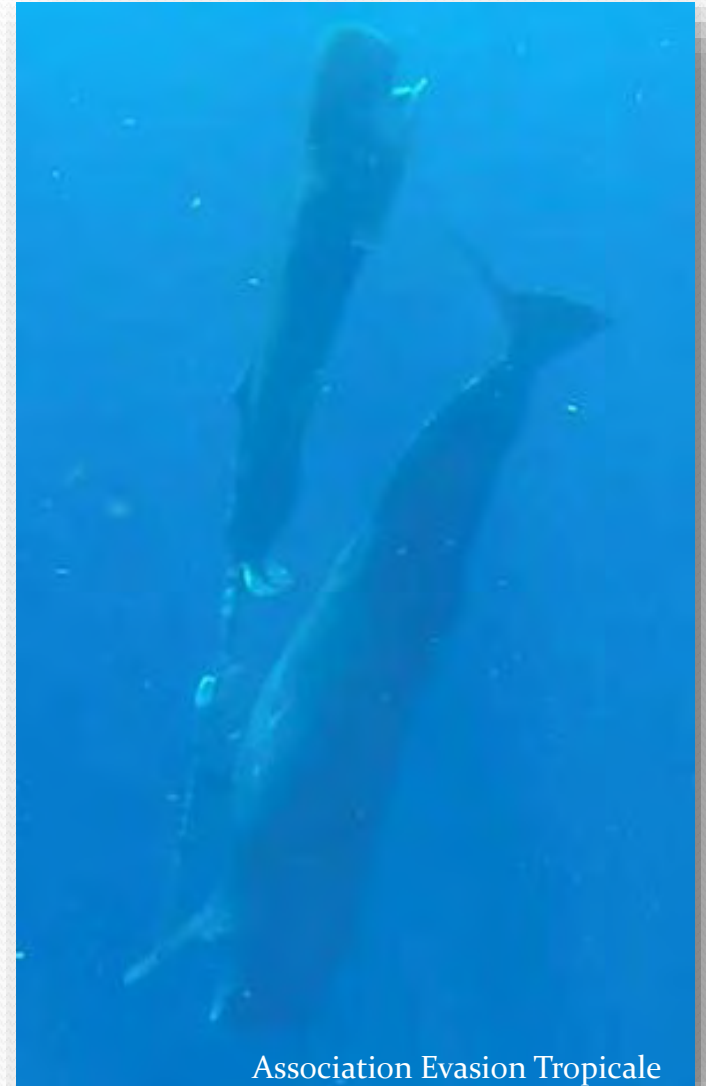


Sperm whales apparently play with FAD made of debris

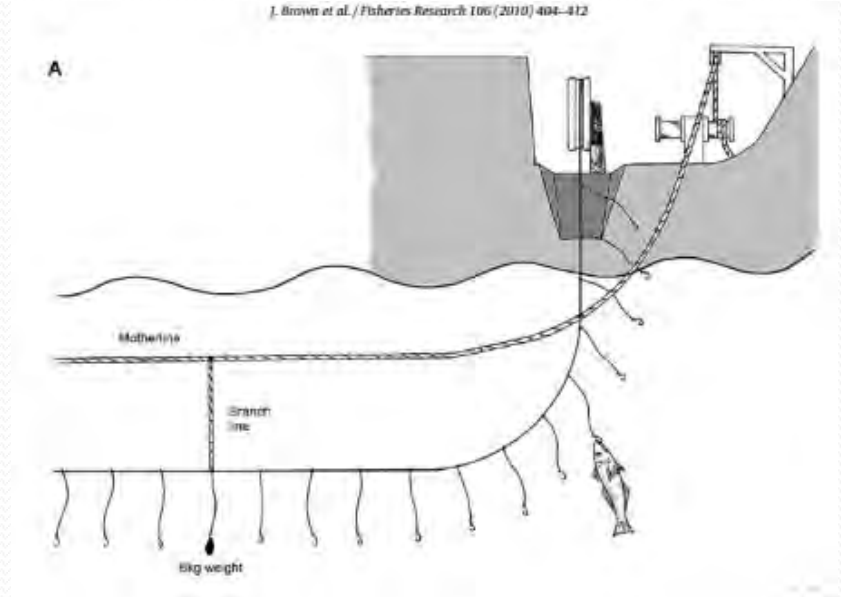
Guadeloupe, November, 2013



Caroline Rinaldi and Renato Rinaldi
SC/65b/ HIMo2, 2014, Bled, Slovenia



Possible Southern Ocean gear: Spanish (twin) long line?



Long line



Impacts to Fisheries

Newfoundland, Canada 1979 - 2012



WRS

How can entanglement kill a whale?



