NOAA Fisheries' Proposed Strategy to Reduce Ship Strikes of North Atlantic Right Whales

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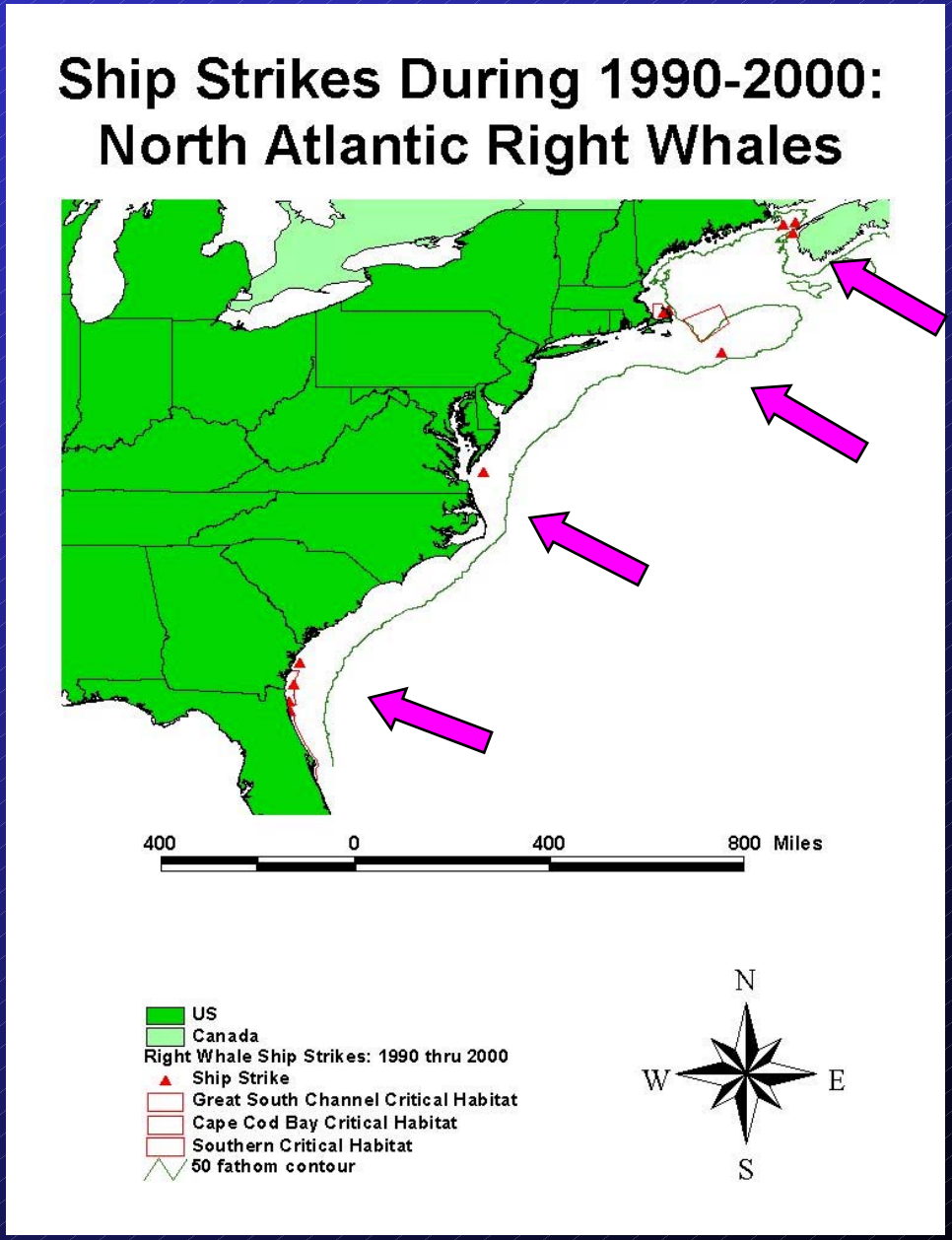
Office of Protected Resources

