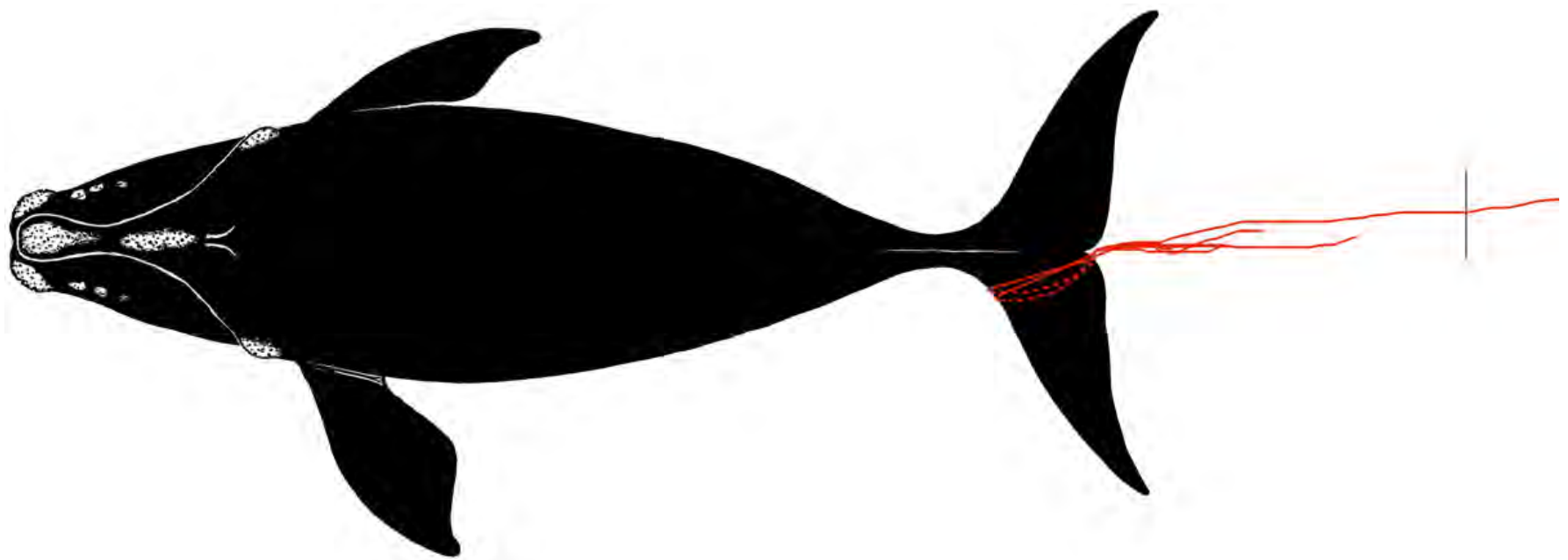


<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>2470</b>
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Date first observed entangled (date seen prior without gear)		13 May 2010 ( 24 Jan 2010 )			
Sex	Male	Birth year	Unknown	Age at entanglement	17+

Case study ID	CCS	NMFS	GEAR ID
	WR-2010-03		J051310
Gear sample collected?	Yes	Gear type	



Reproductive prior to/after entanglement detection?					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ Rostrum	Flippers	Body	Flukes
	None	None	None	Unknown	High
Duration of time carrying gear		Minimum 1 day, maximum 106 days			
Disentangled?		Yes - 13 May 2010			
Status		Alive - Last sighted in 2021			
Number of prior entanglement interactions		4			

Entanglement configuration	One continuous piece of line wrapping the left fluke blade twice and trailing aft of the flukes by ~130feet
Anchoring point(s)	Flukes
Gear configuration confidence	High
Remaining questions	
Comments	Line was configured in such a way that the drag of the trailing line kept the fluke wraps tight even as the leading and trailing edges of the flukes eroded.

Polymer Type	Polysteel	
Gear Component		
Rope Diameter (inches)	5/8 (0.652)	
Breaking Strength (lbs)	Tested	6 480
	New	9 000

This case study was developed under NOAA Award # NA09NMF4520413 to the Consortium for Wildlife Bycatch Reduction, administered at the New England Aquarium, Boston, MA, USA (available at [www.bycatch.org](http://www.bycatch.org)). See: Knowlton, A.R., J. Robbins, S. Landry, H.A. McKenna, S.D. Kraus, T. B. Werner. 2015. Effects of fishing rope strength on the severity of large whale entanglements. Conservation Biology DOI: 10.1111/cobi.12590



13 May 2010 NEFSC



13 May 2010 NMFS



13 May 2010 PCCS



13 May 2010 NEFSC



## DATA SHEET

### FORENSIC ANALYSIS OF ROPES WHALE ENTANGLEMENT PROJECT

**SPECIMEN ID NO.**

**J051310rw**

**NMFS NO.**

**E04-10**

**Gear Description:**

The gear is as seen in the photos below. Algae growth on much of it. Tangling and some severe damage. Some cuts and knots noted by recovery team.





**Rope description:**

J051310-1: Line was  $\frac{5}{8}$  inch white polysteel but measured slightly undersized. There were 18 yarns per strand. The line was soft. An orange tracer is in one strand. Condition was fair overall but some areas showed severe damage.

Tested (T) or adjusted (A) strength	Typical new strength	Rope condition
6,480 lbs (T)	9,000 lbs	Fair



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 1124</b>
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Date first observed entangled (date seen prior without gear)		27 Jun 2010 (5 Jan 2010)			
Sex	Male	Birth year		Age at entanglement	31+

Case study ID	CCS	NMFS	GEAR ID
	WR-2010-07	E08-10	
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unk	High	High	Unk	Unk
Duration of time carrying gear		Minimum 1 days, maximum 172 days			
Disentangled?		No			
Status		Dead			
Number of prior entanglements		2			

Entanglement configuration	Multiple wraps embedded around rostrum. Flippers also had deep, chronic wounds
Anchoring points	Mouthline, flippers
Gear configuration confidence	High
Remaining questions	
Comments	Covered with orange cyamids

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



30 June 2010, US Coast Guard, rostrum and left flipper



27 June 2010, US Coast Guard, body and left flipper



27 June 2010, US Coast Guard, left body



1 July 2010, WHOI, deep cut from rope in rostrum



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 1503</b>
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Date first observed entangled (date seen prior without gear)		10 Sep 2010 (12 Apr 2010)			
Sex	Female	Birth year	1985	Age at entanglement	25

Case study ID	CCS	NMFS	GEAR ID
	WR-2010-20	E20-10	
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection		Yes/No			
Entanglement injury severity		Moderate			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unk	Medium	Unk	None	Medium
Duration of time carrying gear		Minimum 1 days, maximum 150 days			
Disentangled?		No			
Status		Presumed dead. Last seen 2010			
Number of prior entanglements		4			

Entanglement configuration	Three entwined ropes exit left mouth crossing rostrum towards right flipper
Anchoring points	Mouthline, flipper?
Gear configuration confidence	Low
Remaining questions	Involvement of one or both flippers is unknown
Comments	

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



10 Sep 2010, Blue Ocean Society



10 Sep 2010, Blue Ocean Society



10 Sep 2010, Blue Ocean Society



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3120</b>
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Date first observed entangled (date seen prior without gear)		20 Oct 2010 (19 Oct 2010)			
Sex	Male	Birth year	2001	Age at entanglement	9

Case study ID	CCS	NMFS	GEAR ID
	WR-2010-21	E22-10	
Gear sample collected?	No	Gear type	U.S. gillnet

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Medium	None	High	None	Medium
Duration of time carrying gear		Minimum 89 days, maximum 153 days			
Disentangled?		No			
Status		Alive - last seen in 2021			
Number of prior entanglements		2			

Entanglement configuration	Line around body and probably one or both flippers
Anchoring points	Flippers?, mouthline?
Gear configuration confidence	Low
Remaining questions	Uncertain how mouth and flippers were involved
Comments	Gear shed

Polymer type		
Gear component		Float line
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



20 Oct 2010, Blue Ocean Society



20 Oct 2010, Blue Ocean Society



20 Oct 2010, Blue Ocean Society



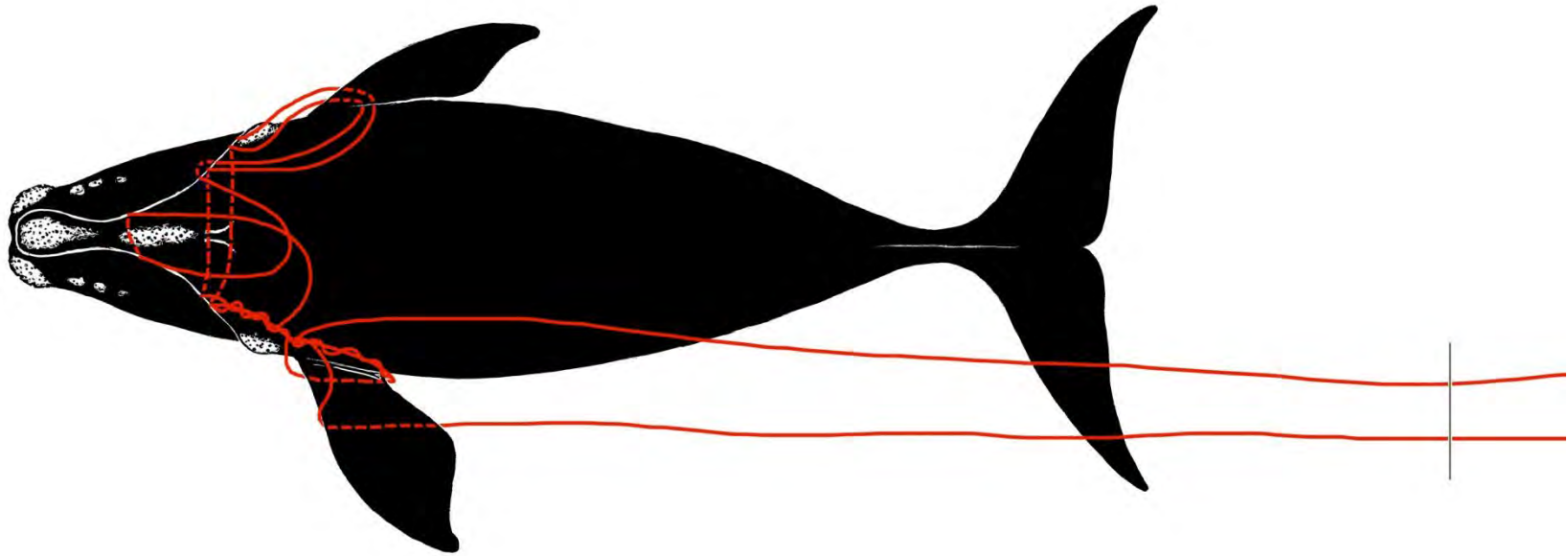
18 Sep 2011, NEAq, deep injury left flipper