Immediate: Drowning



Long-term: Starvation



Chronic: Infection (sepsis)



Trauma: bleed out...etc



NOAA

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



P. Clark

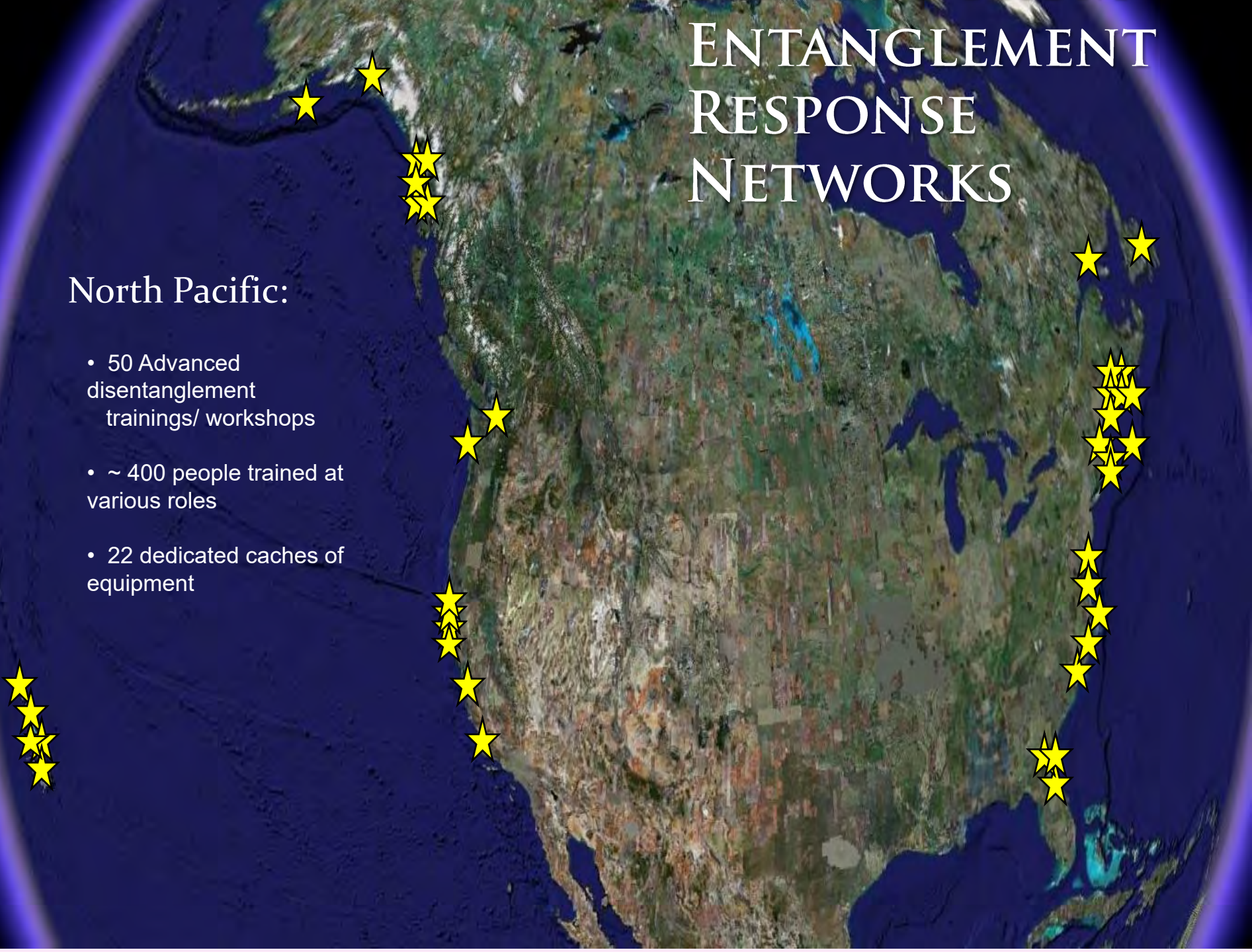
- Must float (e.g. not-starved)
- Die close to shore
- Prevailing wind & tide onshore
- Must be found and reported
- Limited time window before decomposition
- Often inconclusive cause of death

