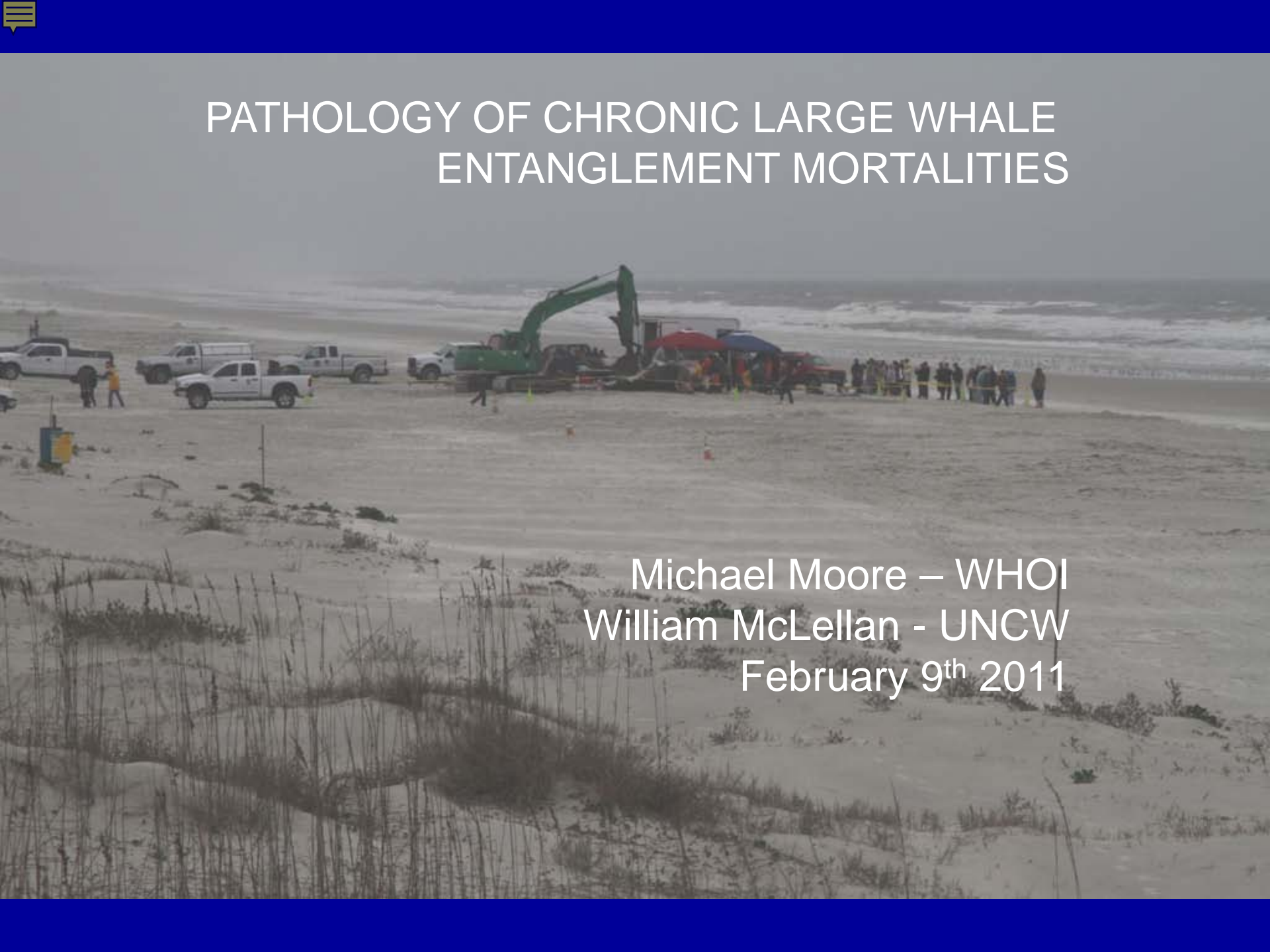




PATHOLOGY OF CHRONIC LARGE WHALE ENTANGLEMENT MORTALITIES

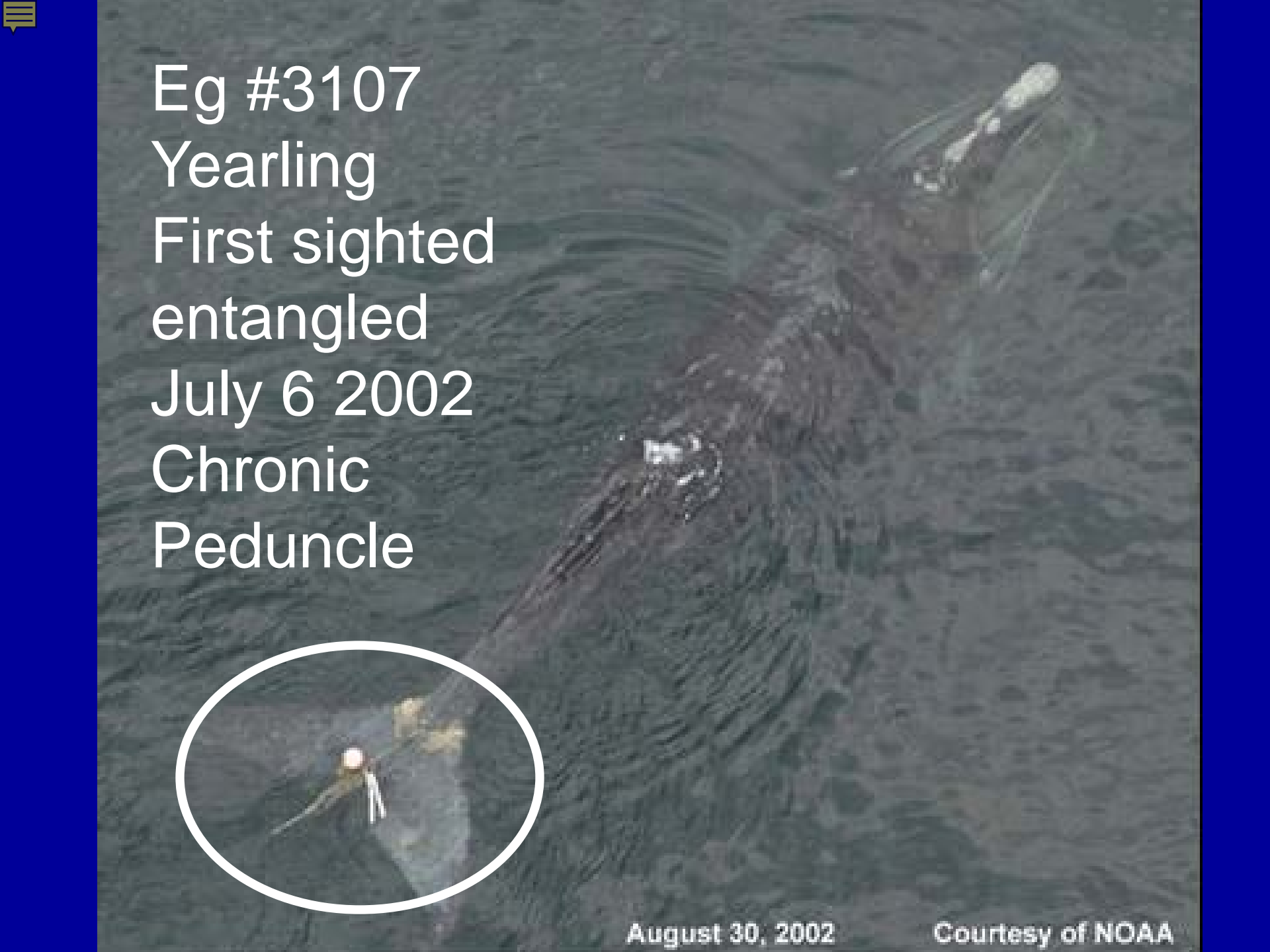


Michael Moore – WHOI
William McLellan - UNCW
February 9th 2011



NECROPSY EXAMINATION

1. Report of a dead whale – towed in if at sea. if practical
2. Arrangements made for beach necropsy and disposal
3. Lesions examined, documented, dissected and sampled for histopathology
4. Gross report prepared
5. Histopathology samples examined and reported
6. Case report assembled and finalized and submitted to NOAA

An aerial photograph of a whale, likely a humpback whale, entangled in a fishing net. The whale is dark in color and is partially submerged in the water. The net is visible as a lighter, tangled mass around the whale's body. The water is dark and choppy. A white circle is drawn around the lower part of the whale's body, highlighting the area of entanglement.