Objectives for Today

- Define the Problem: ***Reduce Threat of Ship Strikes of Right Whales while Minimizing Adverse Impacts on Ports and Shipping Industry***
- Describe NOAA's approach to addressing the problem
- Provide descriptions of proposed regional measures along the US East Coast
- Invite comments

Right whale w/ship strike propeller wounds

Ship strikes occur along entire U.S. east coast



Strategy Focuses on North Atlantic Right Whales

- North Atlantic right whales are highly endangered
- Population in decline
- Hit more often, proportionately, than other species
- Collisions with ships greatest known threat
- **14 known ship strike deaths since 1991**; 3 in 2001 and 2002 alone
- The ***death of even a single individual*** increases the risk of extinction

Statutory Responsibilities/Authorities

Endangered Species Act

- Prohibitions against “take”
- Recovery plans for listed species
- ESA section 7 consultations

- Marine Mammal Protection Act
  - Prohibitions against “take”
  - Limits how many individuals can be removed from a population

Strategy Objective

A comprehensive, long-term, range-wide Strategy to reduce ship strikes of right whales while also minimizing adverse impacts to ports and shipping industry.

Developing NOAA's Strategy -- Approach Taken

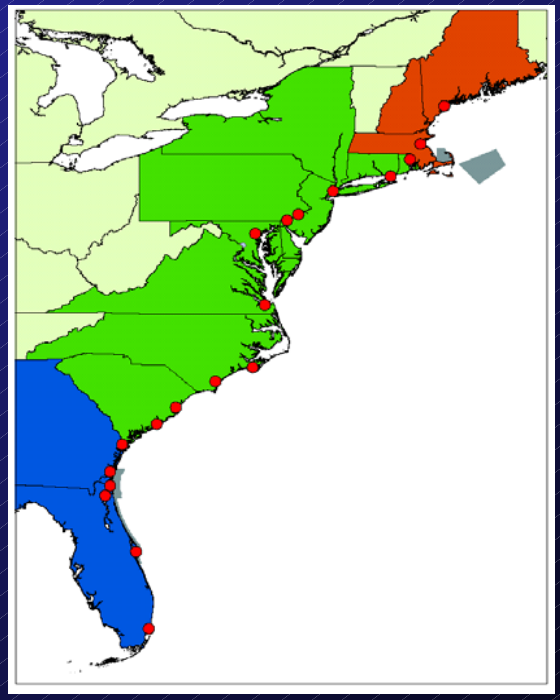
- NOAA Fisheries spent over 14 months analyzing data and options

- Background information:
  http://www.nmfs.noaa.gov/prot_res/

- ***Wide range*** of options identified -- 100+ measures considered -- from "do nothing" to "no ships"

Developing NOAA's Strategy

- U.S. East Coast divided into 3 regions based on the biology and distribution of right whales
  - Northeast U.S.
  - Mid-Atlantic States
  - Southeast U.S.



- For each Region, the NOAA Group:
  - reviewed biology, economics, and potential impacts to industry
  - identified possible measures
  - considered area and time

Developing NOAA's Strategy

- Data Used:
  - Vessel traffic information
  - 30+ years of survey data
  - Tagging and modeling research
  - Economic Study
  - 2001 report identifying management options
  - Early feedback from other agencies
  - Industry liaisons, biologists, key contacts
  - Recovery Plan Implementation Teams

Current Implementation Actions

- ANPR comment period = June 1- Sept 15, 2004
- Public meetings during summer 2004
- Initiating NEPA process
- Partnering with USCG on Port Access Route Studies
- Stakeholder meetings
- Proposed and final rule

Elements of the Strategy

1. Continue ongoing ship strikes reduction measures
2. Implement education & outreach programs
3. Conservation Agreement with Canada
4. Federal agency consultations under Section 7 of the Endangered Species Act
5. New operational measures for the commercial shipping industry, such as routing measures and speed restrictions