Recent studies suggest that only 1 in 10 bycatch mortalities strand

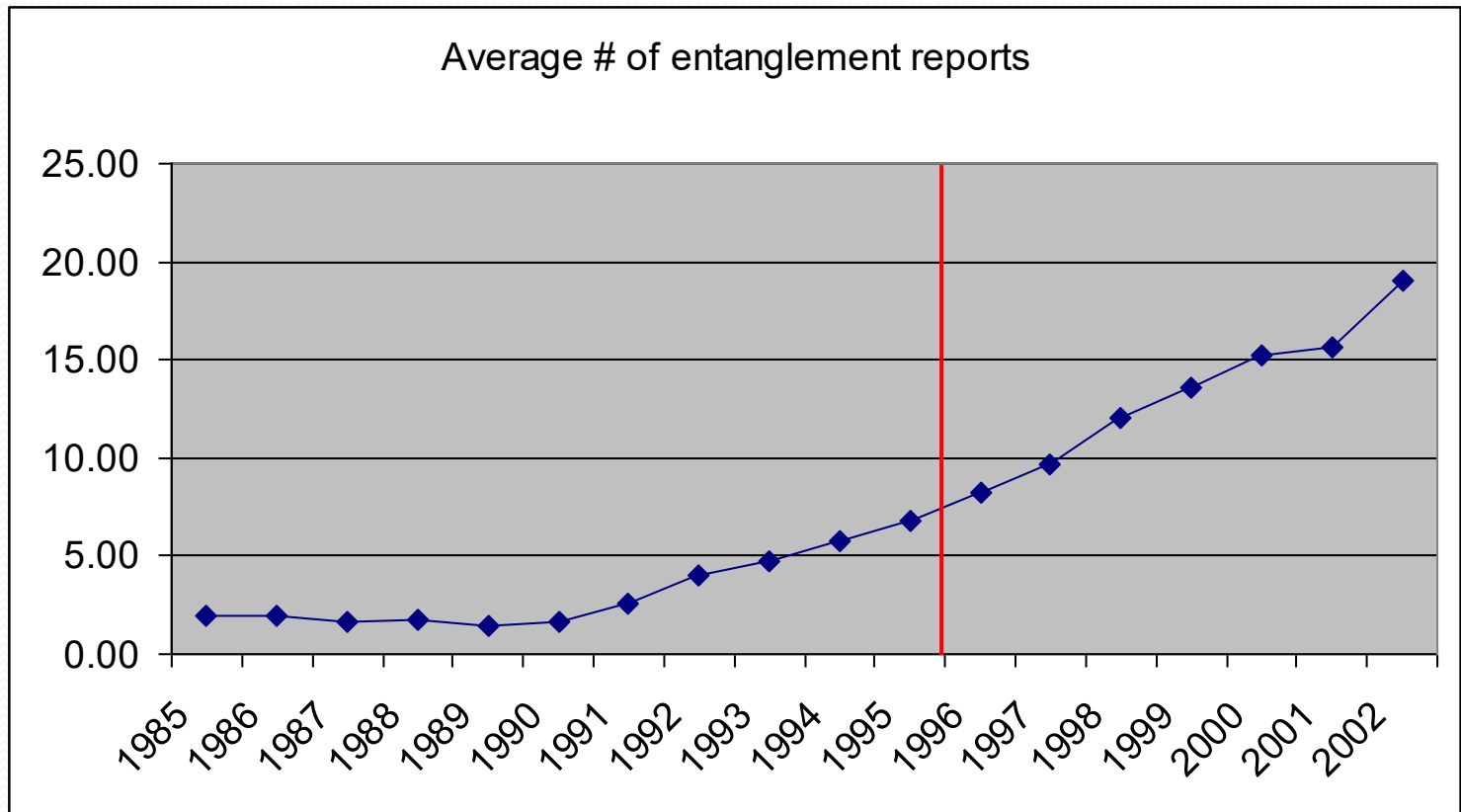
ENTANGLEMENT RESPONSE NETWORKS

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)



