



Northeast Fisheries Science Center Reference Document 10-07

# North Atlantic Right Whale Sighting Survey (NARWSS) and Right Whale Sighting Advisory System (RWSAS) 2009 Results Summary

by Christin Khan<sup>1</sup>, Tim Cole<sup>2</sup>, Peter Duley<sup>1</sup>, Allison Glass<sup>1</sup>, Jennifer Gatzke<sup>1</sup>

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## 2009 Results Summary

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**Editorial Treatment:** To distribute this report quickly, it has not undergone the normal technical and copy editing by the Northeast Fisheries Science Center's (NEFSC's) Editorial Office as have most other issues in the NOAA Technical Memorandum NMFS-NE series. Other than the four covers and first two preliminary pages, all writing and editing have been performed by the authors listed within. This report was reviewed by the Stock Assessment Review Committee, a panel of assessment experts from the Center for Independent Experts (CIE), University of Miami.

**Information Quality Act Compliance:** In accordance with section 515 of Public Law 106-554, the Northeast Fisheries Science Center completed both technical and policy reviews for this report. These predissemination reviews are on file at the NEFSC Editorial Office.

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## North Atlantic Right Whale Sighting Surveys (NARWSS)

The North Atlantic Right Whale Sighting Survey (NARWSS) is a NOAA Fisheries program which locates and records the seasonal distribution of North Atlantic right whales (*Eubalaena glacialis*) off the northeastern coast of the United States. All NARWSS flights conducted in 2009 followed randomized systematic track lines within nine primary survey blocks: Cashes Ledge, Franklin Basin, Georges Basin, Georges Shoal, Great South Channel, Howell Swell, Jeffreys Ledge, Jordan Basin, and Stellwagen Bank. In addition, two supplemental survey blocks were added this year: Roseway Basin and Stellwagen Sanctuary. There were no broad scale surveys conducted in 2009, as there have been in the past<sup>1</sup>. During 2009, there were 66 surveys totaling 330 flight hours, including the relocation of a right whale carcass during one flight (Table 1). See Table 2 for a comparison of NARWSS flights, flight hours, and right whale sightings across years. There were 584 right whales detected within survey blocks (Table 1), and an additional 38 right whales sighted during transits to or from survey areas. The locations of right whales and survey lines flown are displayed by season in Figures 1a-1d.

## Right Whale Sighting Advisory System (RWSAS)

In 2009, the Right Whale Sighting Advisory System (RWSAS) was re-engineered to support new regulations to reduce the threat of ship collisions with right whales (50 CFR Part 224). The regulations establish speed restrictions of 10 knots for all vessels length 65 ft (19.8 m) or greater within Seasonal Management Areas (SMAs). The SMAs encompass high-risk areas along the U.S. Atlantic seaboard where right whale sightings predictably and consistently occur each year<sup>2</sup>. When three or more right whales are sighted outside of SMAs, Dynamic Management Areas (DMAs) are put in place for two weeks that encompass an area commensurate to the number of whales present. Mariners are notified of DMAs via email, the internet, Broadcast Notice to Mariners (BNM), NOAA Weather Radio, and the Mandatory Ship Reporting system (MSR), and are requested to reduce their speed when transiting through DMAs. Unlike SMAs, compliance is voluntary for DMAs. The DMA program was initiated in December 2008 (concurrent with implementation of SMA regulations), and NARWSS reports generated three DMAs before the end of that year. In 2009, 19 DMAs were triggered by validated reports, of which 13 came from NARWSS. The RWSAS continued collecting sighting reports from sources including aerial surveys, shipboard surveys, whale watch vessels, and opportunistic sources (Coast Guard, commercial ships, fishing vessels, and the general public). The most common source of reports in 2009 was aerial surveys (215 reports - 48%; see Table 3). Most sightings were in the Northeast (New York through Maine), where the number of reports per month ranged from 6 in August and September, to 116 in April (Figures 2a and 3). Most reports in the Mid-Atlantic region (New Jersey through North Carolina) were from opportunistic sources (Figures 2b and 3)). Most reports in Canadian waters were from shipboard surveys (Figures 2a and 3). Due to the frequency of acoustic detections, logging them as part of the RWSAS was discontinued in 2009. Instead, public and shipping interests were provided links to the automated acoustic detection websites maintained by the Bioacoustics Research Program at the Cornell Lab of Ornithology<sup>3</sup>.