Species	Right Whale	Whale ID	Eg # 3911
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Date first observed entangled (date seen prior without gear)	25 Dec 2010 (23 Feb 2010)				
Sex	Female	Birth year	2009	Age at entanglement	2

Case study ID	CCS	NMFS		GEAR ID
	WR-2010-23	E25-10		J122510 rw
Gear sample collected?	yes	Gear type	Trap/pot	



Reproductive prior to/after entanglement detection		No/No			
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	High	High	High	Medium	High
Duration of time carrying gear		Minimum 38 days, maximum 342 days			
Disentangled?		Yes, partial			
Status		Dead			
Number of prior entanglements		1			

Entanglement configuration	Ropes through mouth, around both flippers, and trailing ~200 ft
Anchoring points	Moutline, flippers
Gear configuration confidence	High
Remaining questions	
Comments	Poor conditon, succumbed to sharks

Polymer type	Copolymer
Gear component	Floating groundline
Rope diameter (inches)	7/16 (0.4375)
Breaking strength (lbs)	Tested
	New



25 Dec 2011, FL FWC



25 Dec 2011, FL FWC



25 Dec 2011, FL FWC



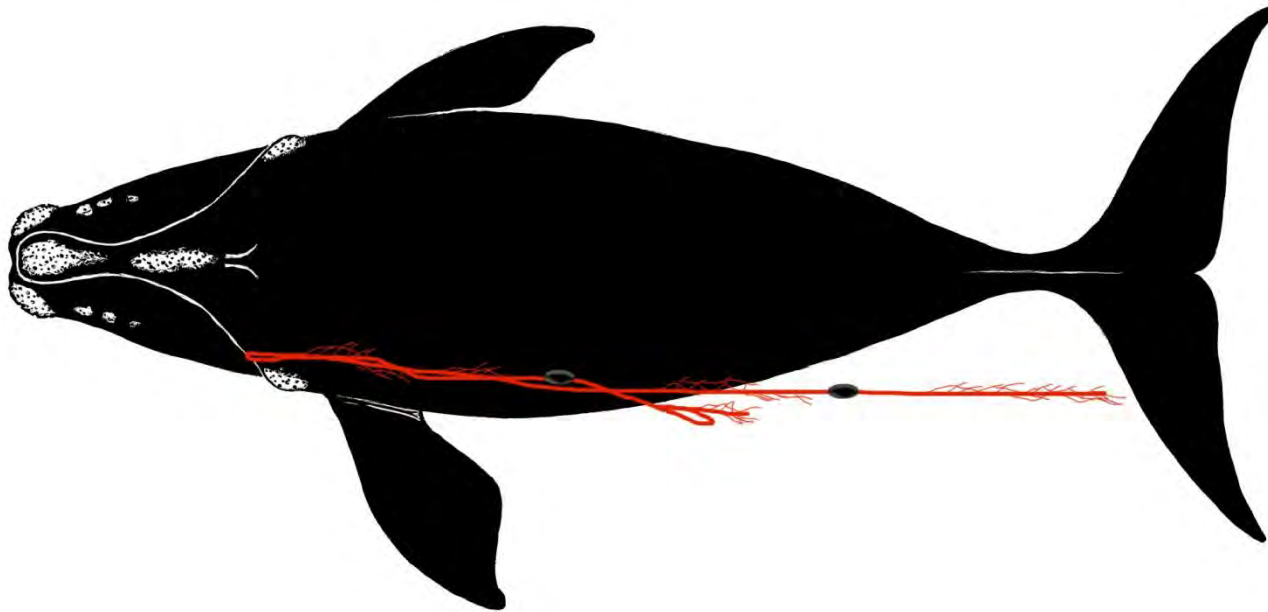
1 Feb 2011, FL FWC



Species	Right Whale	Whale ID	Eg # 3010
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Date first observed entangled (date seen prior without gear)		19 Jan 2011 (31 Dec 2010)			
Sex	Female	Birth year		Age at entanglement	12+

Case study ID	CCS	NMFS		GEAR ID
	WR-2011-02	E02-11		
Gear sample collected?	No	Gear type	US southeast gillnet	



Reproductive prior to/after entanglement detection		Yes/Yes			
Entanglement injury severity		Minor			
Entanglement configuration risk		Low			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Low	None	Unk	None	Low
Duration of time carrying gear		Minimum 11 days, maximum 110 days			
Disentangled?		No			
Status		Alive - last seen in 2021			
Number of prior entanglements		1			

Entanglement configuration	Single rope exiting left side of mouth
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Gear shed

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



FWC

19 Jan 2011, Florida FWC



FWC

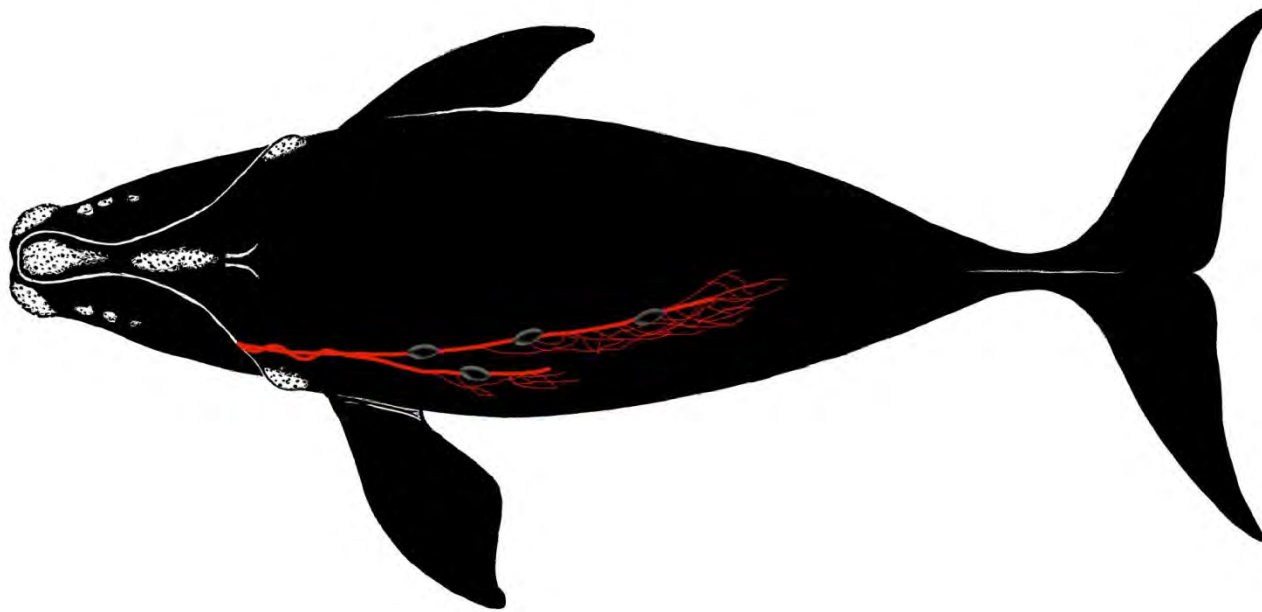
19 Jan 2011, Florida FWC



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3712</b>
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Date first observed entangled (date seen prior without gear)		30 Jan 2011 (13 Nov 2010)			
Sex	Male	Birth year	2007	Age at entanglement	4

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-03	E03-11	
Gear sample collected?	No	Gear type	US gillnet



Reproductive prior to/after entanglement detection						
Entanglement injury severity						Moderate
Entanglement configuration risk						Low
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes	
	None	None	None	None	Medium	
Duration of time carrying gear		Minimum 10 days, maximum 163 days				
Disentangled?		No				
Status		Alive - last seen in 2021				
Number of prior entanglements		2				

Entanglement configuration	Single rope and netting exiting left mouth and halfway down body
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Gear shed

Polymer type	
Gear component	Floatline
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