Eg #3107
Yearling
First sighted
entangled
July 6 2002
Chronic
Peduncle

August 30, 2002

Courtesy of NOAA

Eg #3107 August 1 2002

Courtesy of New England Aquarium

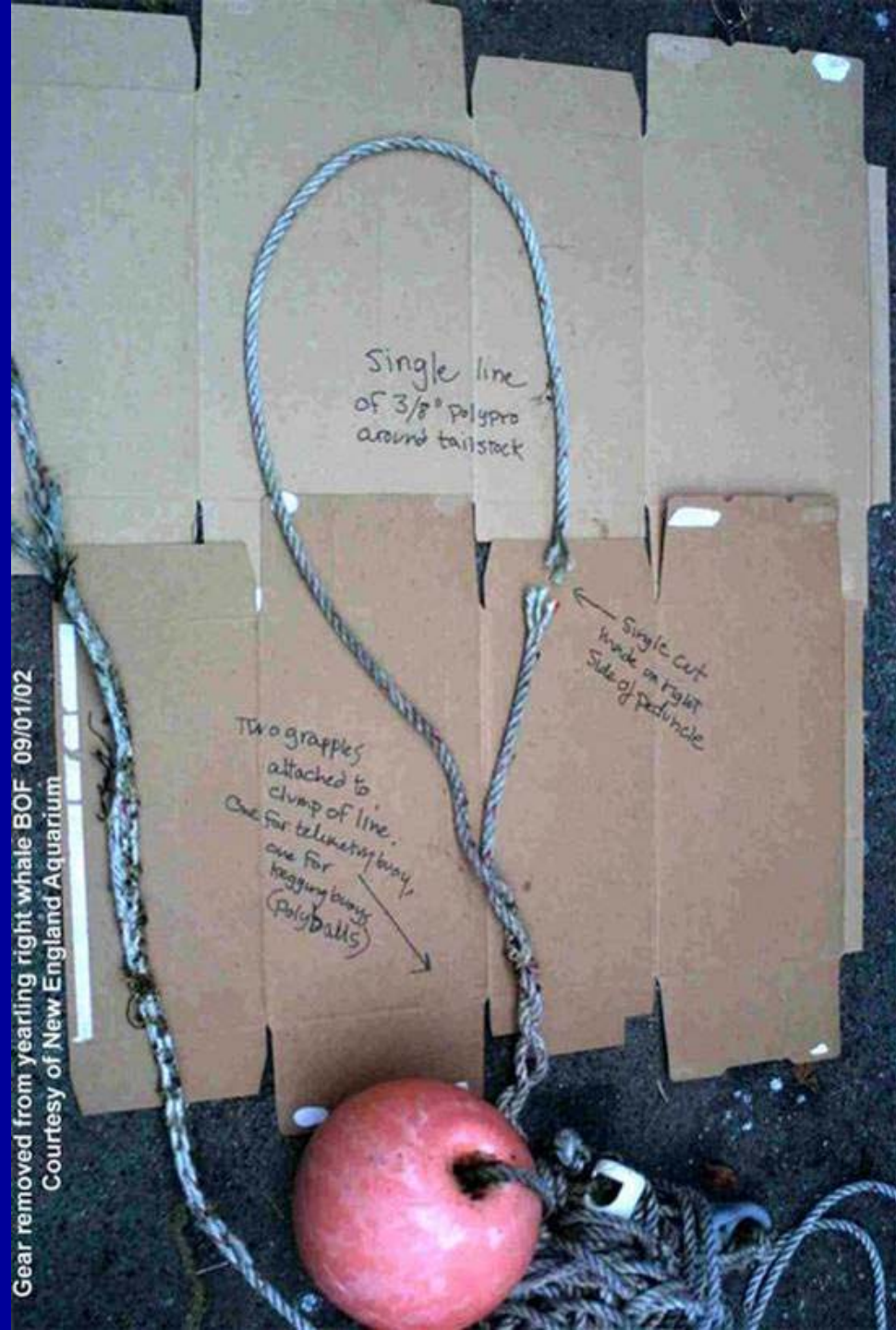
August 1, 2002



Eg #3107

Gear
Removed
Bay of
Fundy

Sept 1
2001



Gear removed from yearling right whale BOF 09/01/02
Courtesy of New England Aquarium