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<sup>1</sup> <http://www.nefsc.noaa.gov/publications/crd/crd0718/>

<sup>2</sup> <http://www.nmfs.noaa.gov/pr/shipstrike/>

<sup>3</sup> <http://www.listenforwhales.org/>

**Table 1.** Summary of NARWSS flights conducted in 2009 by both survey block and month, including the number of flights, flight hours, and right whale sightings. All flights followed randomized systematic track lines within survey blocks. Shaded cells indicate month and survey area in which a Dynamic Management Area (DMA) was triggered by a confirmed report of 3 or more right whales outside of a Seasonal Management Area (SMA). DMAs were triggered by reports from the NARWSS as well as other sources.

Month	Total Number of Flights in Each Survey Block by Month											# Flights	Flight Hours <sup>1</sup>	#Egs <sup>2</sup>
	Cashes Ledge	Franklin Basin	Georges Basin	Georges Shoal	Great South Channel	Howell Swell	Jeffreys Ledge	Jordan Basin	Roseway Basin	Stellwagen Bank	Stellwagen Sanctuary			
January	1						1	3				5	26.4	20
February	1				2		1			2		6	31.5	20
March				1		1	1			2		5	25.6	18
April				2	5	1				1		9	40.6	21
May	2			1	4	1		1		1		10	54.9	188
June	1	1		1	3							6	24.8	53
July	2		1		3	1		1			2	10	46.6	94
August						1			1			2	12.7	14
September												0	0.0	0
October	1						1	1			1	4	19.5	32
November	1					1	1	2		1		6	32.0	70
December	1							2				3	15.3	54
<b># Flights</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>17</b>	<b>6</b>	<b>5</b>	<b>10</b>	<b>1</b>	<b>7</b>	<b>3</b>	<b>66</b>	<b>330</b>	<b>584</b>
<b>Flight Hours<sup>1</sup></b>	<b>52.0</b>	<b>5.9</b>	<b>5.1</b>	<b>21.0</b>	<b>77.7</b>	<b>29.9</b>	<b>28.0</b>	<b>53.3</b>	<b>7.7</b>	<b>38.5</b>	<b>10.8</b>	<b>330</b>		
<b># Egs<sup>2</sup></b>	<b>125</b>	<b>21</b>	<b>3</b>	<b>10</b>	<b>209</b>	<b>61</b>	<b>43</b>	<b>81</b>	<b>13</b>	<b>18</b>	<b>0</b>	<b>584</b>		

<sup>1</sup> Flight Hours - number of flight hours (includes time on transit, survey, and circling to photograph whales)  
<sup>2</sup> # Egs - number of right whales sighted (includes duplicate individuals; does not include whales seen on transit)

**Table 2.** Comparison of NARWSS flights conducted from 2002-2009 including the number of flights, flight hours, and the number of right whale sightings.