Elements of the Strategy

- *Continue ongoing ship strike reduction measures*
  - Aircraft surveys and communication of right whale sighting locations
  - Update navigation publications
  - Mandatory Ship Reporting systems
  - Endangered Species Act Section 7 consultations
  - Fund ship strike reduction research, including technologies

Elements of the Strategy
Technologies to Reduce Ship Strikes

- Moving Whales
  - alarm devices
- Moving Ships
  - passive acoustics
  - active acoustics
  - predictive modeling
  - tagging

Elements of the Strategy

- *Education and Outreach*
  - Develop curricula and training programs for maritime academies
  - Work with Maritime Exchanges/Associations and environmental organizations
  - Incorporate ship strike reduction material into voyage planning guides, licensing programs, etc.
  - Review/update navigational publications

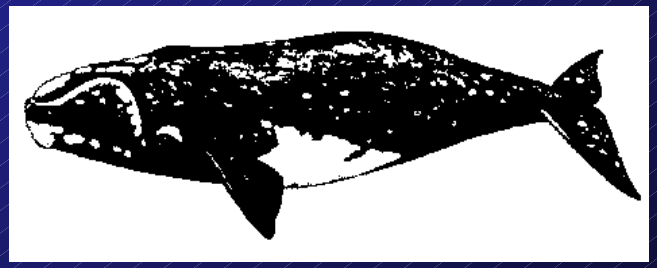
Elements of the Strategy

- *Negotiate Bi-lateral Conservation Agreement with Canada*
  - Range of right whales is trans-boundary
  - Canada implementing a number of conservation measures
  - Two countries need to collaborate to recover the species

Elements of the Strategy

- *Federal agency consultations under Section 7 of the Endangered Species Act*

NOAA Fisheries will be reviewing the need for section 7 consultations with all federal agencies that operate vessels in waters inhabited by right whales



Elements of the Strategy

5. *Operational Measures*

- Routing measures
  - Minimizes confluence between whales and ships

- Speed restrictions
  - Considered ***only*** when no other measures possible
  - Exact speed to be determined: probably 10-14 knots

- Dynamically managed areas
  - All areas within U.S. Atlantic EEZ
  - Precautionary area established for limited time around concentration of whales

Strategy Overview—All Regions

- Objectives

  --Minimize ship strike threat to right whales

  --Minimize adverse impacts on ships and ports

- Defined tightly, temporally and spatially
- Based on all available data
- Based on input from shipping industry
- Applicable to vessels $\geq$ 65 ft
- Sovereign immune vessels exempt

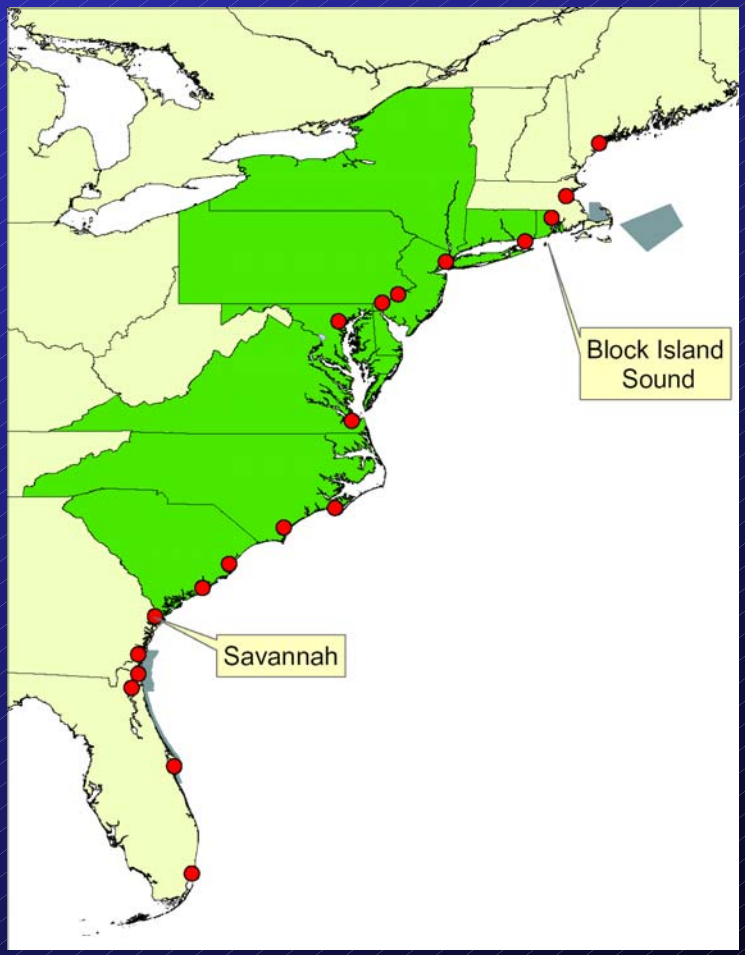
Strategic Plan for Ship Strike Reduction