30 Jan 2011, FWRI



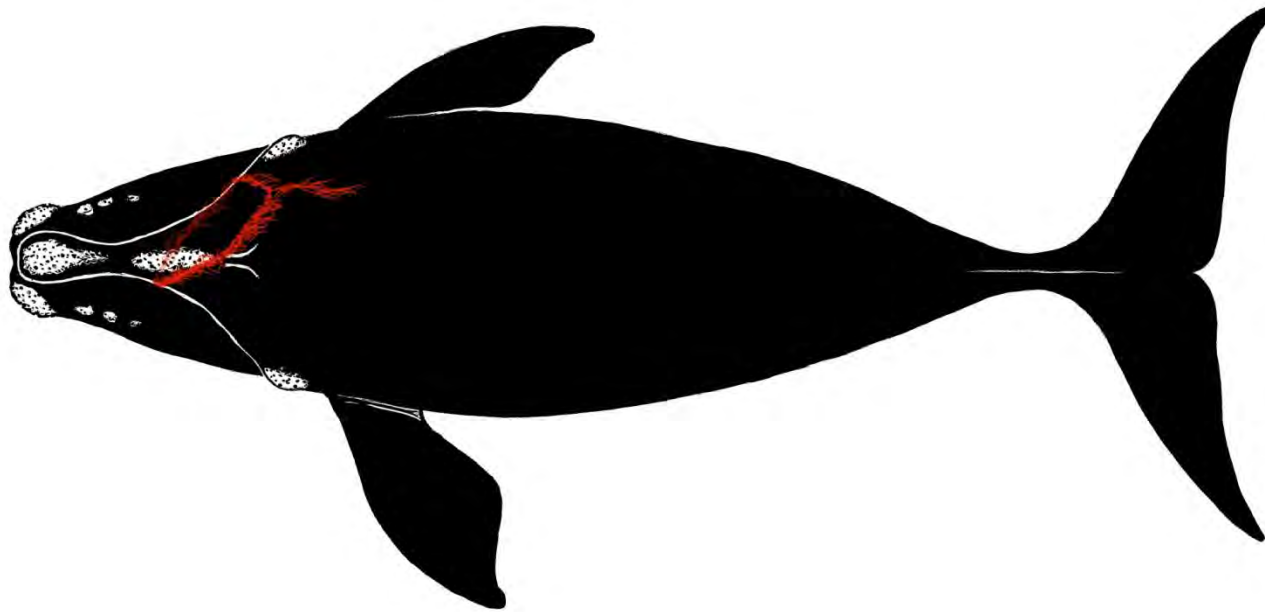
13 Aug 2011, New England Aquarium



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3760</b>
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Date first observed entangled (date seen prior without gear)		13 Feb 2011 (1 May 2010)			
Sex	Female	Birth year	2007	Age at entanglement	4

Case study ID	CCS	NMFS		GEAR ID
	WR-2011-05	E05-11		
Gear sample collected?	No	Gear type	Gillnet	



Reproductive prior to/after entanglement detection		No/No			
Entanglement injury severity		Moderate			
Entanglement configuration risk		Low			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Low	None	Unk	None	Medium
Duration of time carrying gear		Minimum 1 days, maximum 357 days			
Disentangled?		No			
Status		Alive - last seen in 2021			
Number of prior entanglements		2			

Entanglement configuration	Netting only extending out of left and right sides of mouth and partway down the body
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Gear shed

Polymer type	
Gear component	Monofilament netting
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



13 Feb 2011, GA DNR



13 Feb 2011, GA DNR



13 Feb 2011, GA DNR



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3993</b>
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Date first observed entangled (date seen prior without gear)		13 Feb 2011 (20 Apr 2010)			
Sex	Male	Birth year	2009	Age at entanglement	2

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-06	E06-11	
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	None	None	High	None	Low
Duration of time carrying gear		Minimum 1 day, maximum 298+ days			
Disentangled?		No			
Status		Presumed dead. Last seen in 2011 entangled			
Number of prior entanglements		1			

Entanglement configuration	Rope wrapped around right flipper and trailing 10 ft behind flukes
Anchoring points	Flipper
Gear configuration confidence	Low
Remaining questions	Unknown if mouth involved
Comments	Poor condition

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



13 Feb 2011, Sea 2 Shore Alliance



13 Feb 2011, Sea 2 Shore Alliance



13 Feb 2011, Sea 2 Shore Alliance



Species	Right Whale	Whale ID	Unknown
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Date first observed entangled (date seen prior without gear)	16 Mar 2011 (Unknown)				
Sex	Unknown	Birth year		Age at entanglement	Unknown

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-07	E07-11	J031611 rw
Gear sample collected?	yes	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection						
Entanglement injury severity						Severe
Entanglement configuration risk						High
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes	
	Unk	Unk	High	Unk	Unk	
Duration of time carrying gear		Minimum 1 days, maximum unknown				
Disentangled?		No				
Status		Dead				
Number of prior entanglements						

Entanglement configuration	Two types of rope wrapped 13 times around right flipper
Anchoring points	Flipper
Gear configuration confidence	Low
Remaining questions	Unknown if any other body areas involved
Comments	Very decomposed carcass

Polymer type	Copolymer
Gear component	
Rope diameter (inches)	1/2 (0.50)
Breaking strength (lbs)	Tested
	New



16 Mar 2011, NOAA, right flipper



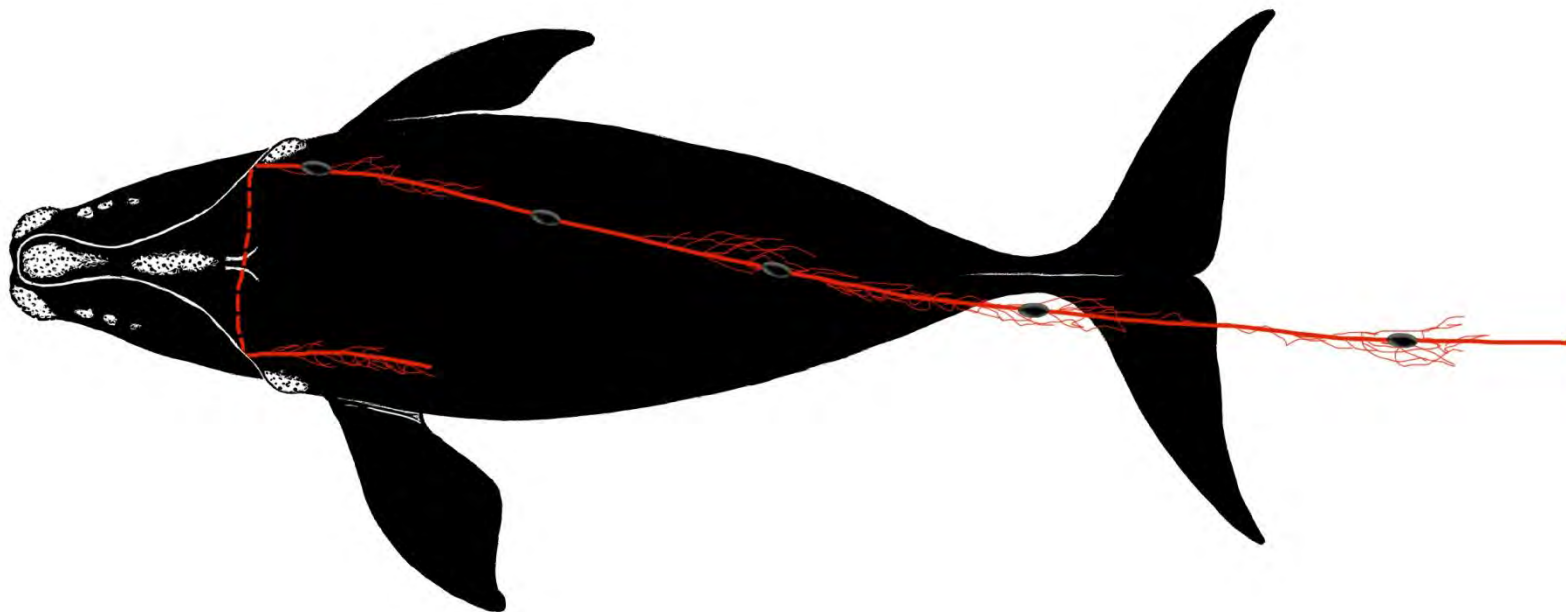
16 Mar 2011, NOAA, right flipper



Species	Right Whale	Whale ID	Eg # 3893
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Date first observed entangled (date seen prior without gear)	17 Mar 2011 (27 Aug 2010)				
Sex	Female	Birth year	2008	Age at entanglement	3

