

## North Atlantic Right Whale Consortium 2009 Annual Report Card Addendum

In May 2009, The North Atlantic Right Whale Consortium submitted a report card on the status of North Atlantic right whales to the International Whaling Commission (IWC). This report card served to update the scientific committee on population status as well as research and management activities and included information available from 01 November 2007 – 30 April 2009. This addendum provides updated data and information from 01 May - 31 October 2009.

### Estimate of Catalogued North Atlantic Right Whales: 2008

The ability to monitor North Atlantic right whale vital rates is entirely dependent on the right whale identification database. Curated by the New England Aquarium, the database consists of over 500,000 slides, prints, and digital images collected during the ~46,000 sightings of over 500 individual right whales photographed since 1935. Each year, nearly 3,000 sightings consisting of 20-30,000 images are added to the identification database. Due to the lag time in processing data, the most recent estimate of the cataloged population available is for 2008.

In 2008, the best estimate of catalogued North Atlantic right whale population was 438 individuals. Low and high estimates were also calculated (Figure 1 below). The best estimate assesses the number of photographed whales; it does not assess how many unphotographed whales may be in the population and therefore is not a population estimate. This total includes 392 catalogued whales that were presumed to be alive in 2008 because they were seen in that year, or any time in the prior six years (Knowlton et al. 1994). The total also includes 31 calves from 2007 or 2008 that were considered suitable for inclusion in the catalog. Calves are added only if enough photographic information is ultimately available to reliably match them to future sightings. Finally, the estimate included 15 other whales that did not match the catalog, but were re-identified in at least one subsequent year (excluding sightings in field seasons that spanned the calendar year).

Figure 1. Estimates of the number of catalogued whales in the North Atlantic Right Whale Identification Catalogue. A detailed explanation of calculations can be found at the end of this report.

<b>Low: 175 individuals</b> 175 Cataloged whales seen in 2008
<b>Middle: 438 individuals</b> 392 Cataloged whales presumed alive in 2008 15 Intermatch whales likely to be added to Catalog 31 Calves from 2007 and 2008 likely to be added to Catalog
<b>High: 629 individuals</b> 525 All Cataloged whale minus those known dead 63 All active intermatch codes without 2007-2008 calves 41 All 2007 and 2008 calves minus dead

Analysis 10/26/09

### Mortalities:

Between 01 May 2009 and 31 October 2009, one right whale mortality was documented (Table 1).

Table 1. Documented right whale mortalities 01 May 2009- 31 October 2009

Whale#	Date	Sex	Age	Necropsy (Field #)	Cause of Death	Comments
--	18-Aug-09	Unknown	Unk		Unknown	Found by NOAA ship, no access to carcass possible

Since the 2005 Report Card, the Consortium Board recognizes necropsies as significant data collection events that provide valuable information on which management and conservation measures can be (and have been) made. The Board views consistent necropsy response and support (both financial and personnel) as integral to right whale recovery.

#### Non-Fatal Entanglements and Vessel Strikes

These cases are classified as non-fatal only in so far as the animals were alive when last seen.

#### Entanglements:

There were three new entanglement cases (whales carrying gear) reported between 01 May 2009 and 31 October 2009 (Table 2). Table 2 includes all entanglements previously reported in the IWC report card as many have status updates. Additionally, the following are right whale entanglement cases that were considered plausibly open as of 31 October 2009 by the Provincetown Center for Coastal Studies (PCCS): Whale Nos. 1019, 1140, 1430, 1815, 1980, 2029, 3210, 3311 (intervention, may still be entangled), 3346, 3420 (intervention, may still be entangled), 3714 (intervention, may still be entangled), and PCCS case number Wr-2006-14.

**Table 2.** New right whale entanglements (whales seen carrying gear) 01 November 2007 – 31 October 2009.

Whale#	Date	First location	Sex	Age	Comments
3333	01 January 2008	Florida	Male	6	Minor entanglement, subsequent sightings shows gear-free
2645	12 January 2008	Cape Cod Bay	Female	Adult, Unknown	Minor entanglement, subsequent sightings shows gear-free
1980	03 February 2008	Cape Hatteras	Male	Adult, unknown	Severe entanglement, last sighted 17 April 2008
1140	06 March 2008	Cape Cod Bay	Female	Adult, unknown	Minor entanglement, last sighted 25 February 2009
1249	07 May 2008	Great South Channel	Male	27	Verified gear free 01 June 2009
3294	08 December 2008	Florida	Unknown	Adult, unknown	Likely gear-free
2007 Calf of 1701	26 December 2008	Florida	Unknown	2	Disentangled, gear free
3311	14 January 2009	Georgia	Unknown	6	Severe entanglement, partially disentangled
3420	31 January 2009	Florida	Female	5	Telemetry buoy attached, shed. Some entangling gear retrieved with buoy Sighted 31 August 2009 – no gear visible but not all body parts seen
2007 Calf of 2614	07 February 2009	Georgia	Unknown	2	Partially disentangled
1019	18 July 2009	south of	Male	Adult,	

		Nantucket		unknown	
1151	04 September 2009	Jeffreys Ledge	Female	Adult, unknown	w/calf, disentangled
2008 calf of 1321	26 September 2009	Cape Cod Bay	Unknown	1	disentangled

*Vessel Strikes:*

There were no new vessel strikes reported between 01 May – 31 October 2009.