Year	2002	2003	2004	2005	2006	2007	2008	2009
<b># Flights<sup>1</sup></b>	103	101	82	129	86	62	53	66
<b>Flight Hours<sup>2</sup></b>	527	485	397	617	449	374	295	330
<b># Egs<sup>3</sup></b>	798	453	294	831	411	841	639	584

<sup>1</sup> # Flights – includes various types of flights depending on the year (randomized systematic, directed and exploratory)  
<sup>2</sup> Flight Hours - number of flight hours (includes time on transit, survey, and circling to photograph whales)  
<sup>3</sup> # Egs - number of right whales sighted (includes duplicate individuals; does not include whales seen on transit)

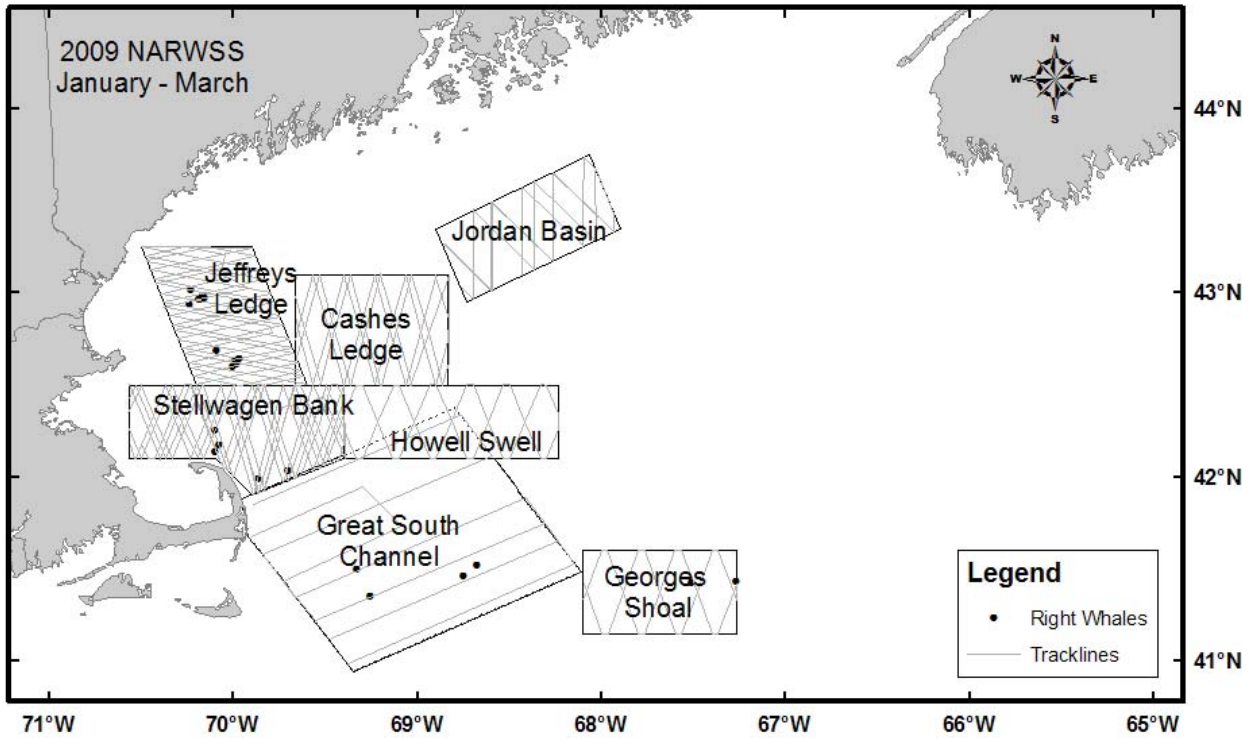


Figure 1a. NARWSS track lines and right whale sightings from January through March, 2009.