U.S. Mid-Atlantic and Southeast Regions

Barb Zoodsma, SERO

Mid-Atlantic Region

- Area inclusive of south and east of Block Island Sound, Rhode Island to Port of Savannah, Georgia
- Located between known high use areas in NE and winter calving area in SE



Seasonal Use of Mid-Atlantic Region

- Migratory Corridor for ***Pregnant Females*** moving from NE to SE in fall (Sept-Nov)
- Likely Dec-Mar Resident Use by Calving Females: Cape Fear, NC – SC
- Seasonal Use/Migratory Corridor by Other Population Segments
- Migratory Corridor for Mother/Calf pairs Departing Winter Calving Area in SE for NE Areas (March – May)

Spatial Distribution of Sightings

- Generally observed in waters relatively close to shore
  - 94% of sightings within 30 nautical miles of shore
- Observed in relatively shallow water
  - 93% of sightings in depths <25 fathoms
  - 80 % in depths < 15 fathoms

Summarized from Knowlton et al., unpub. report

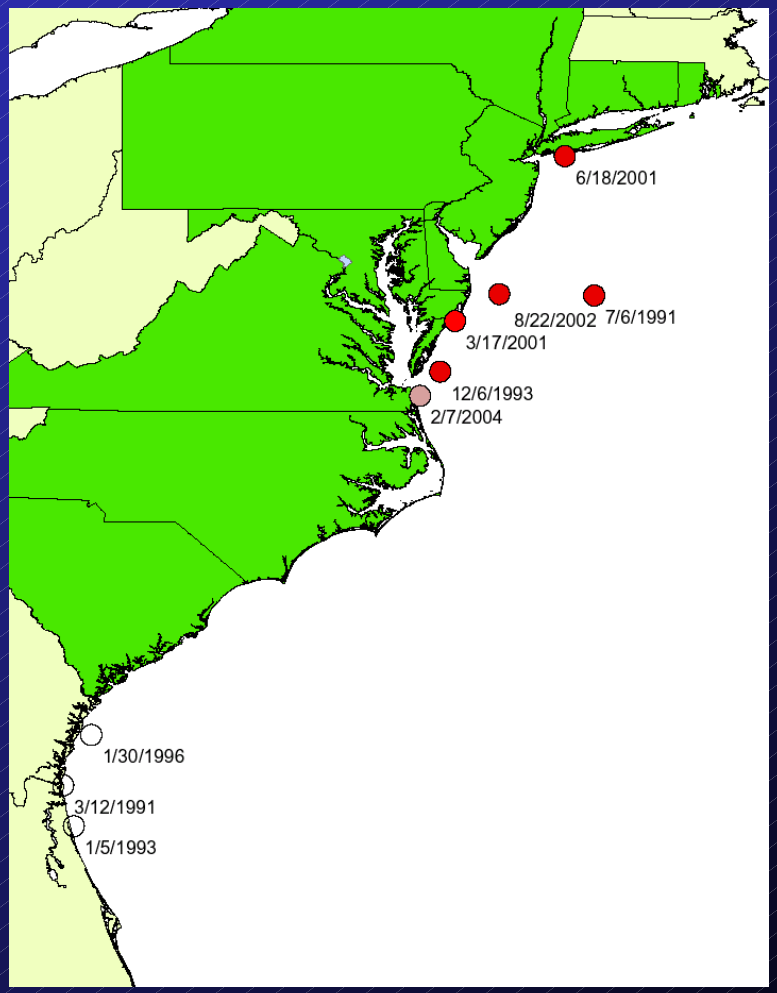
Mid-Atlantic Region

- Risks to Right Whales:
  - East-west traffic to mid-Atlantic ports bisect north-south movement of whales
  - Vital segment of population (reproducing females) uses this area
    - Migration
    - Other

Mid-Atlantic Ship Strike Mortalities

1991 - 2002

