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# North Atlantic Right Whale Sighting Survey (NARWSS) and Right Whale Sighting Advisory System (RWSAS) 2002 Results Summary

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This volume is part of a larger document containing five separate results summaries for five separate years. There is no analysis across the years included in this volume. This is the first publication of the collected data; future reports will be published annually in separate volumes.

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# A. North Atlantic Right Whale Sighting Survey (NARWSS) and Right Whale Sighting Advisory System (RWSAS) 2002 Results Summary

By Timothy V.N. Cole, Alison Stimpert, Liz Pomfret and Kelly Houle

**Overview** – The North Atlantic Right Whale Sighting Survey (NARWSS) is a NOAA Fisheries program which locates and records the seasonal distribution of right whales off the northeastern United States. The Right Whale Sighting Advisory System (RWSAS) is designed to reduce collisions between ships and right whales by alerting mariners to the presence of the right whales via fax, email, the Internet, Broadcast Notice to Mariners (BNM), NOAA Weather Radio, and the Mandatory Ship Reporting system (MSR). These reports are obtained from a variety of sources including the NARWSS, whale watch vessels, Coast Guard, fishing vessels, commercial ships, and the general public. The results from both the NARWSS and the RWSAS programs in 2002 are summarized in the following tables and figures.

**Table 1** – This table provides information on: (a) the total number of the NARWSS flight hours accomplished in each month during 2002; (b) the number of the NARWSS flights conducted in each month, by survey type; and (c) the total number of right whales sighted on all the NARWSS flights during each month in 2002. There were three primary types of surveys flown: (1) broadscale; (2) focused surveys in the Great South Channel (GSC) region; and (3) focused surveys over potential and realized Dynamic Area Management (DAM) closure zones. Broadscale surveys were flown along systematic east-west track lines that covered all Federal waters west of the Hague Line, from south of Long Island, New York, to Eastport, Maine. These surveys were flown to obtain a synoptic view of the distribution of right whales off the northeastern Atlantic coast; a completed series indicates coverage of the entire area. Surveys focused in the GSC served the dual purpose of providing commercial shipping traffic with the current locations of right whale aggregations, and obtaining photographic data of individual right whales for use in vital rate models of the population. DAM confirmation flights included flights made to investigate reported sightings of right whale aggregations outside existing closures, as well as to monitor the duration of residence of aggregations within established DAM zones.

**Figure 1** – This figure shows, by season, all the NARWSS survey track lines and right whale sighting locations in 2002. Seasonal right whale closure areas in effect during each period are shown as heavy bold lines. Closure areas in effect for only a portion of the period are represented by medium bold lines. The duration of each closure area is as follows: Cape Cod Bay: Jan 1 - May 15; Great South Channel: April 1 - June 30; Seasonal Area Management (SAM) West: March 1 - April 30; Seasonal Area Management (SAM) East: May 1 - July 31.

**Figure 2** – Presents a synopsis of the systematic broadscale surveys conducted during both the spring and fall of 2002. The data were grouped by ten-minute latitude by ten-minute longitude geographic cells. Effort levels within each cell were ranked according to the nautical miles of surveys completed within them, excluding circling. Cells with higher effort levels were shaded more darkly, while areas with no effort were left blank. To make sighting levels between cells with different effort levels comparable, the number of right whales sighted within a cell was divided by the nautical miles of survey completed in the same cell. The resulting Sighting Per Unit Effort (SPUE) within each cell was then ranked, with higher SPUE levels indicated by

darker shading. Seasonal right whale closure areas in effect during each period are shown as heavy bold lines. Closure areas in effect for only a portion of the period are represented by medium bold lines.

**Table 2** – This table lists the number of right whale sightings reported to the RWSAS in 2002, by reporting source, and indicates the number of unconfirmed and late reports by source. Unconfirmed and late reports did not produce an alert. Often sightings were combined into a single alert. A total of 110 alerts were broadcast in 2002.

**Figure 3a** – This figure depicts the total number of right whale sightings reported to the RWSAS in 2002, by month and source, in the Northeast (*i.e.,* from Maine through New York) and Canada region.

**Figure 3b** – This figure depicts the total number of right whale sightings reported to the RWSAS in 2002, by month and source, in the Mid-Atlantic region (*i.e.,* from New Jersey through North Carolina).