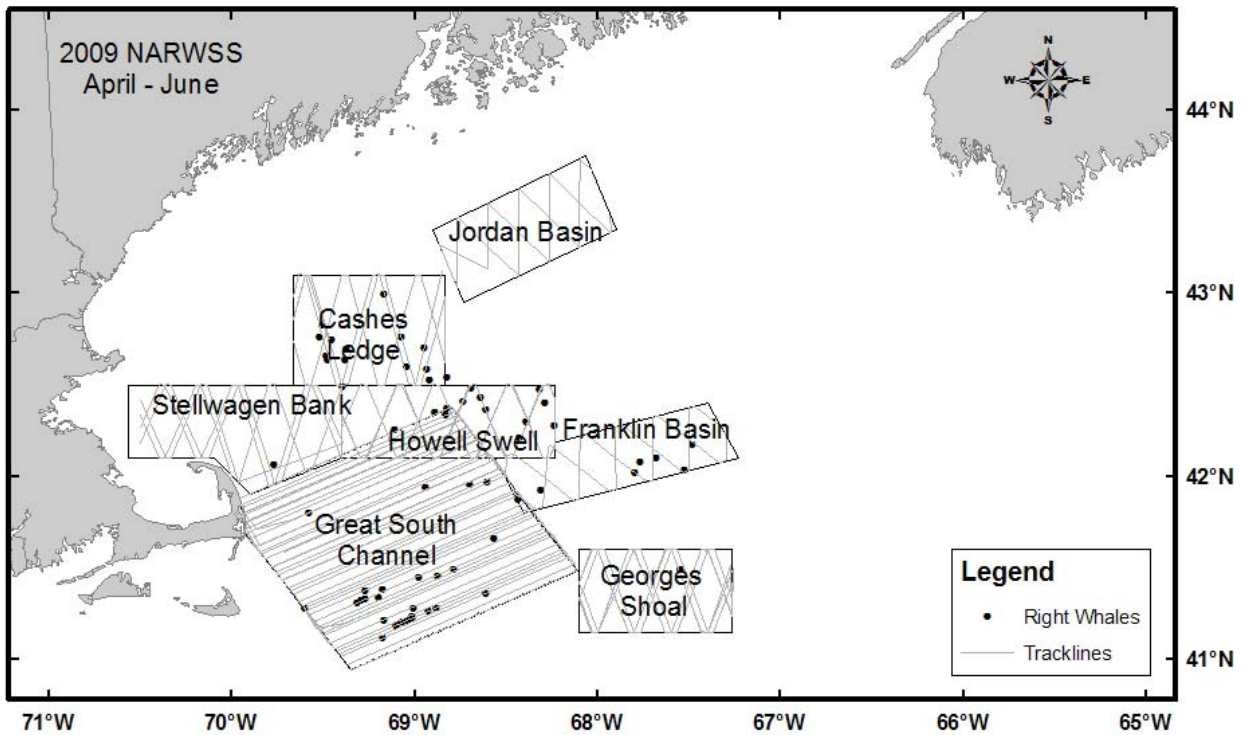


Figure 1b. NARWSS track lines and right whale sightings from April through June, 2009.