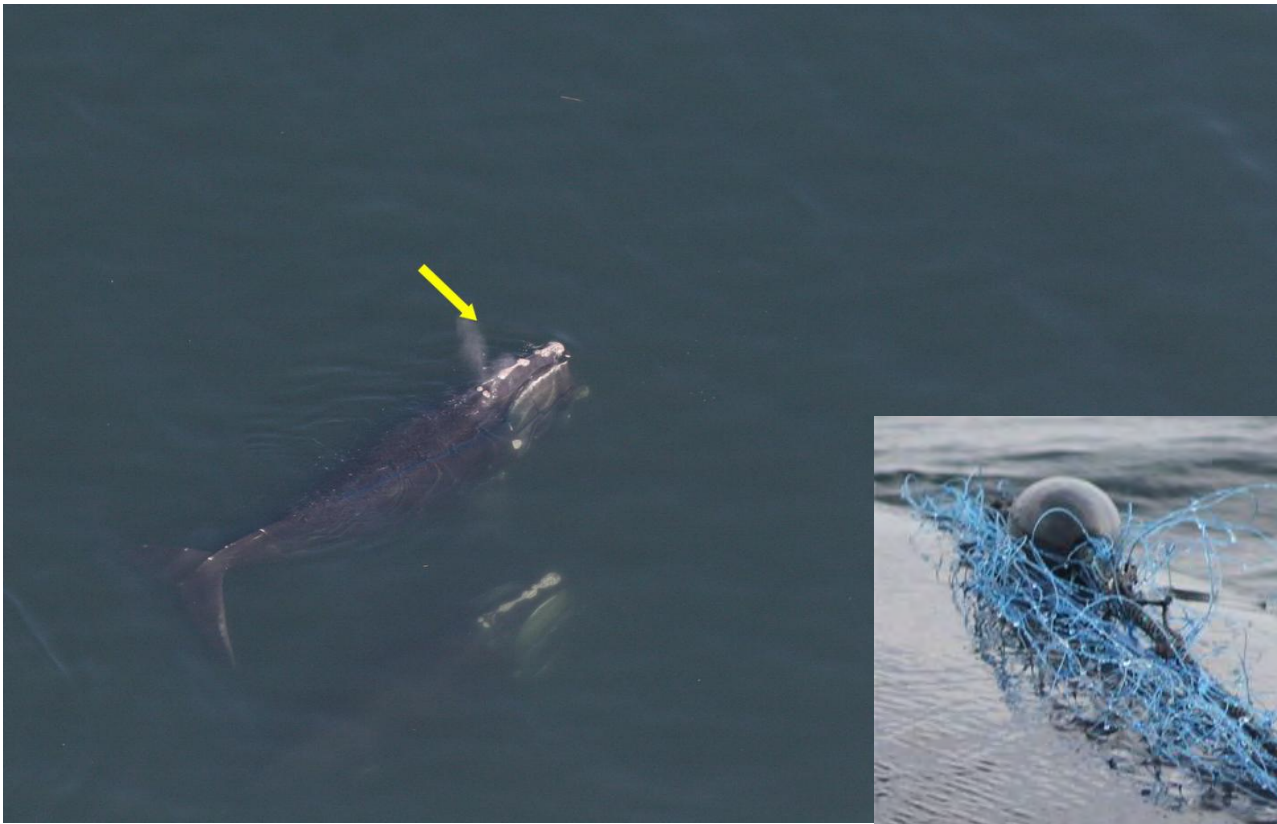
Case study ID	CCS	NMFS		GEAR ID
	WR-2011-10	E08-11		
Gear sample collected?		Gear type	Gillnet	



Reproductive prior to/after entanglement detection						No/No
Entanglement injury severity						Minor
Entanglement configuration risk						Low
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes	
	Unk	Low	Low	None	Low	
Duration of time carrying gear		Minimum 38 days, maximum 243 days				
Disentangled?		Yes, partial				
Status		Dead in 2018 from a new entanglement				
Number of prior entanglements		0				

Entanglement configuration	Rope and netting through both sides of mouth and extending to flukes on right side
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Remaining gear shed

Polymer type	
Gear component	Floatline
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



17 Mar 2011, Center for Coastal Studies



24 Apr 2011, Center for Coastal Studies



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3302</b>
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Date first observed entangled (date seen prior without gear)		22 Apr 2011 (27 Aug 2010)			
Sex	Male	Birth year	2003	Age at entanglement	8

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-33	E12-11	
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection						
Entanglement injury severity						Minor
Entanglement configuration risk						High
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes	
	Unk	Low	Unk	Low	Low	
Duration of time carrying gear		Minimum 201 days, maximum 438 days				
Disentangled?		No				
Status		Presumed dead. Last seen in 2011				
Number of prior entanglements		2				

Entanglement configuration	Single rope across nares and likely leading into mouth. No trailing gear
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Rope is taught across blowholes but not embedded

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



26 Sep 2011, New England Aquarium



26 Sep 2011, New England Aquarium



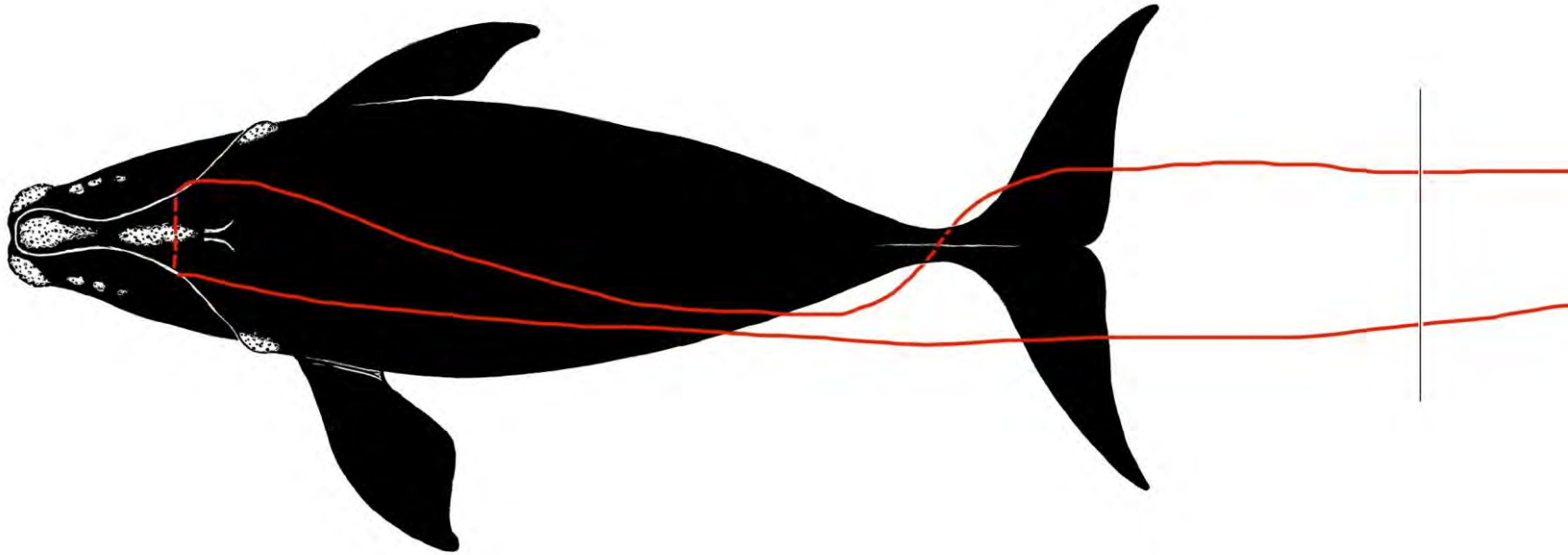
26 Sep 2011, New England Aquarium



Species	Right Whale	Whale ID	Eg # 4040
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Date first observed entangled (date seen prior without gear)		22 Apr 2011 (21 Apr 2010)			
Sex	Female	Birth year		Age at entanglement	2+

Case study ID	CCS	NMFS		GEAR ID
	WR-2011-11	E11-11		J042211 rw-1
Gear sample collected?	yes	Gear type	NE trap/pot, nearshore	



Reproductive prior to/after entanglement detection		No/ Yes			
Entanglement injury severity		Moderate			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	None	Low	Unk	Low	Medium
Duration of time carrying gear		Minimum 1 days, maximum 364 days			
Disentangled?		Yes			
Status		Alive - last seen in 2021			
Number of prior entanglements		0			

Entanglement configuration	Single rope exiting both sides of mouth and extending ~50 feet behind flukes
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



22 Apr 2011, Center for Coastal Studies



22 Apr 2011, Center for Coastal Studies



22 Apr 2011, Center for Coastal Studies



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3123</b>
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Date first observed entangled (date seen prior without gear)		29 Apr 2011 (14 Apr 2011)			
Sex	Female	Birth year	2001	Age at entanglement	10

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-13	E13-11	
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection		Yes/No			
Entanglement injury severity		Minor			
Entanglement configuration risk		Low			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Low	None	None	None	None
Duration of time carrying gear		Minimum 142 days, maximum 339 days			
Disentangled?		No			
Status		Presumed dead -suffered a severe entglmnt in 2013			
Number of prior entanglements		3			

Entanglement configuration	Short length of line exiting right mouth gape and extending 1/2 of body
Anchoring points	Mouthline, flipper?
Gear configuration confidence	Low
Remaining questions	Uncertain if right flipper was involved
Comments	Gear shed

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



29 April 2011, Center for Coastal Studies



18 Sep 2011, New England Aquarium



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 4090</b>
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Date first observed entangled (date seen prior without gear)		18 Sep 2011 (29 Apr 2011)			
Sex	Unknown	Birth year	2010	Age at entanglement	1

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-32	E31-11	J091811 rw
Gear sample collected?	No	Gear type	US NE gillnet

Photographs inadequate to determine complete entanglement configuration - no drawing available