Eg #3107 Sept 30 2001 Photo NOAA



September 30, 2002 Courtesy of NOAA

Eg #3107 Nantucket, Mass. Oct 12 2002
Dorsal peduncle



Eg #3107 Nantucket, Mass. Oct 12 2002
Ventral peduncle. Photo: Peter Brown NMMST





Eg #3107

Looking cranially

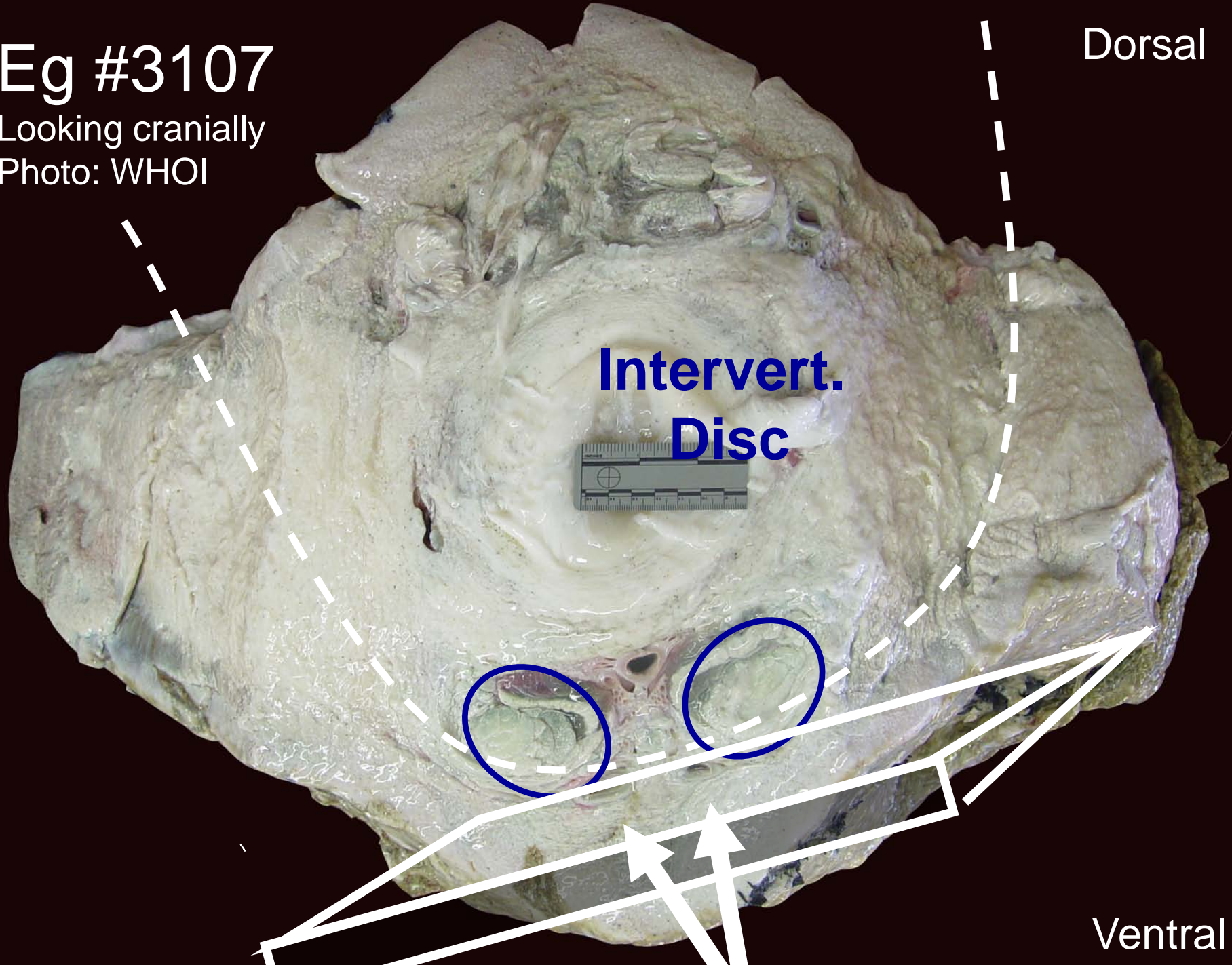
Photo: WHOI

Dorsal

Intervert.
Disc



Ventral



CRANIAL

CAUDAL