**Figure 4** – This figure illustrates the locations of all right whale sightings reported to the RWSAS in 2002 in the Northeast and Canada region (including unconfirmed and late reports). The number of whales reported in each sighting is indicated via graduated symbols for each reporting source. Shipping lanes, the Hague Line and the Cape Cod Bay and Great South Channel Critical Habitat areas are included for reference, as are the 50-fathom and 100-fathom depth contours.

**Table 1**. Summary of the flight hours and flight types for 2002 NARWSS flights

| Month in 2002 | Flight hours | # Flights * | | | Broadscale series completed | GSC surveys completed | DAM confirmation flights |
|---|---|---|---|---|---|---|---|
| | | *broadscale* | *focused* | *other* | | | |
| March | 35 | 2 | 3 | 2 | | | 1 |
| April | 92 | 10 | 7 | | 1 | 1 | 3 |
| May | 89 | 9 | 8 | 1 | 1 | 3 | 3 |
| June | 141 | 15 | 11 | 1 | 2 | 4 | |
| July | 36 | 4 | 4 | | | 3 | 1 |
| August | 0 | | | | | | |
| September | 47 | 9 | | | 1 | | |
| October | 44 | 7 | 1 | | 1 | | |
| November | 25 | 2 | 3 | | | 1 | 1 |
| December | 18 | 1 | 3 | | | | 3 |
| **totals** | **527** | **59** | **40** | **4** | **6** | **12** | **12** |

* Flights that had both broadscale and focused survey time were counted as broadscale flights.
Of the focused flights, 17 were strictly 'management' flights totaling 82 hours; these included DAM confirmations, disentanglement support, and carcass checks. Other flights included ferrying flights, telemetry testing, and a Congressional review flight.

**Figure 1**. Completed track lines and right whale sighting locations for 2002 NARWSS flights separated by season. Thin lines represent track lines and bull's-eyes represent right whale sighting locations.