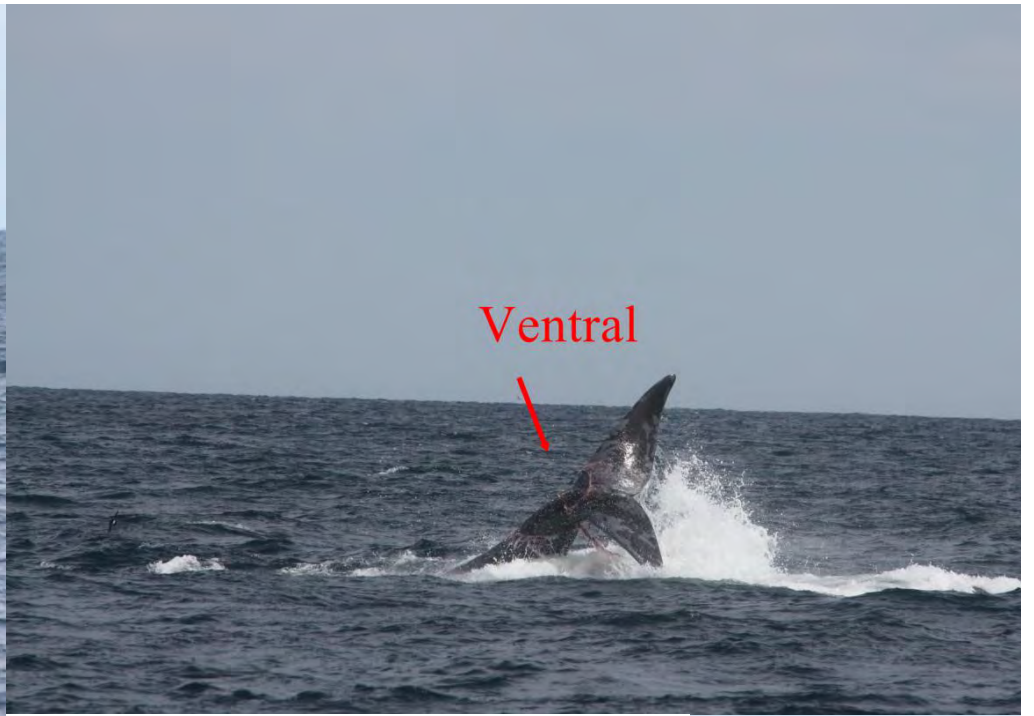
Reproductive prior to/after entanglement detection					
Entanglement injury severity		Low			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	None	Low	Unk	Unk	Low
Duration of time carrying gear		Minimum 1 days, maximum 141 days			
Disentangled?		No			
Status		Presumed dead - last seen in 2011 entangled			
Number of prior entanglements		1			

Entanglement configuration	Gillnet line and netting through mouth and around tail
Anchoring points	Mouthline, tail
Gear configuration confidence	Low
Remaining questions	Unknown if flippers involved
Comments	Whale thrashing, gear shifting

Polymer type		
Gear component		Floatline
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



18 Sep 2011, Blue Ocean Society



18 Sep 2011, Blue Ocean Society



18 Sep 2011, Blue Ocean Society



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3111</b>
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Date first observed entangled (date seen prior without gear)		26 Sep 2011 (31 May 2011)			
Sex	Male	Birth year	2001	Age at entanglement	10

Case study ID	CCS	NMFS	GEAR ID
	WR-2011-34	E32-11	
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection						
Entanglement injury severity						Severe
Entanglement configuration risk						High
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes	
	Unk	Low	High	Medium	High	
Duration of time carrying gear		Minimum 1 days, maximum 276 days				
Disentangled?		Yes, partial				
Status		Presumed dead - last seen in 2012				
Number of prior entanglements		4				

Entanglement configuration	Multiple ropes wrapped around left flipper and trailing around 20 ft behind flukes
Anchoring points	Flipper, mouthline?
Gear configuration confidence	High
Remaining questions	Uncertain if line went into left mouth
Comments	Peduncle injuries are not fully healed

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



27 Sep 2011, Campobello Whale Rescue



27 Sep 2011, New England Aquarium



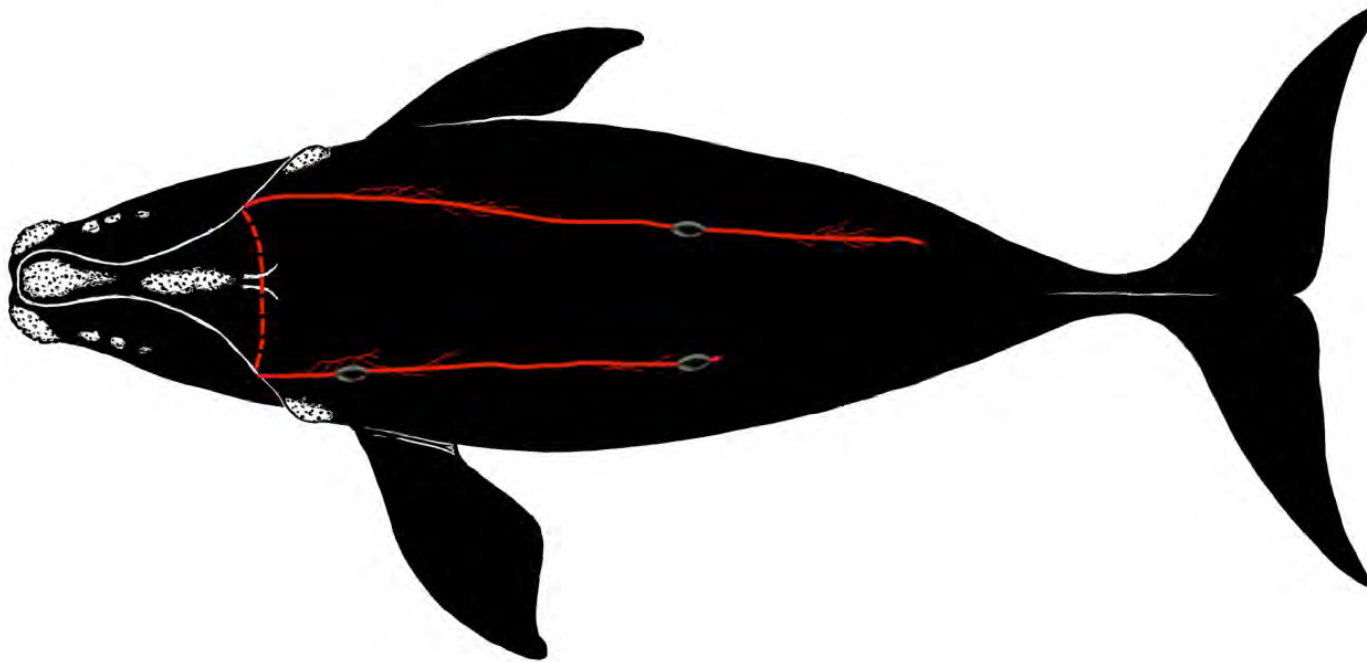
27 Sep 2011, Campobello Whale Rescue



«Comments»«Comments»Species	Right Whale	Whale ID	Eg # 3821
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Date first observed entangled (date seen prior without gear)	7 Jan 2012 (2 Sep 2011)				
Sex	Unk	Birth year	2008	Age at entanglement	4

Case study ID	CCS	NMFS		GEAR ID
	WR-2012-01	E01-12		
Gear sample collected?	No	Gear type	Gillnet	



Reproductive prior to/after entanglement detection						
Entanglement injury severity						Minor
Entanglement configuration risk						Low
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes	
	Unk	None	Unk	None	Low	
Duration of time carrying gear		Minimum 823 days, maximum 949 days				
Disentangled?		Yes - partial disentanglement Feb 15, 2012				
Status		Alive – last seen in 2021				
Number of prior entanglements		2				

Entanglement configuration	Rope and netting through mouth
Anchoring points	Mouth
Gear configuration confidence	High
Remaining questions	
Comments	Remaining gear shed

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	



7 Jan 2012, CCS

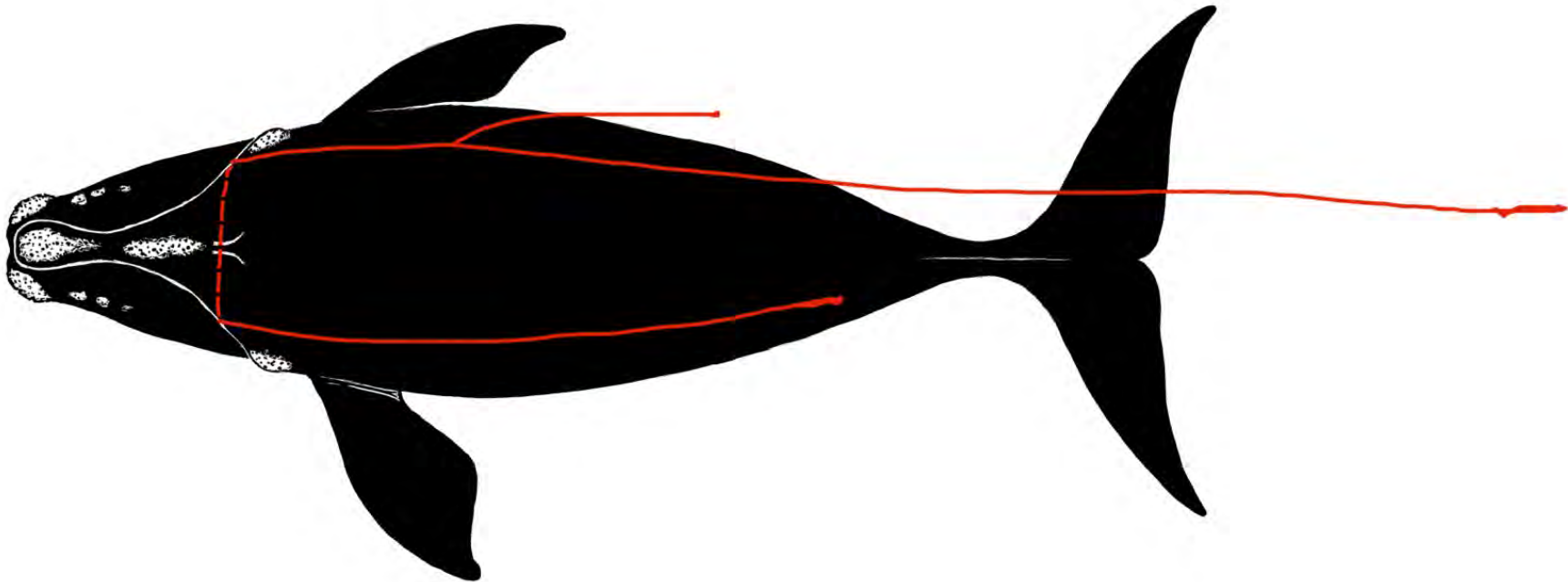


5 Feb 2012, CCS

Species	Right Whale	Whale ID	Eg # 1719
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Date first observed entangled (date seen prior without gear)		19 Jan 2012 (22 Apr 2011)			
Sex	Female	Birth year		Age at entanglement	26+