MH 02-726-8g

Eg #3107

MOORE/WIHOI



 **Eg #2301 SEPTEMBER 6th 2004** Photos: NEAq

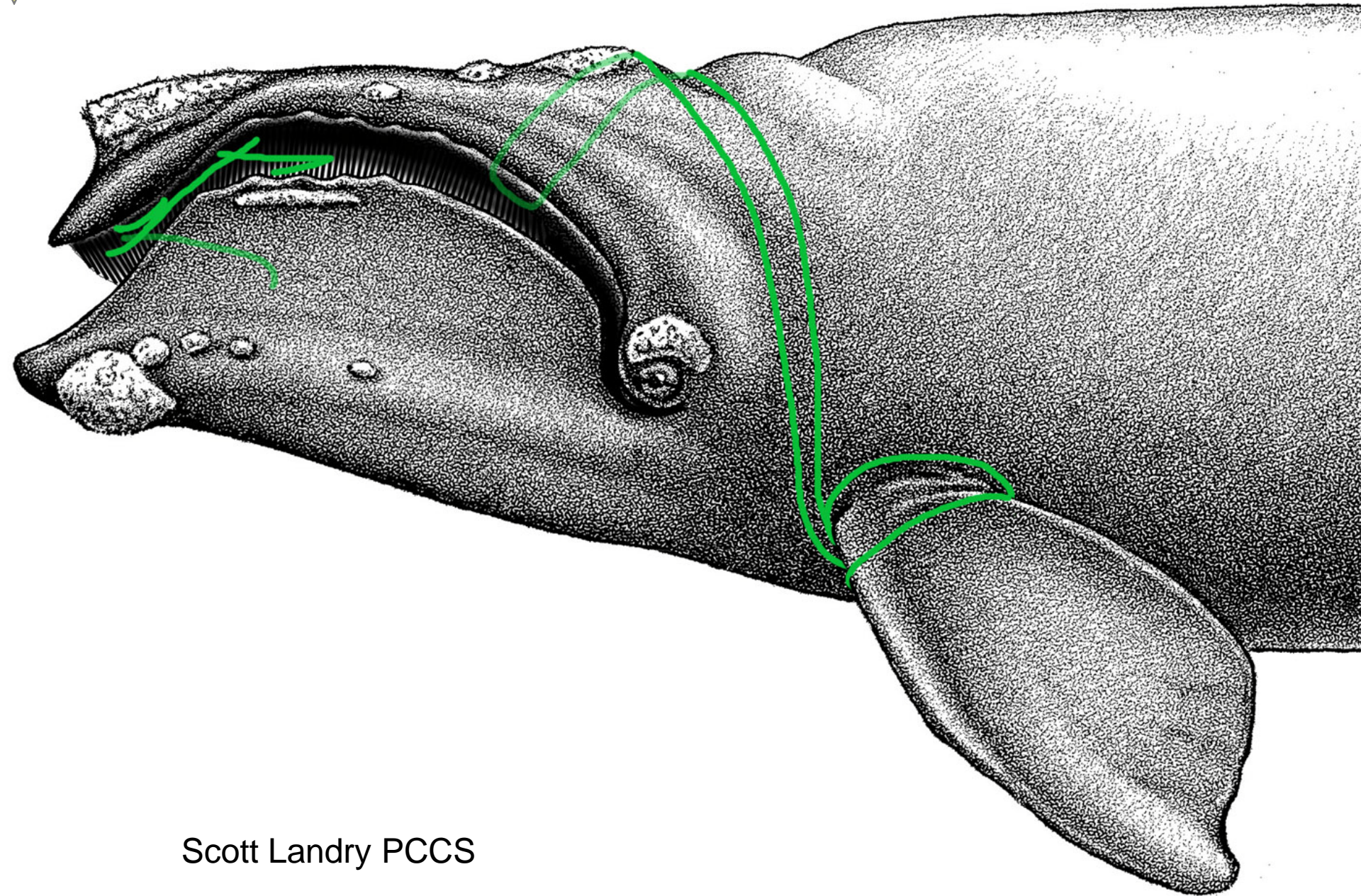


September 6, 2004

Courtesy of New England Aquarium



March 04 2005. Wreck Island, VA
Photograph: USCG



Scott Landry PCCS





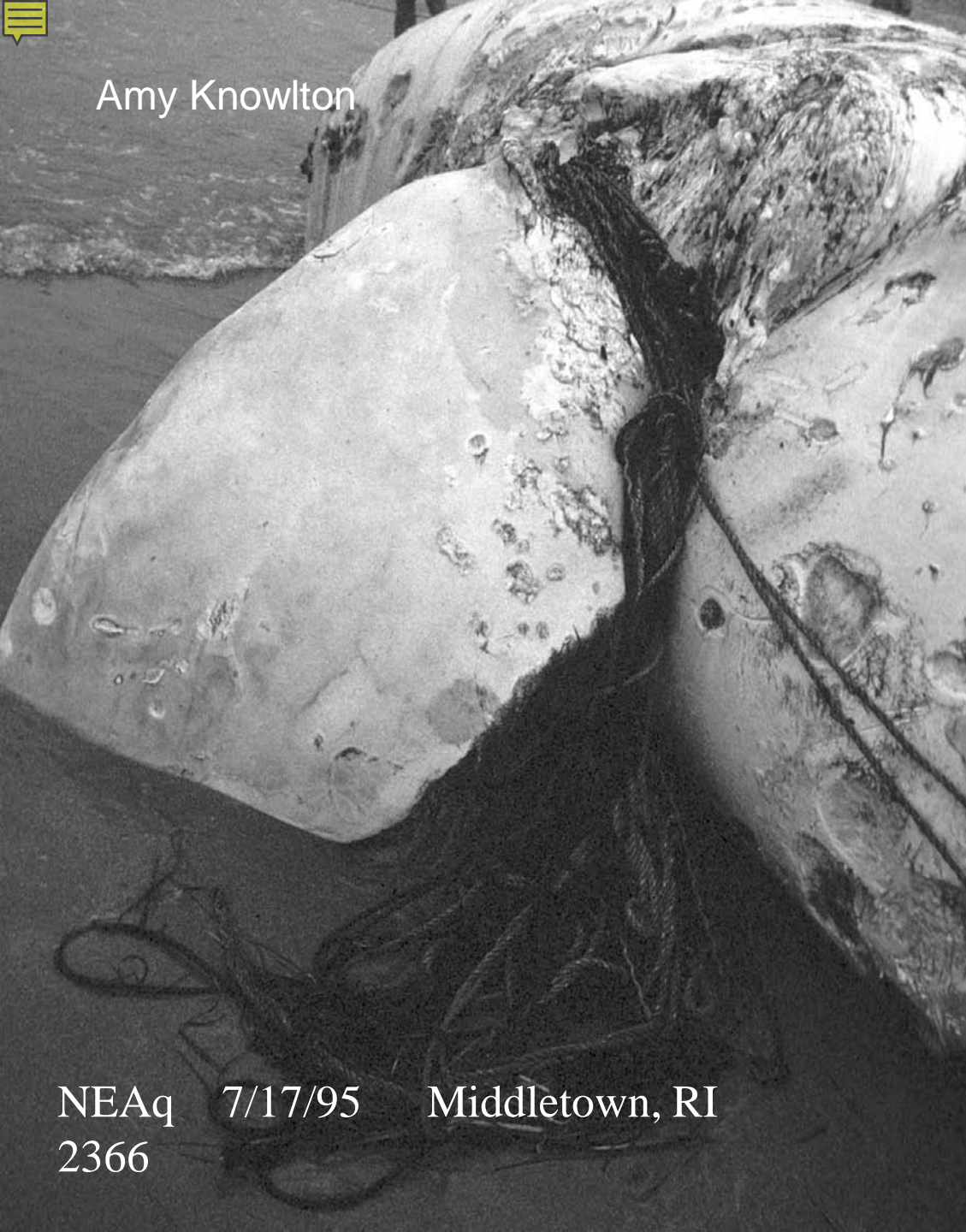
WATER SAMPLE
1. 100-105
2. 100-105
3. 100-105