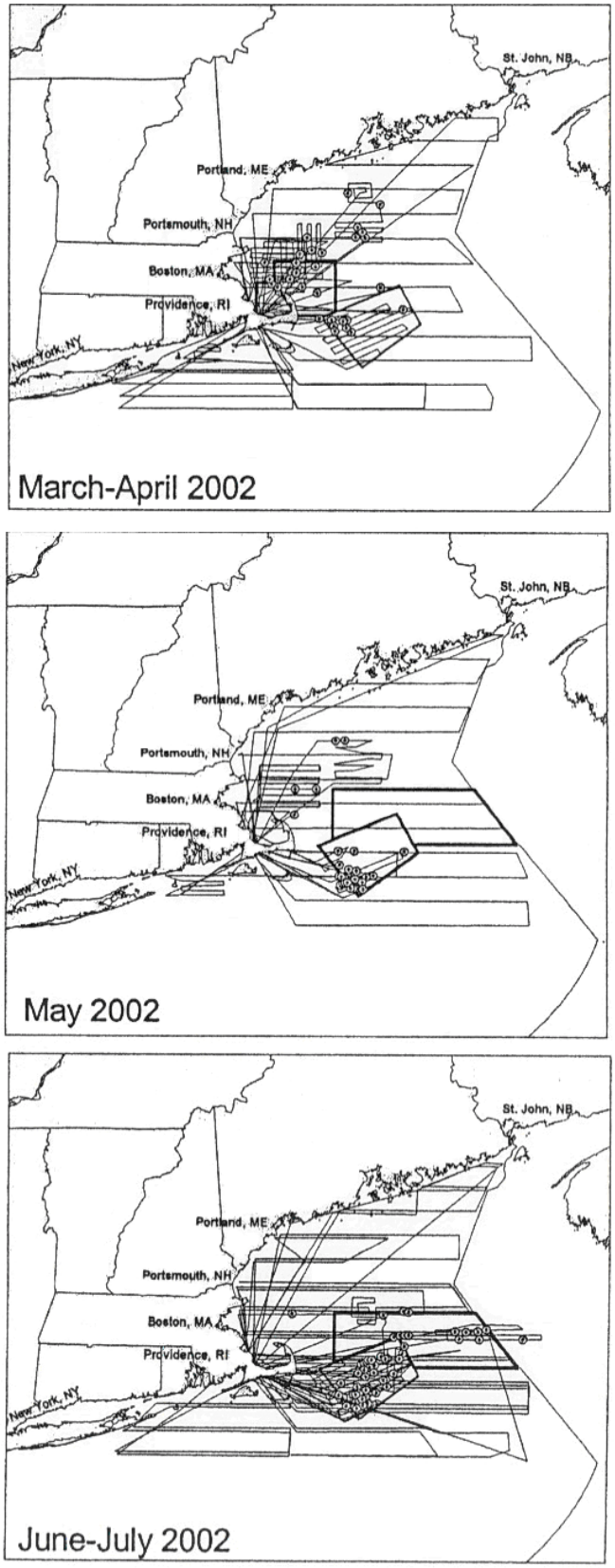

**Figure 2**. Synopsis of the systematic broadscale surveys conducted for the NARWSS in 2002, showing the resulting Sightings Per Unit Effort (SPUE) analysis