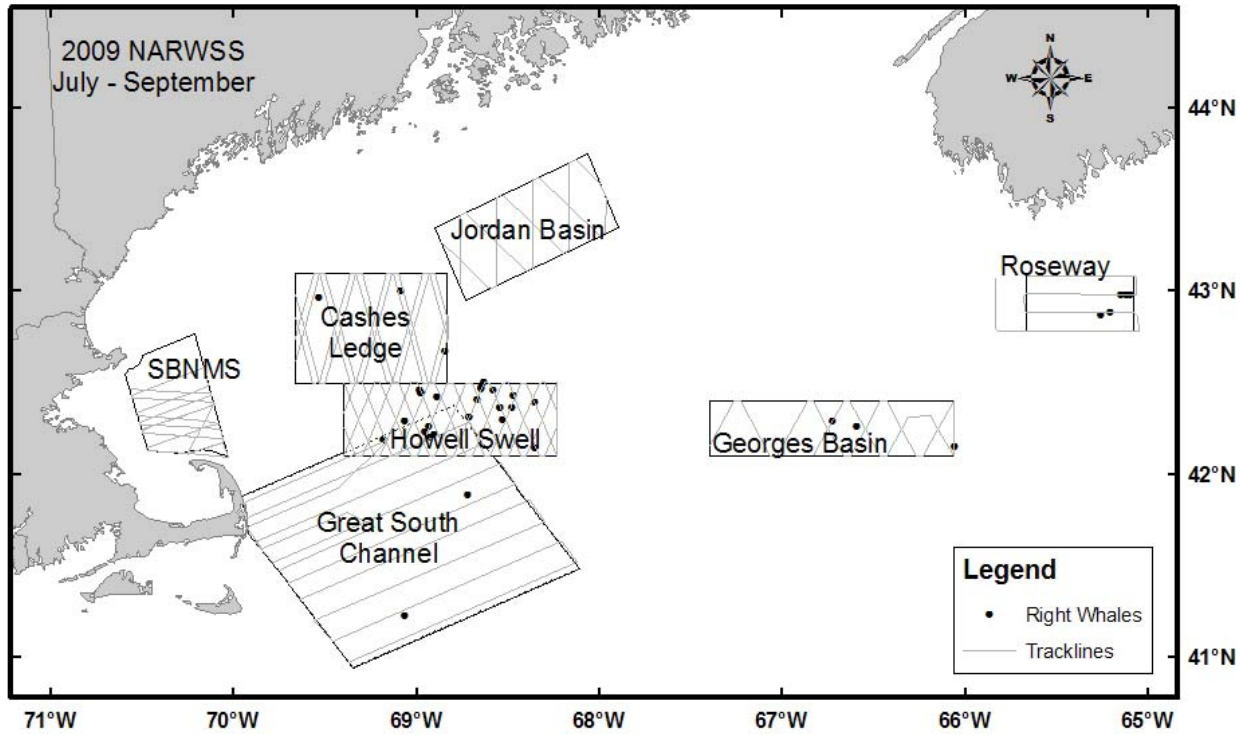


Figure 1c. NARWSS track lines and right whale sightings from July through September, 2009.