Amy Knowlton

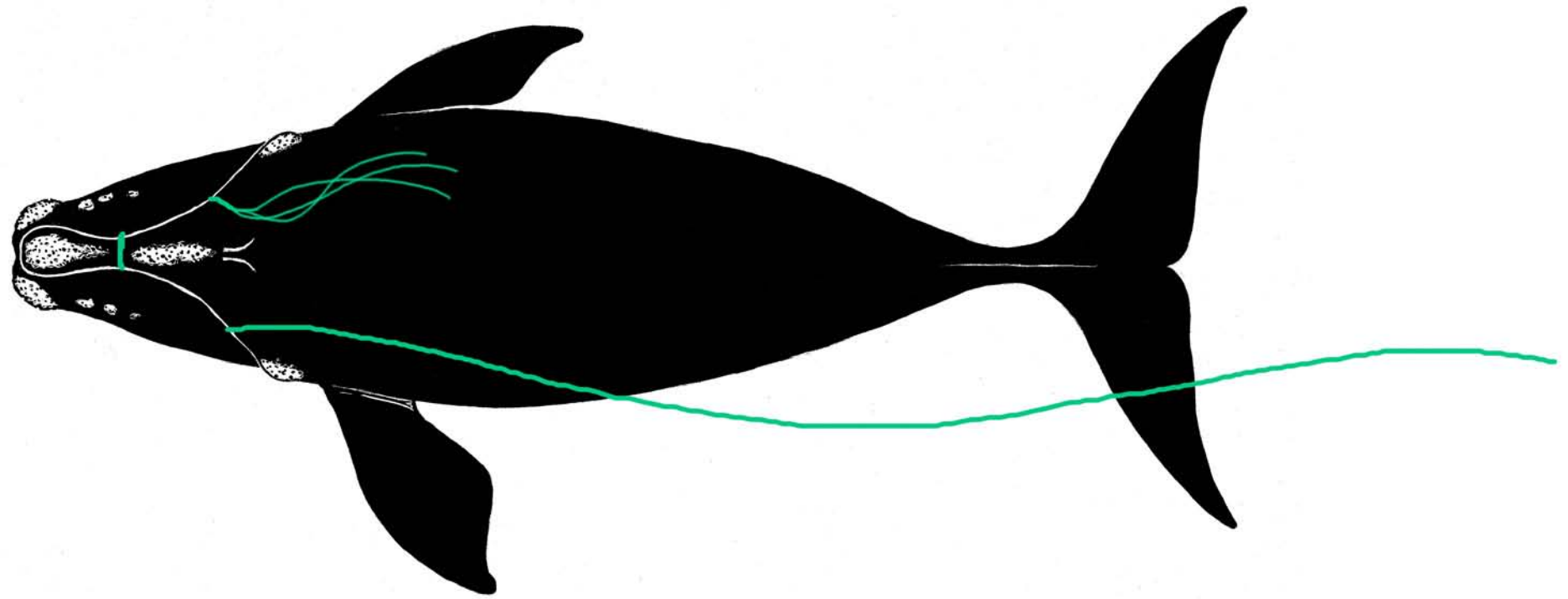


NEAq 7/17/95 Middletown, RI
2366

Phillip Hamilton

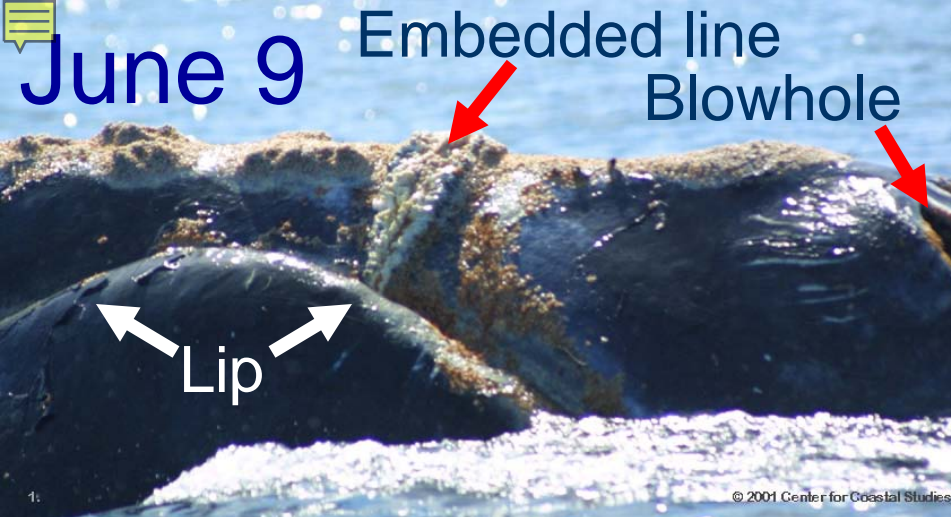


Michael Moore



Eg#1102 - Chronic – rostrum but lethal

Drawing: Scott Landry

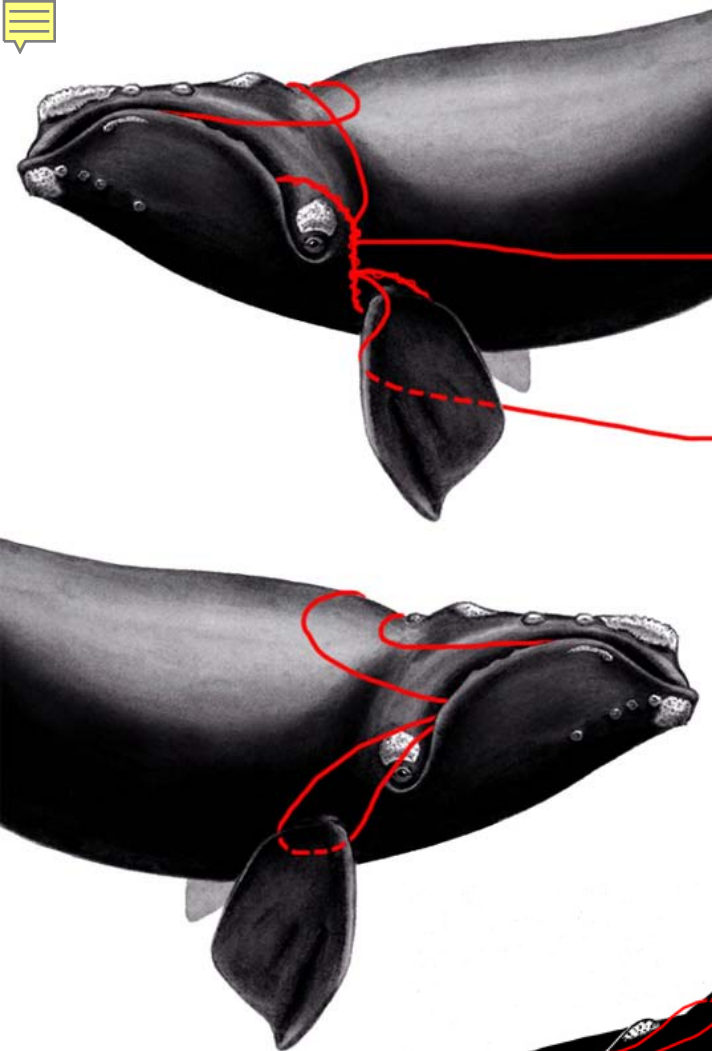


Chronic
Rostrum
Eg #1102
2001

Loss of
condition



Photos: PCCS



3911 – EgNEFL1103

First sighted entangled 12/25/10