Case study ID	PCCS	NMFS	GEAR ID
	WR-2012-02	E02-12	
Gear sample collected?	No	Gear type	



Reproductive prior to/after entanglement detection		No/ No			
Entanglement injury severity		Moderate			
Entanglement configuration risk		Low			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Low	No	Unk	None	Medium
Duration of time carrying gear		Minimum 2 days, maximum 694 days			
Disentangled?		No			
Status		Alive – last seen in 2021			
Number of prior entanglements		2			

Entanglement configuration	Rope through mouth and short amount trailing behind body
Anchoring points	Mouth
Gear configuration confidence	High
Remaining questions	
Comments	Gear shed

Polymer type		
Gear component		
Rope diameter (inches)		
Breaking strength (lbs)	Tested	
	New	





19 Jan 2012, Sea to Shore Alliance



19 Jan 2012, Georgia DNR

<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3996</b>
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Date first observed entangled (date seen prior without gear)		15 Feb 2012 (6 Oct 2011)			
Sex	Male	Birth year	2009	Age at entanglement	3

Case study ID	CCS	NMFS		GEAR ID
	WR-2012-05	E05-12		
Gear sample collected?	No	Gear type	Gillnet	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity		Moderate			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unk	Medium	Unk	Low	Low
Duration of time carrying gear		Minimum 207 days, maximum 338+ days			
Disentangled?		No			
Status		Presumed dead - last seen in 2012			
Number of prior entanglements		1			

Entanglement configuration	Rope goes through mouth on left side and across rostrum to unk anchoring point on right side, shifted forward and tightened over time
Anchoring points	Mouth
Gear configuration confidence	High
Remaining questions	Uncertain if right flipper involved
Comments	Rope embedded forward of blowholes. Config changed between Feb and Apr

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



13 Apr 2012, CCS



9 Sep 2012, BOS





<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # Unid</b>
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Date first observed entangled (date seen prior without gear)		23 Jul 2012 (Unknown)			
Sex	Female	Birth year		Age at entanglement	Unknown

Case study ID	CCS	DFO	GEAR ID
		86957	X-Canada 4
Gear sample collected?	Yes	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection		Unknown			
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unk	Unk	Unk	Unk	High
Duration of time carrying gear		Minimum 1 day, maximum unknown			
Disentangled?		No			
Status		Dead			
Number of prior entanglements		Unknown			

Entanglement configuration	30 wraps of rope around tail; likely drowned in gear
Anchoring points	Tail
Gear configuration confidence	High
Remaining questions	
Comments	Carcass very decomposed; gear collected by DFO

Polymer type	Co-polymer	
Gear component		
Rope diameter (inches)	7/8 (0.843)	
Breaking strength (lbs)	Tested	2,600 (left in sun for 4 weeks after removal)
	New	12,800



23 July 2012, WWC Canada

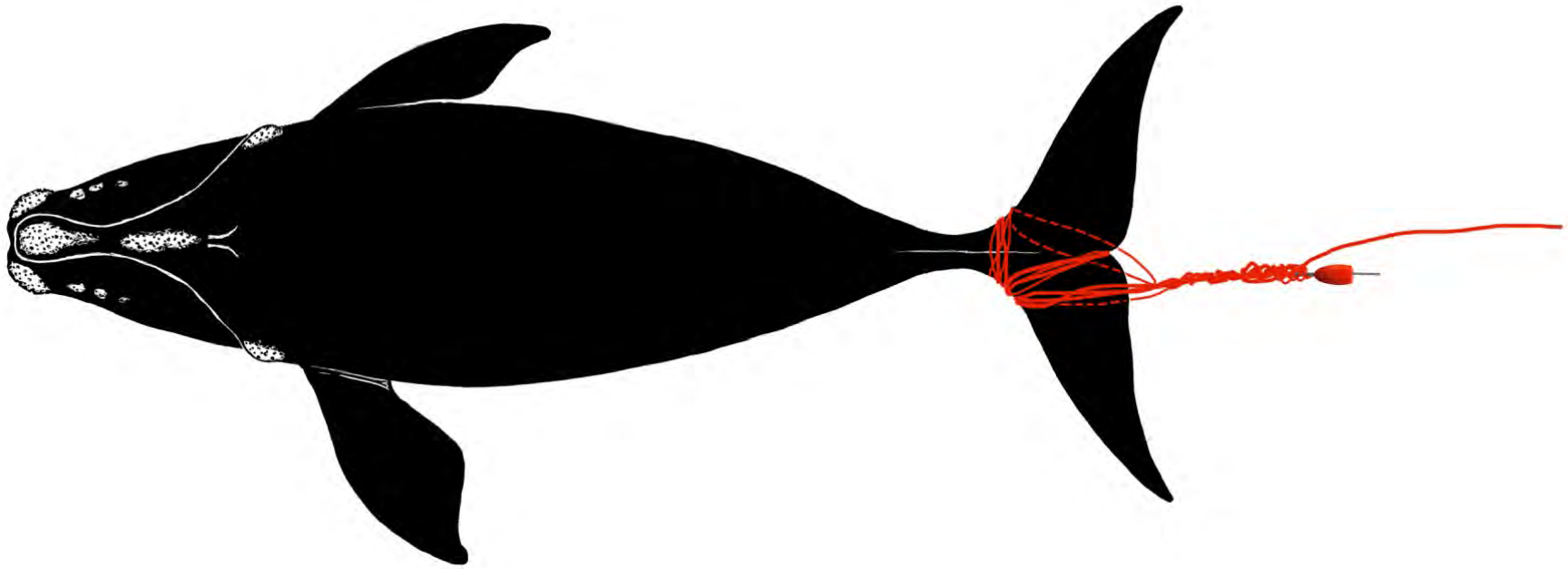


25 July 2012, UPEI

Species	Right Whale	Whale ID	Eg # 4193
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Date first observed entangled (date seen prior without gear)		18 Dec 2012 (28 Jan 2012)			
Sex	Male	Birth year	2011	Age at entanglement	2

Case study ID	PCCS	NMFS	GEAR ID
	WR-2012-42	E43-12	J121812 rw
Gear sample collected?	Yes	Gear type	US NE trap/pot, nearshore



Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Medium	Medium	Medium	Medium	High
Duration of time carrying gear		Minimum 1 days, maximum 324 days			
Disentangled?		No			
Status		Dead			
Number of prior entanglements		0			

Entanglement configuration	Three endlines wrapped multiple times around tail
Anchoring points	Tail
Gear configuration confidence	High
Remaining questions	
Comments	Entanglement injuries evident at mouth and flippers

Polymer type	PET; PET/Copolymer; PP
Gear component	End lines with spindle buoys
Rope diameter (inches)	3/8 for all
Breaking strength (lbs)	Tested
	New





19 Dec 2012 UNCW/Florida FWC



19 Dec 2012 UNCW/Florida FWC

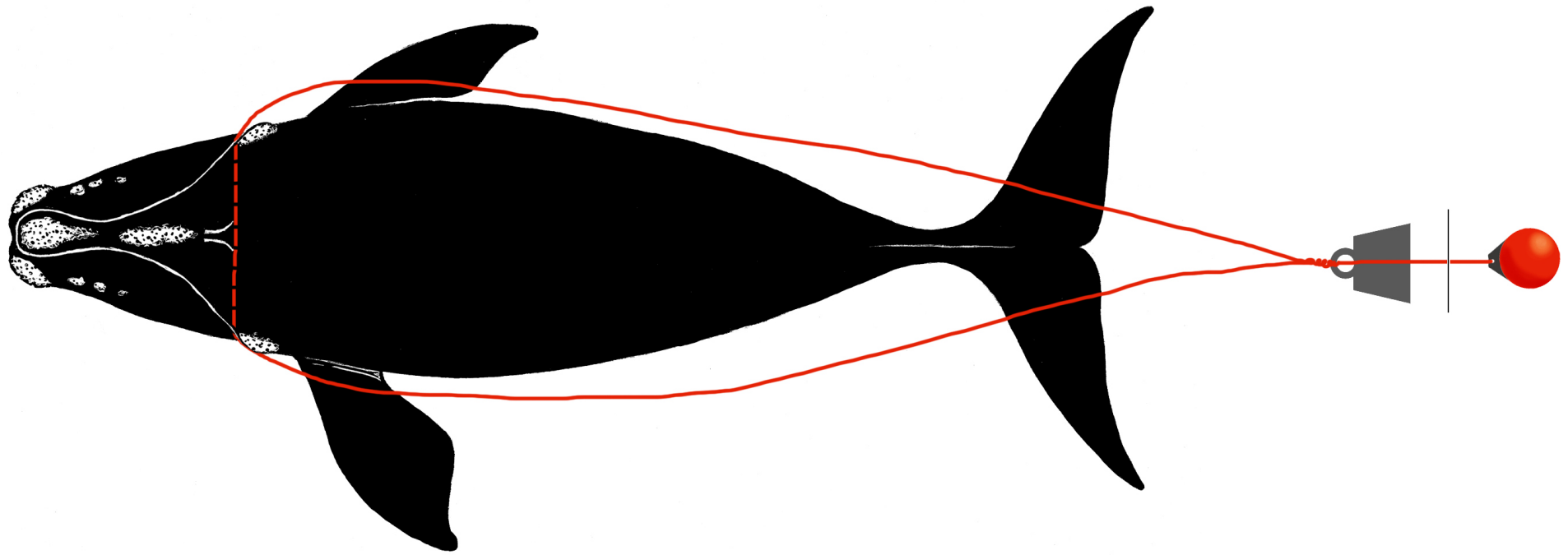


19 Dec 2012 UNCW/Florida FWC

<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3123</b>
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Date first observed entangled (date seen prior without gear)		12 Jul 2013 (20 Mar 2012)			
Sex	Female	Birth year	2001	Age at entanglement	12