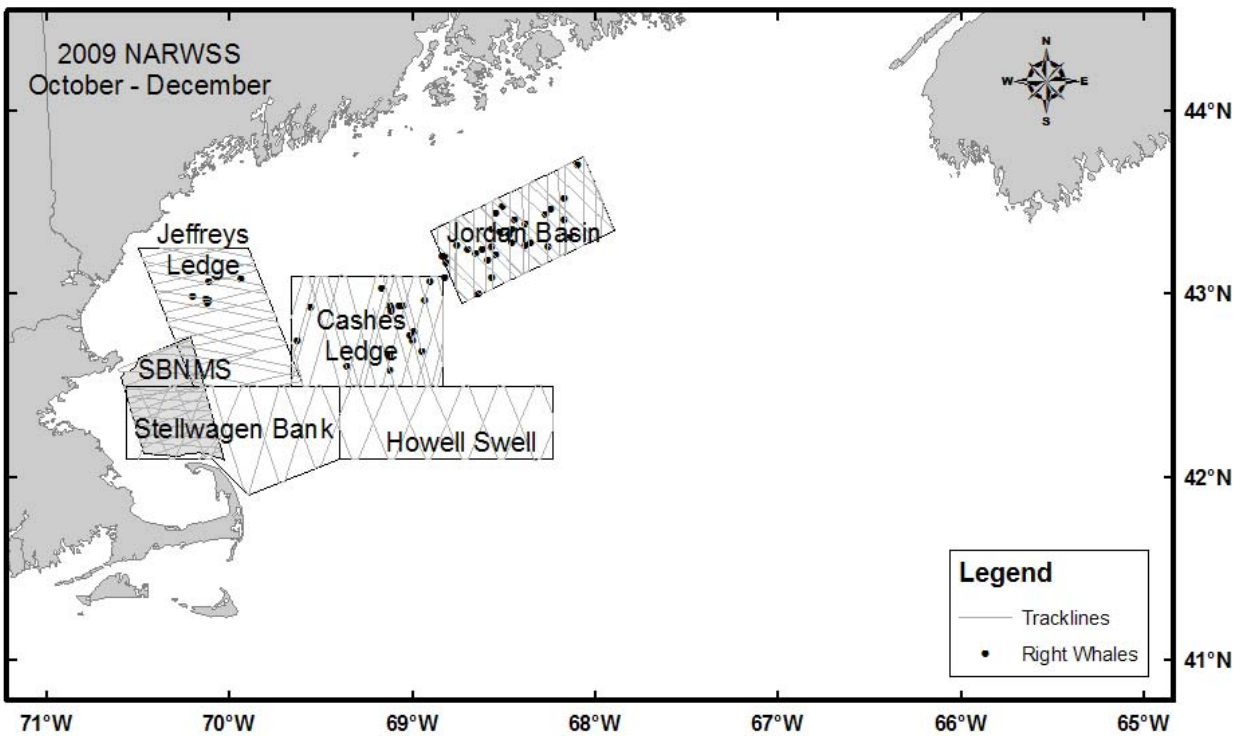
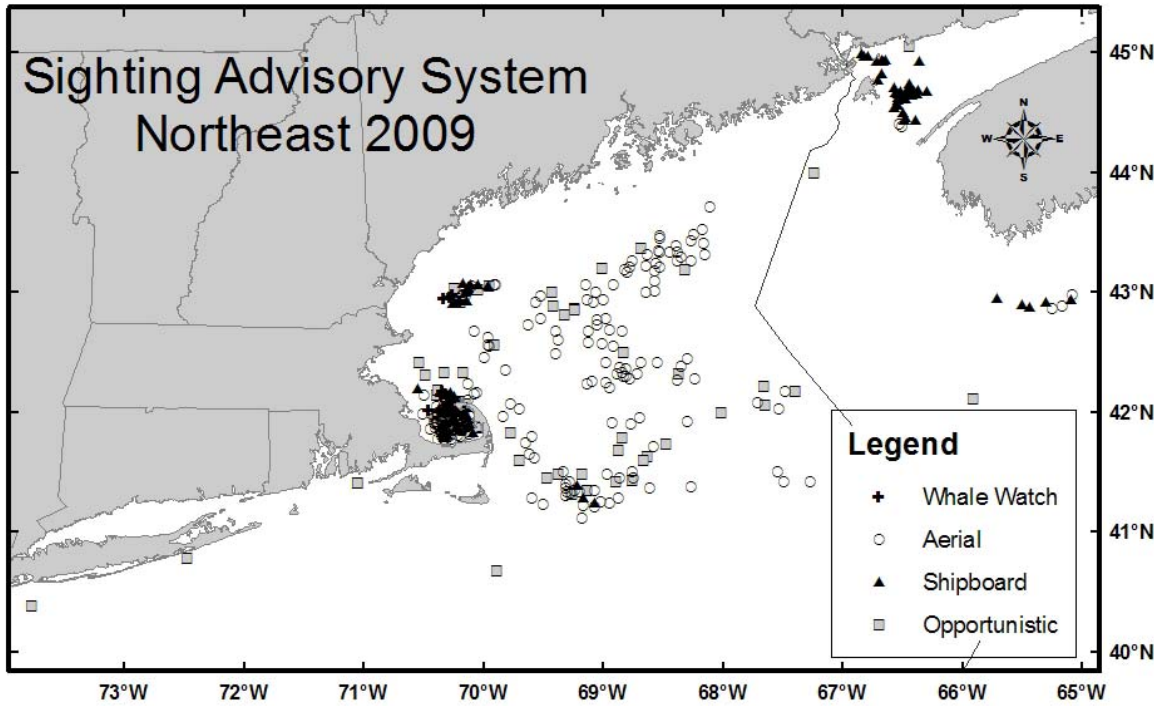