20% thinner than a 'normal' right whale

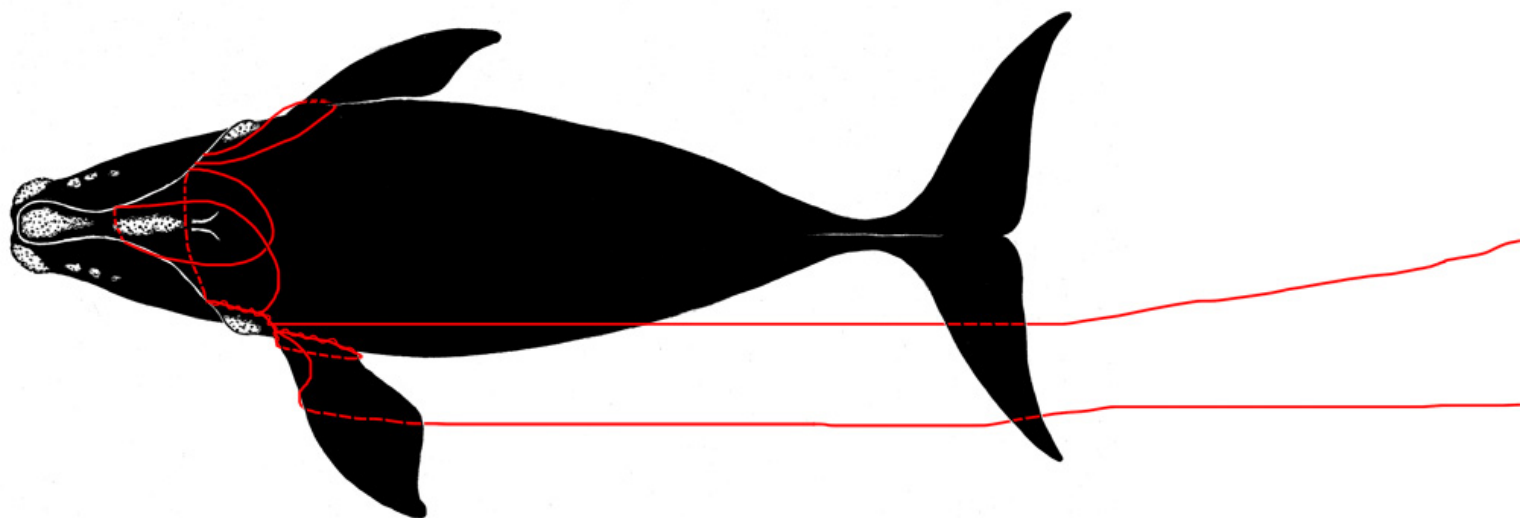
Gear removed 12/30/10

More gear removed after sedation 01/15/2011

Satellite tag quit 01/21/2011

Found dead 02/01/2011

Sketches by Scott Landry





EgNEFL1103
02/02/2011
Images by FWC



EgNEFL1103

Full extent of mouth involvement not apparent until lower jaws and tongue removed