**Aerial and Vessel-based Survey Efforts 2008 and 2009**

(Catalogued sighting information through 31 October 2009. Not all data has been received and/or entered. Survey platforms and sighting totals may change.)

*Survey Organizations:*

BOS: Blue Ocean Society  
 FWRI: Fish and Wildlife Research Institute  
 GDNR: Georgia Department of Natural Resources  
 NEAq: New England Aquarium  
 NEFSC: Northeast Fisheries Science Center  
 PCCS: Provincetown Center for Coastal Studies  
 UNCW: University of North Carolina Wilmington  
 WCNE: Whale Center of New England  
 WT: Wildlife Trust

Southeast United States (sightings: 2008=1604, 2009=1664; NEAq, FWRI, WT, GDNR, NEFSC)

- Aerial surveys December through March 2007-2008, 2008-2009
- Biopsy darting and vessel photo-ID

New England (sightings: 2008=696, 2009=622; PCCS, NEFSC)

- Aerial surveys and habitat sampling January – May 08, 09

Jeffreys Ledge (sightings: 2008=93, 2009=21; NEFSC, WCNE, BOS, PCCS)

- Aerial and vessel surveys November 07 – March 08, September 08 – December 08;  
January – February, September 09

Great South Channel (sightings: 2008=292, 2009=39; NEFSC, PCCS)

- Aerial surveys February 08 – August 08, February – April 09

Gulf of Maine (sightings: 2008=189, 2009=14; NEFSC)

- Aerial surveys November 07 – December 08, February-April 09

Bay of Fundy (sightings: 2008=710, 2009=783; NEAq)

- Vessel surveys August-October 08, 09

Mid-Atlantic (sightings: 2008=81, 2009=64; NEFSC, WT, PCCS)

- Aerial and vessel surveys February – June, November - December 08, January – March 09

Roseway Basin (sightings: 2008=8, 2009=73, NEFSC, NEAq)

- Aerial surveys July 08, vessel surveys late August -early September 2009

**Additional Management and Mitigation Activities**

- FINAL North Atlantic Right Whale Recovery Strategy posted on the SARA Public Registry June 2009. The final version of the recovery strategy can be downloaded from the SARA Registry at:  
[http://www.sararegistry.gc.ca/document/default\\_e.cfm?documentID=1750](http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1750)

## **Population Estimate Calculation**

We have developed standardized criteria that can be applied each year to get a low, middle (best estimate) and upper number of whales in the population as determined from Catalog data. One term needs to be explained to understand these numbers. Whales are given temporary intermatch codes if 1) two or more sightings match each other, and 2) neither have been matched to a catalog whale. Some of these whales will eventually be matched to existing cataloged whales and others will be determined to be “new” to the Catalog and assigned a number. Once an intermatch whale is given a Catalog number, or matched to another intermatch code whale, the intermatch code is made inactive.

### **LOWER**

To determine the lower bound, we simply count the number of unique cataloged whales identified the year before. Because of delays in processing data, this number is lower than the eventual total number of whales seen alive in that year.

### **MIDDLE**

The middle bound is determined by summing three categories:

- 1) All whales presumed to be alive in that year (i.e. seen in the last six years),
- 2) Intermatch whales that are likely to be added to the Catalog. This is calculated by first finding all intermatch codes that span two or more years (both those that are active and those that were matched and made inactive), removing all calves and any SEUS whales whose sightings span two years only because they are seen in December and January of the same field season. Then, we determine which of those intermatch whales have Catalog numbers and what percent of those were new to the catalog (i.e. had not been matched to an existing cataloged whale). The remaining, unidentified intermatch whales are then multiplied by that fraction to determine how many are likely new to the Catalog (e.g. if only 20% of the matched intermatch whales were new, then 20% of the unmatched intermatched whales are likely new). That number is then added to the count of calves born more than two years earlier that are unmatched with active intermatch codes (indicating there is enough information to potentially match them in the future). Process changed Oct. 2009.
- 3) Calves from the last two years that have not been cataloged. We make an assessment of whether there is enough photographic information to match them to future sightings and thus assign them a Catalog number. We then sum those that will likely be cataloged.

### **UPPER**

The upper bound is also the sum of three categories:

- 1) All Cataloged whales minus those whose carcasses were identified.

*Report to the North Atlantic Right Whale Consortium, November 2009.  
Contact Heather Pettis (hpettis@neaq.org) for further information.*

- 2) All active intermatch whales minus calves from the last two years.
- 3) All calves from the last two years minus those known to be dead.