Case study ID	CCS	NMFS	GEAR ID
	WR-2013-04	E05-13	
Gear sample collected?	No	Gear type	



Reproductive prior to/after entanglement detection		Yes/No			
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Medium	Medium	Medium	None	High
Duration of time carrying gear		Minimum 1 day, maximum 478 days			
Disentangled?		Yes, ad hoc disentanglement			
Status		Presumed dead - Not seen since 2013			
Number of prior entanglements		4			

Entanglement configuration	Single line through mouth forming bridle leading to depth with two polyballs several hundred yards behind tail
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Tail injury suggests constant abrasion

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New





12 Jul 2013 Opportunistic sighting



17 Jul 2013 SEFSC/AMPS



17 Jul 2013 SEFSC/AMPS



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 1311</b>
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Date first observed entangled (date seen prior without gear)		11 Aug 2013 (21 Apr 2013)			
Sex	Male	Birth year	1983	Age at entanglement	30

Case study ID	CCS	NMFS	GEAR ID
	WR-2013-06		
Gear sample collected?	No	Gear type	

Photographs inadequate to determine complete entanglement configuration - no drawing available

Reproductive prior to/after entanglement detection		Yes/No			
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Medium	Medium	Unknown	Medium	Unknown
Duration of time carrying gear		Minimum 1 day, maximum 111 days			
Disentangled?		No			
Status		Dead			
Number of prior entanglements		2			

Entanglement configuration	Rope through mouth and baleen
Anchoring points	Mouthline
Gear configuration confidence	Low
Remaining questions	Uncertain if flippers or tail involved
Comments	Scavenged heavily by sharks, relatively fresh

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New

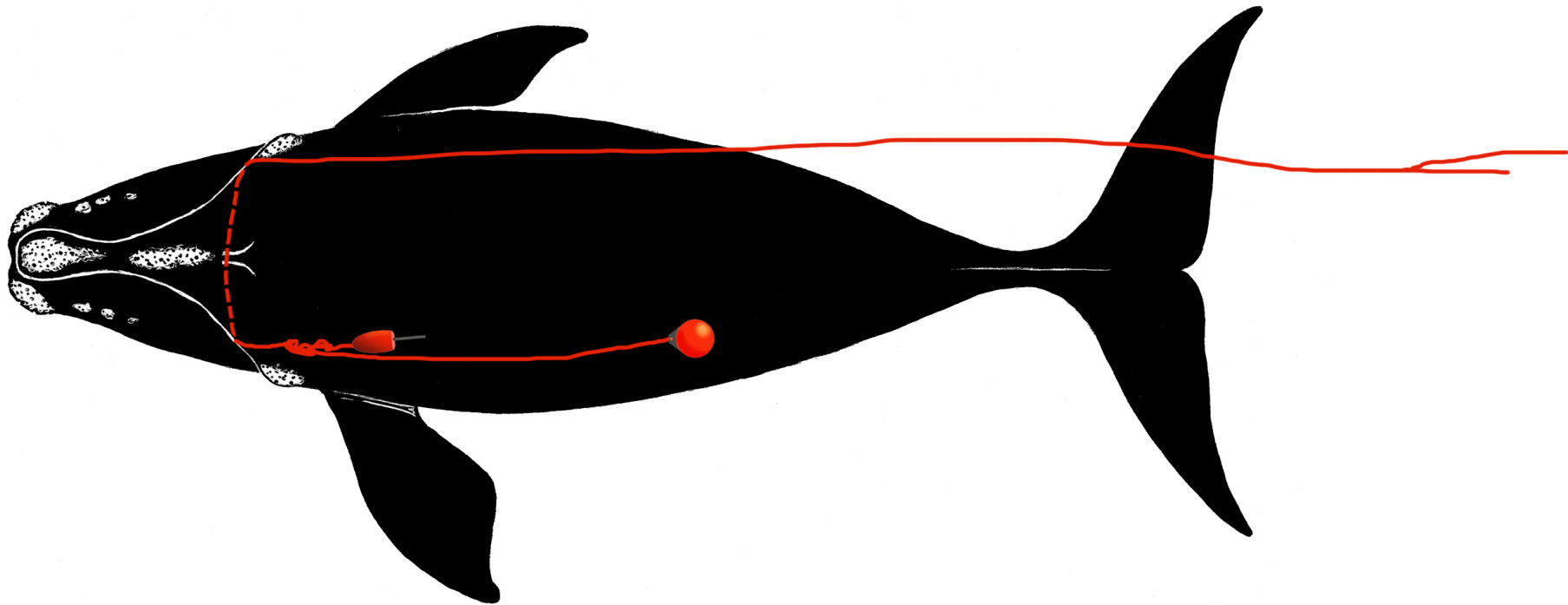


11 Aug 2013 Opportunistic sighting

Species	Right Whale	Whale ID	Eg # 3946
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Date first observed entangled (date seen prior without gear)	20 Sep 2013 (1 May 2013)				
Sex	Female	Birth year	2009	Age at entanglement	4

Case study ID	CCS	NMFS	GEAR ID
	WR-2013-09	E10-13	
Gear sample collected?	No	Gear type	



Reproductive prior to/after entanglement detection		No / No			
Entanglement injury severity		Moderate			
Entanglement configuration risk		Low			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Medium	Medium	Medium	Medium	Medium
Duration of time carrying gear		Minimum 1 day, maximum 326 days			
Disentangled?		No			
Status		Alive, last seen in 2020			
Number of prior entanglements		2			

Entanglement configuration	Line through mouth with polyball and small buoy on left side, no trailing gear
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Unusual lesions on back; gear shed

Polymer type	
Gear component	Endline
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New





20 Sep 2013 CWI/NEAq

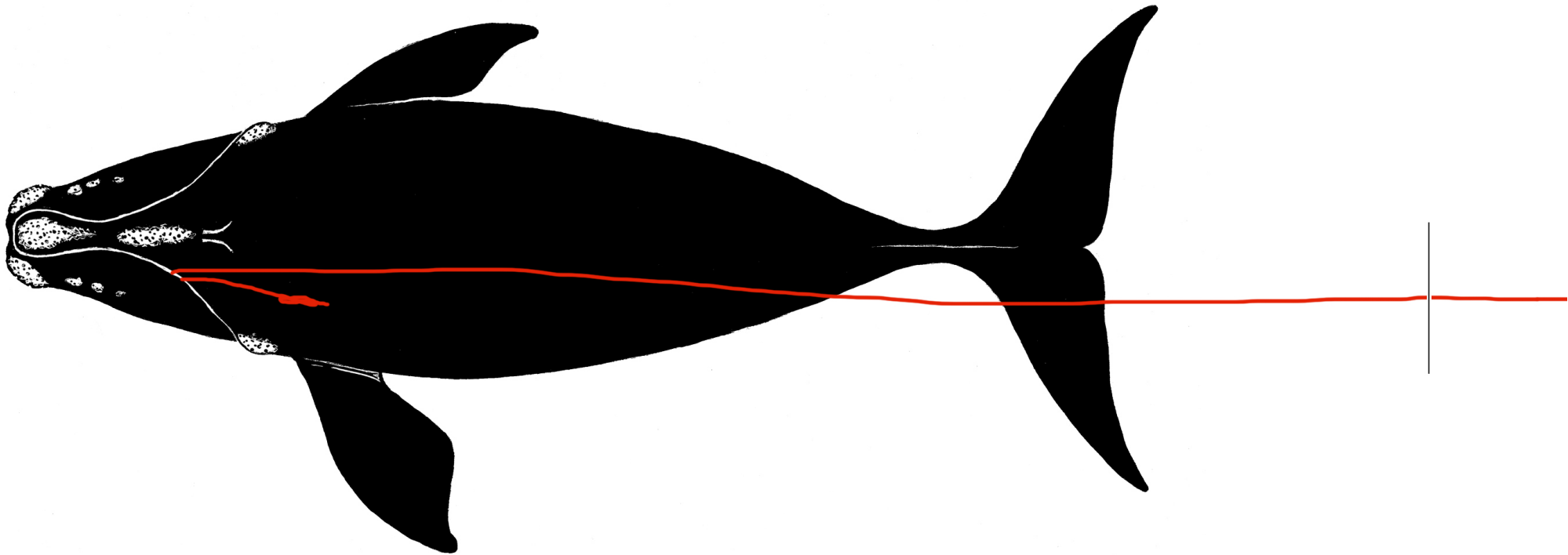


20 Sep 2013 CWI/NEAq

<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 4057</b>
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Date first observed entangled (date seen prior without gear)		16 Feb 2014 (18 Mar 2013)			
Sex	Male	Birth year	2010	Age at entanglement	4