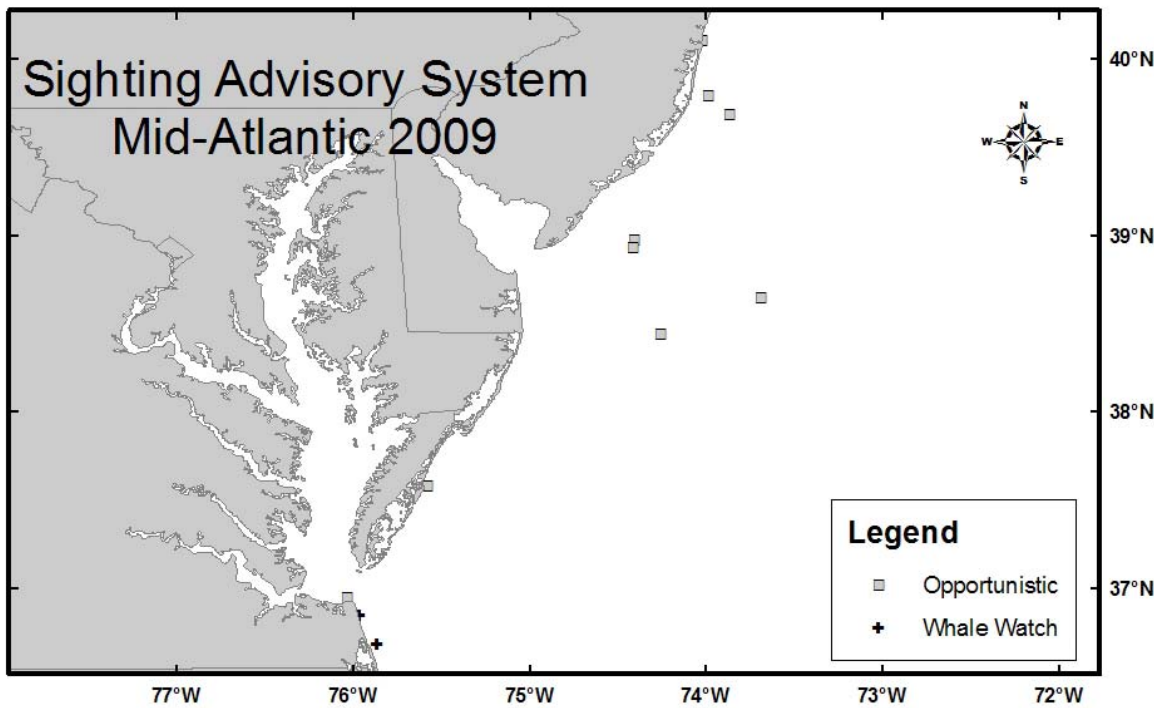