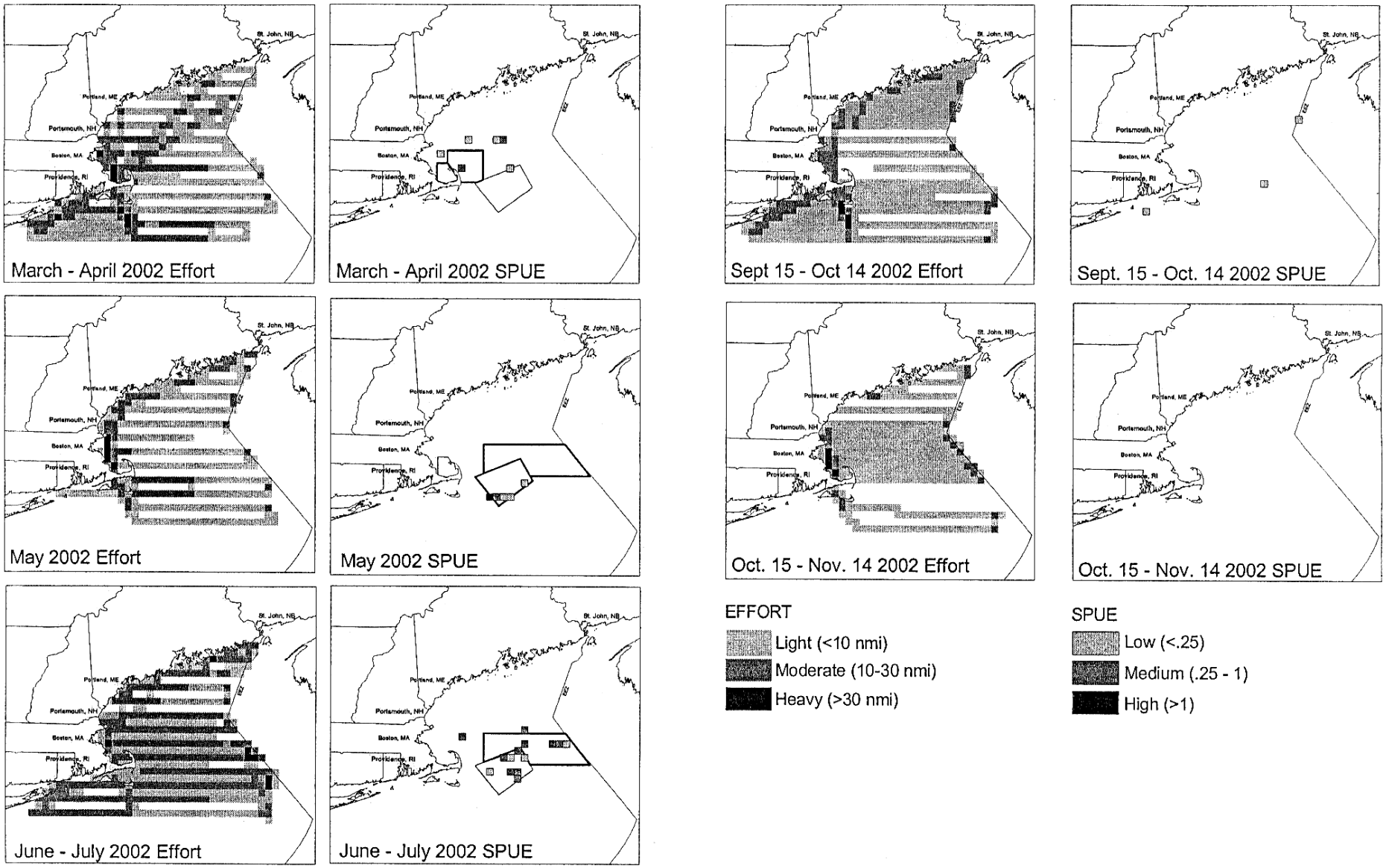

**Table 2**. Total sightings reported to the RWSAS in 2002

| Report source | # Reports | Unconfirmed | Late |
|---|---|---|---|
| Aerial survey | 145 | | |
| Shipboard survey | 34 | | 1 |
| Whale Watch | 21 | | 2 |
| Opportunistic | 31 | 3 | 5 |
| Coast Guard | 7 | | |
| Commercial Ship | 6 | 4 | 1 |
| Fishing Vessel | 1 | | |
| **totals** | **245** | **7** | **9** |