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-01	E01-14	J021614 rw
Gear sample collected?	Yes	Gear type	Unknown Canadian trap



Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Low	High	High	Low	Medium
Duration of time carrying gear		Minimum 55 days, maximum 389 days			
Disentangled?		Yes, partial			
Status		Presumed dead (in a diff severe entanglement in 2016)			
Number of prior entanglements		3			

Entanglement configuration	Line entering/exiting left side of mouth with one end trailing 100 ft before sinking to depth
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Deep injury across rostrum, blowholes. Remaining gear shed

Polymer type	Copolymer
Gear component	490' of end line with 180' of it leaded line spliced in
Rope diameter (inches)	5/8
Breaking strength (lbs)	Tested
	New



16 Feb 2014 Florida FWC



30 Apr 2015 CCS



<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 1142</b>
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Date first observed entangled (date seen prior without gear)		1 Apr 2014 (8 Apr 2011)			
Sex	Female	Birth year	Unk	Age at entanglement	37+

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-02	E02-14	
Gear sample collected?	No	Gear type	

No drawing available

Reproductive prior to/after entanglement detection		Yes/No			
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unknown	High	Unknown	None	Unknown
Duration of time carrying gear		Minimum 1,571 days, maximum 2,659 days			
Disentangled?		No - attempt in 2018 unsuccessful			
Status		Likely dead - resighted in 2018 still entangled			
Number of prior entanglements		3			

Entanglement configuration	Single tight wrap on rostrum
Anchoring points	Mouthline
Gear configuration confidence	Low
Remaining questions	Not known if flippers involved
Comments	Condition declined by 2018 sightings

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



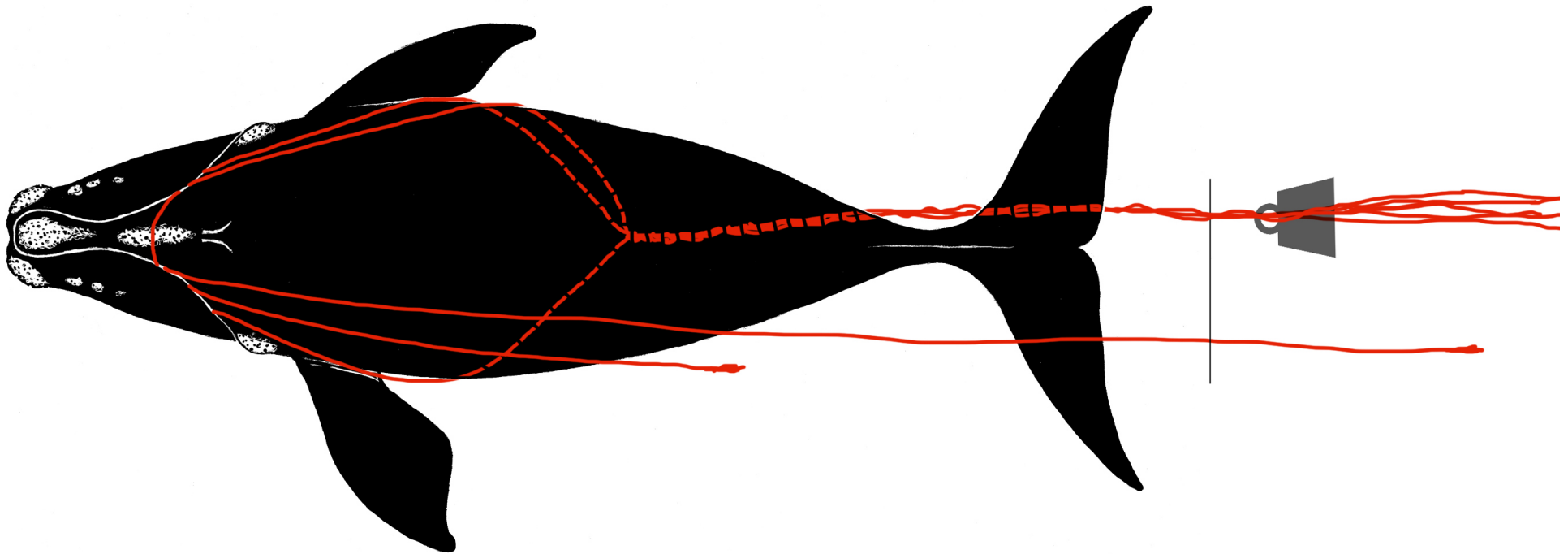
1 Apr 2014, SEFSC/AMAPPS

This case study was developed at the New England Aquarium with financial support from NOAA Fisheries. Whale data were provided by the North Atlantic Right Whale Consortium ([www.narwc.org](http://www.narwc.org)). All images are listed with appropriate credit information and taken under permit. Retrieved gear is assessed and archived by NOAA Fisheries. Entanglement diagrams courtesy of S. Landry, Center for Coastal Studies. Please contact Amy Knowlton ([aknowlton@neaq.org](mailto:aknowlton@neaq.org)) for potential use.

Species	Right Whale	Whale ID	Eg # 1131
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Date first observed entangled (date seen prior without gear)	29 Jun 2014 (22 May 2010)				
Sex	Male	Birth year	Unk	Age at entanglement	35+

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-08	E09-14	
Gear sample collected?	No	Gear type	



Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unknown	High	High	Unknown	Unknown
Duration of time carrying gear		Minimum 1 day, maximum 1,498 days			
Disentangled?		No			
Status		Likely dead, no subsequent sightings			
Number of prior entanglements		3			

Entanglement configuration	Wrap of rostrum, presumably trailing heavy gear
Anchoring points	Mouthline
Gear configuration confidence	High
Remaining questions	
Comments	Very poor condition

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New





29 Jun 2014, NEFSC

<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 4001</b>
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Date first observed entangled (date seen prior without gear)		20 Aug 2014 (12 Apr 2014)			
Sex	Male	Birth year	2010	Age at entanglement	4

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-15		
Gear sample collected?	No	Gear type	

No drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unknown	High	Unknown	None	None
Duration of time carrying gear		Minimum 38 days, maximum 182+ days			
Disentangled?		No			
Status		Presumed dead - Last seen in 2014 still entangled			
Number of prior entanglements		2			

Entanglement configuration	Single line across blowholes which has become embedded over time
Anchoring points	Head
Gear configuration confidence	Low
Remaining questions	Flipper involvement, trailing gear unknown
Comments	

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New





4 Sep 2014, Coastwise Consulting



4 Sep 2014, NEAq



12 Oct 2014, Opportunistic sighting

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<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Unid carcass</b>
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Date first observed entangled (date seen prior without gear)		4 Sep 2014 (unknown)			
Sex	Unk	Birth year	Unk	Age at entanglement	Unk

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-17	E18-14	
Gear sample collected?	No	Gear type	

No drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity					
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
Duration of time carrying gear		Minimum 1 day, maximum unknown			
Disentangled?		No			
Status		Dead			
Number of prior entanglements					

Entanglement configuration	Line wrapped around body and right flipper and crossing head.
Anchoring points	Flipper, mouth?
Gear configuration confidence	Low
Remaining questions	Unsure if left flipper and mouth involved
Comments	Documented during an aerial DFO flight in GoSL

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



VC

4 Sep 2014 DFO/MART

<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Eg # 3279</b>
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Date first observed entangled (date seen prior without gear)		17 Sep 2014 (21 Apr 2014)			
Sex	Male	Birth year	2002	Age at entanglement	12

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-18	E20-14	
Gear sample collected?	No	Gear type	

No drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity		Severe			
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
	Unknown	High	Unknown	None	High
Duration of time carrying gear		Minimum 1 day, maximum 148+ days			
Disentangled?		No			
Status		Presumed dead - no subsequent sightings			
Number of prior entanglements		1			

Entanglement configuration	Line embedded in blowholes and also through right mouth
Anchoring points	Mouthline, head
Gear configuration confidence	Low
Remaining questions	Unknown if flippers involved
Comments	Entanglement injuries also at tail

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New





17 Sep 2014 CWI/NEAq



17 Sep 2014 CWI/NEAq



17 Sep 2014 CWI/NEAq

<b>Species</b>	<b>Right Whale</b>	<b>Whale ID</b>	<b>Unid carcass</b>
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Date first observed entangled (date seen prior without gear)		27 Sep 2014 (unknown)			
Sex	Unk	Birth year	Unk	Age at entanglement	Unk

Case study ID	CCS	NMFS	GEAR ID
	WR-2014-20	E22-14	J092714 rw
Gear sample collected?	No	Gear type	

No drawing available

Reproductive prior to/after entanglement detection					
Entanglement injury severity					
Entanglement configuration risk		High			
Wound severity	Mouth	Head/ rostrum	Flippers	Body	Flukes
Duration of time carrying gear		Minimum 1 day, maximum unknown			
Disentangled?		No			
Status		Dead			
Number of prior entanglements					

Entanglement configuration	Line around right flipper, across rostrum and around body
Anchoring points	Flipper, body
Gear configuration confidence	Low
Remaining questions	Unsure if mouth, left flipper, tail involved
Comments	Orange polyball next to body; observed in southern New England

Polymer type	
Gear component	
Rope diameter (inches)	
Breaking strength (lbs)	Tested
	New



UNCLASSIFIED

SP UNFOV Auto

Day

PCOR-

Rate Aid

R



AGL 1489 FT MSL 1492 FT

Lat: N 40° 44.753 Lon: W 70° 20.788'

Az: -99.3° El: 5.1° 27-Sep-2014 15:05:55Z

27 Sep 2014, US Coast Guard