Figure 1d. NARWSS track lines and right whale sightings from October through December, 2009.

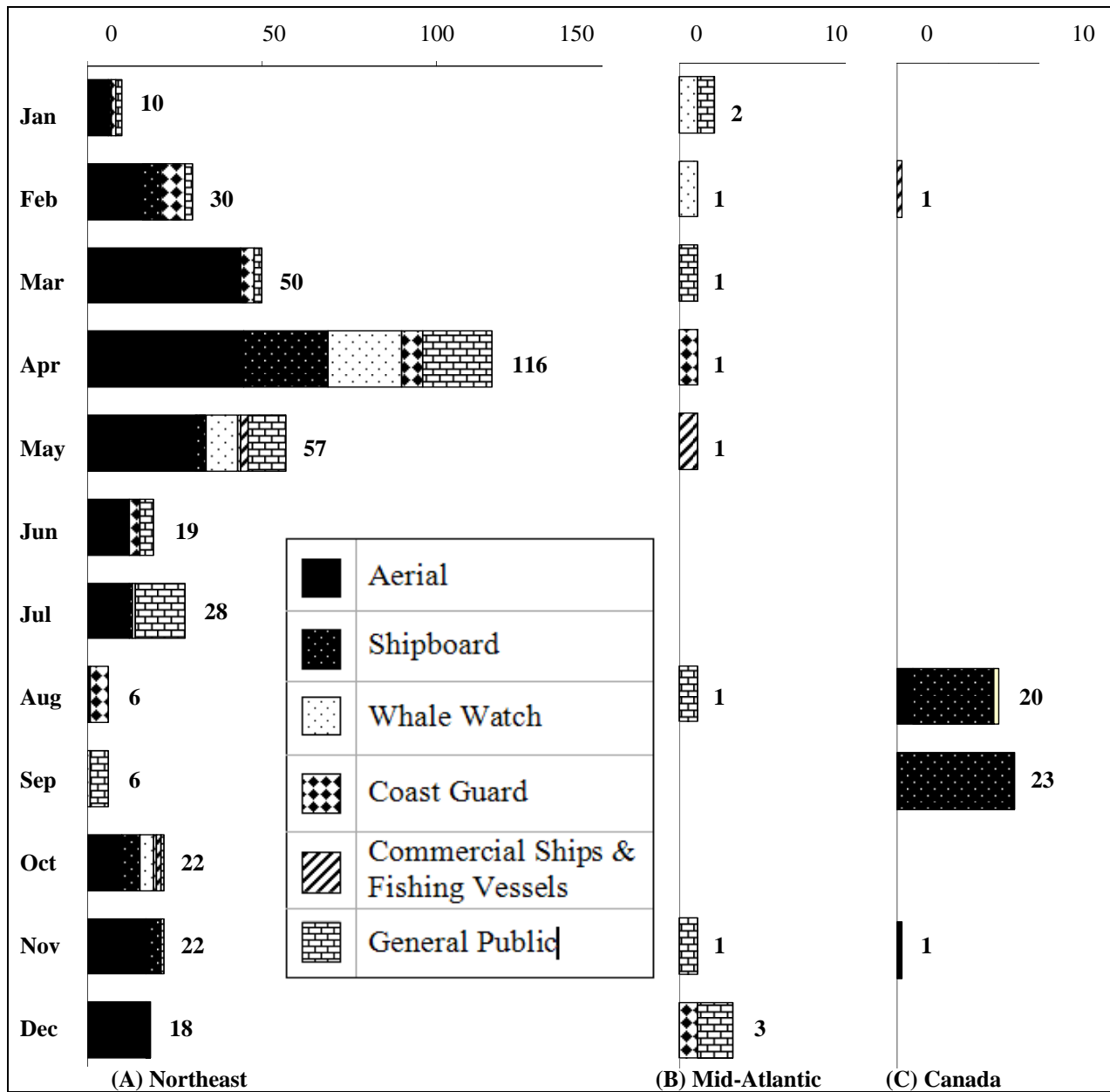




**Figure 2a.** Locations of all right whale sightings reported to the RWSAS within the Northeast and Canada region in 2009, shown by reporting source. The category ‘Opportunistic’ includes reports made by the general public, the Coast Guard, commercial ships, and fishing vessels. Unconfirmed reports were excluded from this figure.



**Figure 2b.** Locations of all right whale sightings reported to the RWSAS within the Mid-Atlantic region in 2009, shown by reporting source. The category ‘Opportunistic’ includes reports made by the general public, the Coast Guard, commercial ships, and fishing vessels. Unconfirmed reports were excluded from this figure.



**Figure 3.** Number, month, and source of right whale sighting reports (not number of whales) in 2009 within the (A) Northeast region- Maine through New York, (B) Mid-Atlantic region- New Jersey through North Carolina, and (C) Canadian waters.

**Table 3.** The total number of right whale sighting reports to the RWSAS in 2009 by reporting source.

Reporting Source	Total # of Reports	# Unconfirmed
Aerial Survey	215	0
Shipboard Survey	83	0
Whale Watch	38	0
Coast Guard	31	2
Commercial Ships & Fishing Vessels	5	2
General Public	74	1
<b>Totals</b>	<b>446</b>	<b>5</b>

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