**Figure 3**. Sightings reported to the RWSAS in 2002 by source, month and region

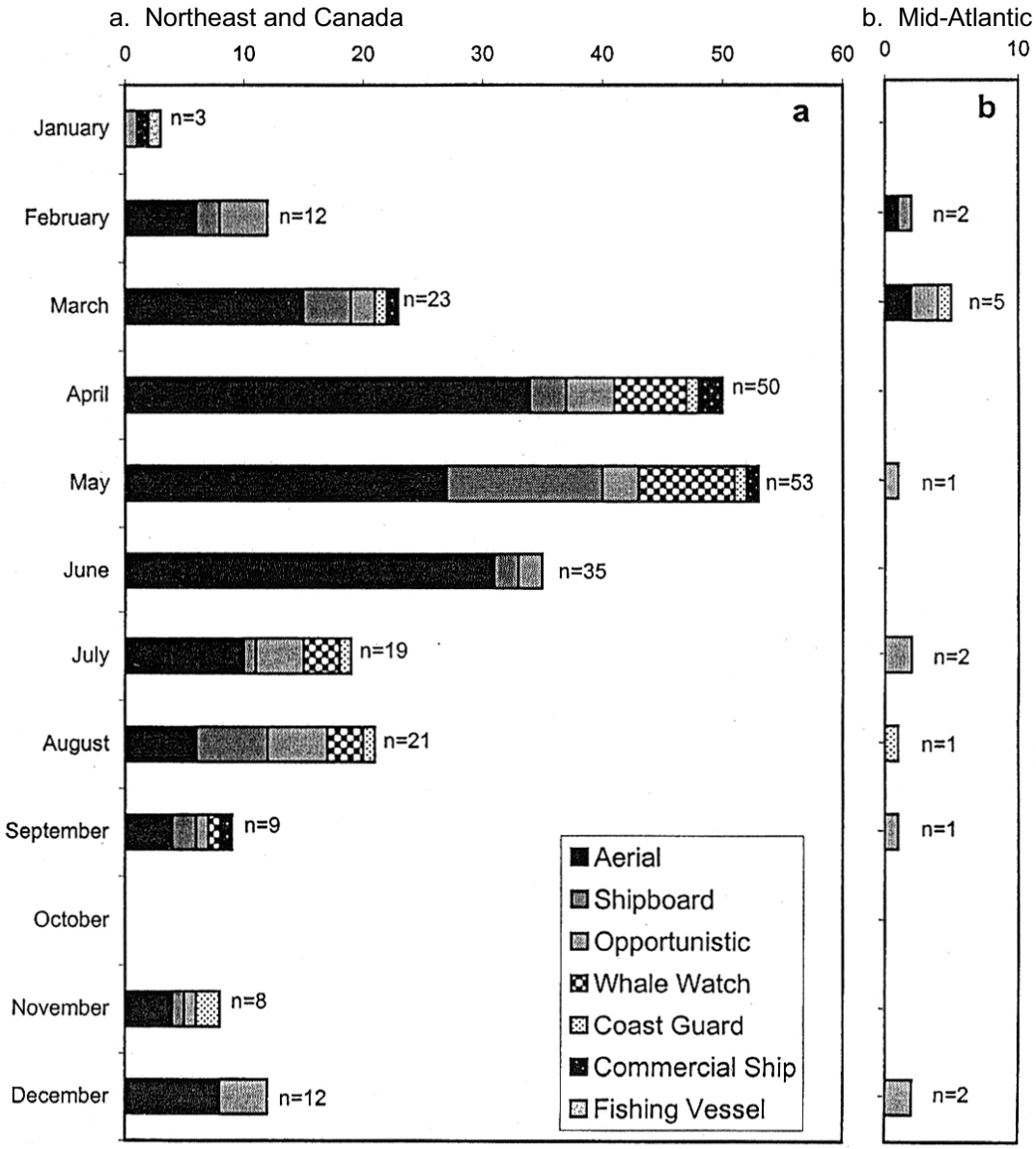
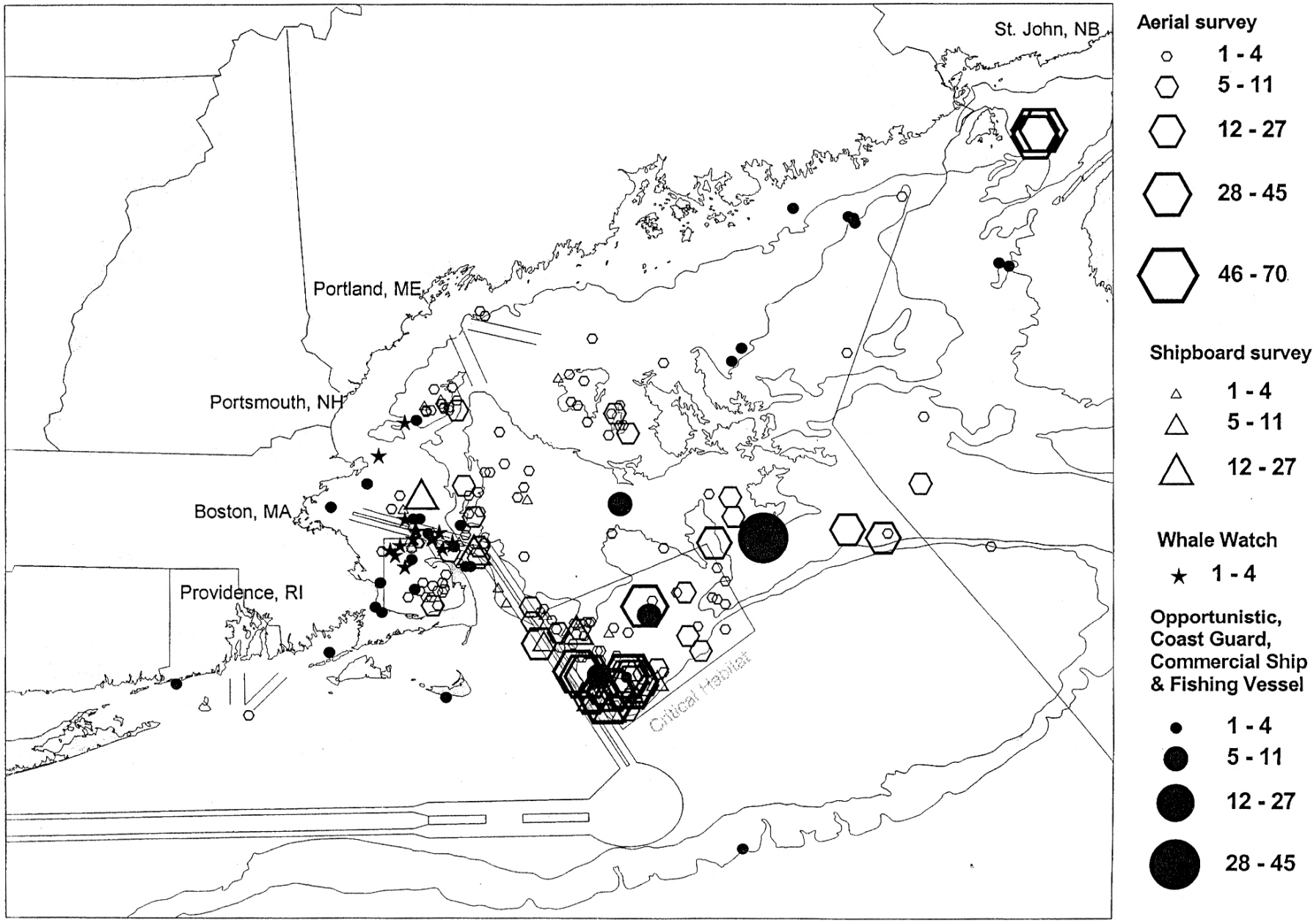
**Figure 4**. Map of Sightings reported to the RWSAS in 2002 in the Northeast region and Canadian waters