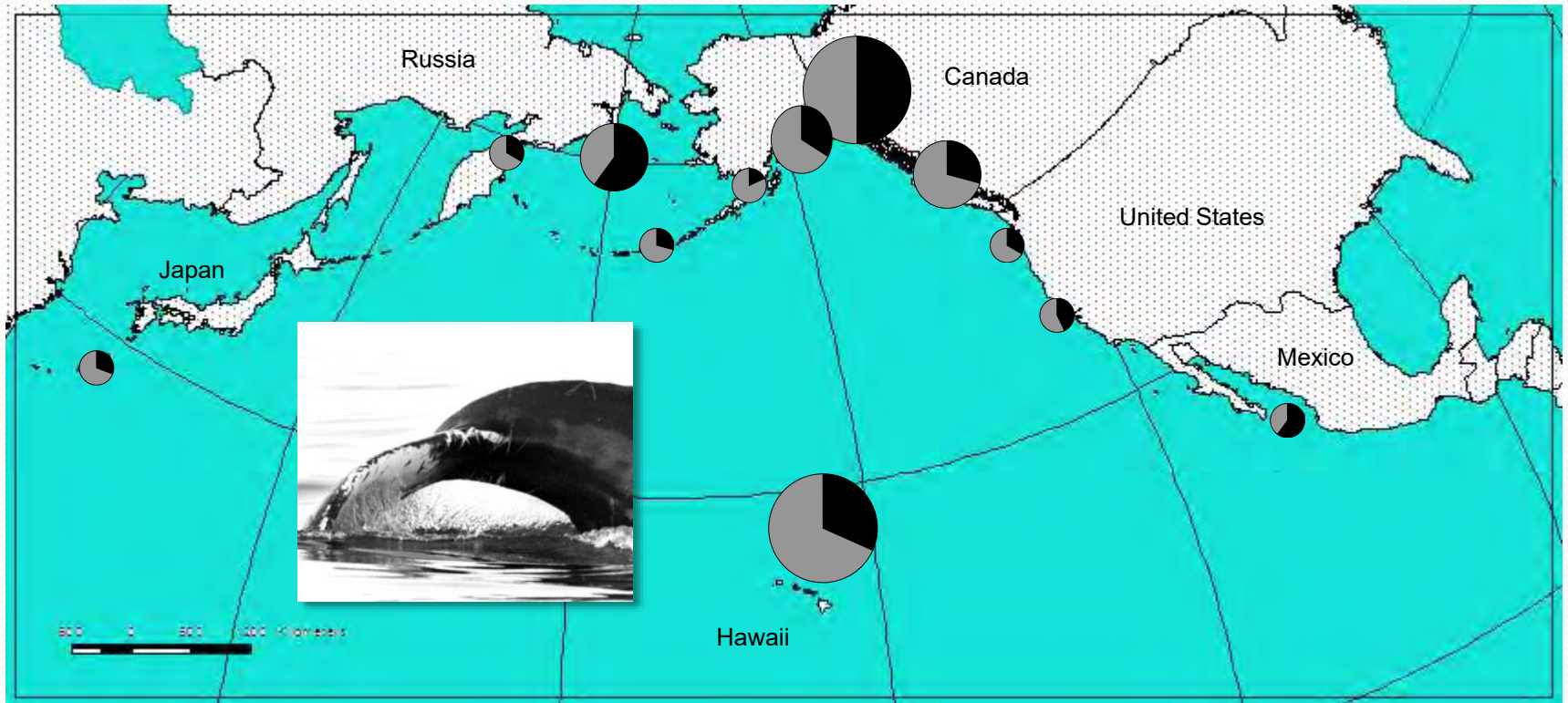
Scar studies indicate the scope and impact has been greatly under-estimated



- 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)



Robbins et al (2006, SC/59/BC15)



IWC WORKSHOP: MAUI, 2010



<http://iwc.int/index.php?cID=2635&cType=document>

- 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



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





SPREP
Secretariat of the Pacific Regional
Environment Programme



INTERNATIONAL
WHALING COMMISSION

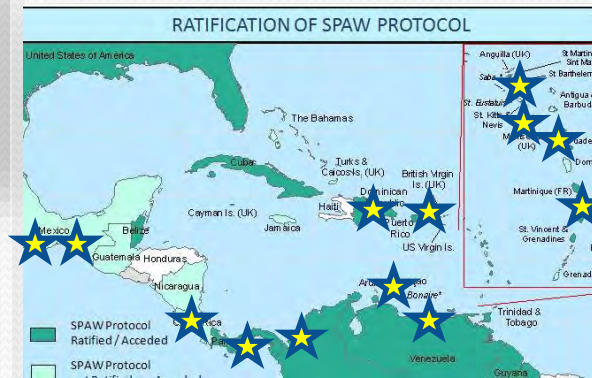


Natural Solutions
for Island Resilience

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



CONANP
Comisión Nacional de Áreas Naturales Protegidas

ECOBAT
Estrategia y Coordinación de BALLENAS

TRABAJANDO JUNTOS
PARA EVITAR QUE LAS
BALLENAS
SE ENREDEN EN
ARTES DE PESCA

**SI TE ENCUENTRAS UNA BALLENA ENMALLADA
O SI UNA BALLENA SE ENREDA EN TU ARTE DE PESCA**

- Nunca te metas al agua con una ballena enmallada. Esto es innecesario y pone tu vida en riesgo.
- Evalúa la situación. Determina si la situación es segura y mantén una distancia prudente.
- Pon una boya o marca en la red en la que está enredada la ballena para que pueda ser ubicada por los Equipos de la Red de Asistencia a Ballenas Enmalladas **RABEN**.
- No liberes a la ballena tú sólo, informa al equipo **RABEN** de tu localidad o avisa a la **SEMAR**, **CONANP** o Capitanía de Puerto.
- No te alejes de la ballena enmallada sin antes haberla reportado.
- Apoya o Únete al Equipo **RABEN** de tu localidad.

Para mayores informes y/o para compartir sugerencias para prevenir enmallamientos, por favor visita www.rabenmexico.org

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