EgNEFL1103

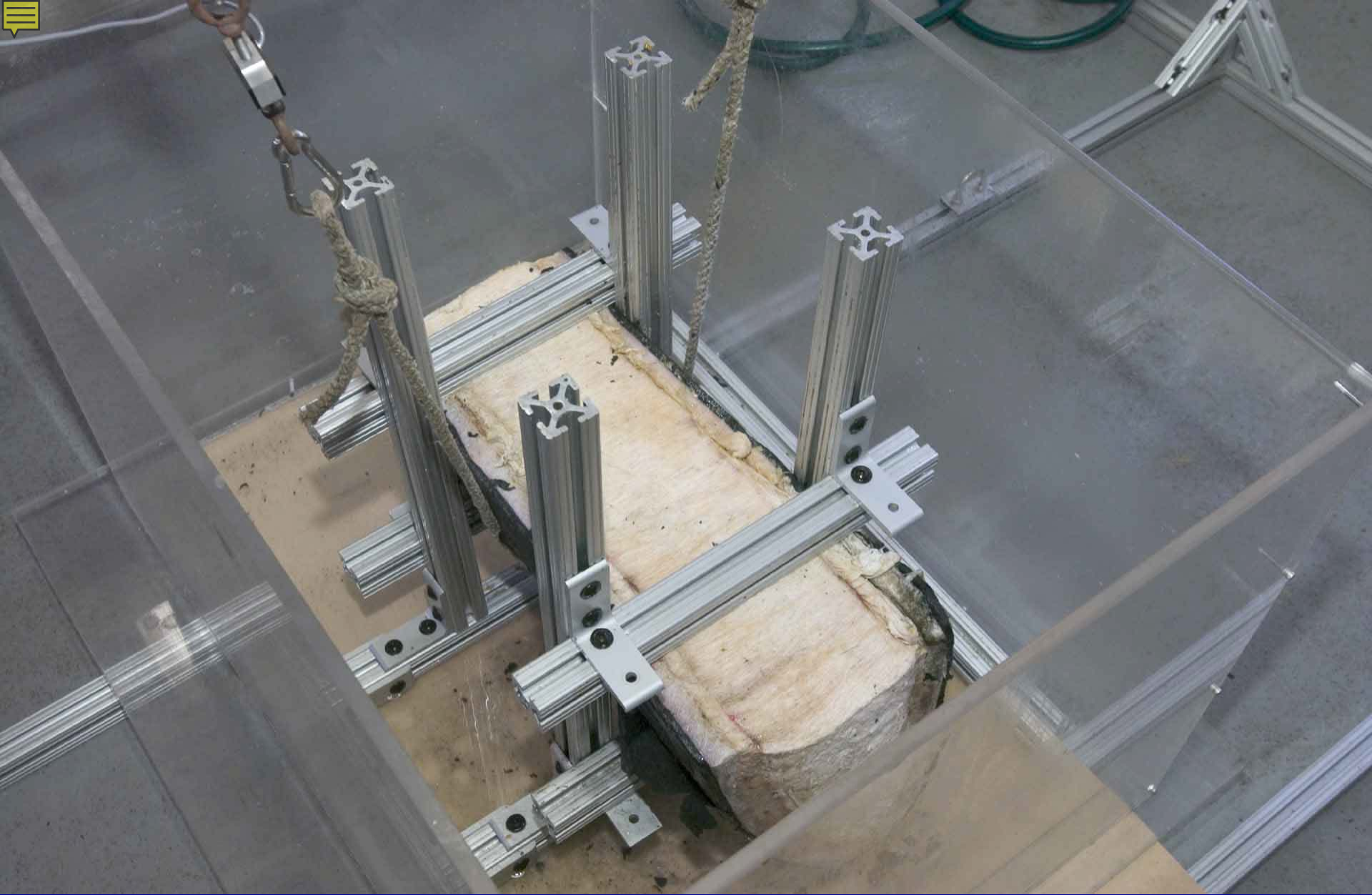
Line embedded in right lip

Photos _ K Jackson FWC





Test rig for line impact modelling



Right Whale Calf Flipper

11.3-kg Load

7.6-cm draw

2.5-cm draw



Humpback Whale Fluke

31.8-kg Load

7.6-cm draw

2.5-cm draw



Conclusions

- Entanglements involve head, flippers, body and tail
- Line can incise down to bone if mobile over flesh
- Bone can grow around line
- Bone and soft tissue attempt to wall off the line
- Bone development impacts
- Mean duration if lethal ~ 5.5 months