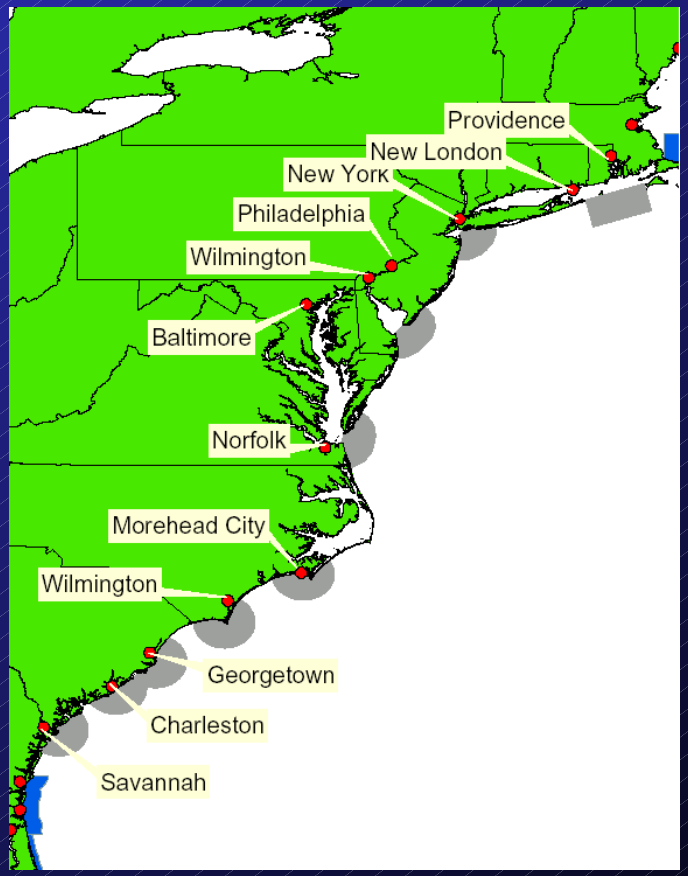
- 5 of 14 confirmed ship strike mortalities were in the mid-Atlantic
- 3 ship strike mortalities to right whales occurred in last 3 years
- One in 2004?



Area of Mid-Atlantic Operational Measures

~30 nmi area around 9 mid-Atlantic port entrance areas

- Addresses coastal confluence of whales and ships



Note: Precise size or radii to be determined pending further analysis of sighting data

Seasonality of Proposed Mid-Atlantic Operational Measures

- A set of uniform, rolling dates that closely track right whale occurrence in an area

Note: Precise dates to be determined pending further analysis and modeling

Seasonality of Proposed Mid-Atlantic Operational Measures

PORT	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Providence/New London (Block Island)								
New York								
Philadelphia/Wilmington (Delaware Bay)								
Baltimore/Norfolk (Chesapeake)								
Morehead City, NC								
Wilmington, NC								
Georgetown								
Charleston								
Savannah								

Note: Precise dates to be determined pending further analysis and modeling

Mid-Atlantic Operational Measures Considered, but Rejected

- Do Nothing: No measures (fails to address the problem)
- Mandatory Ship Reporting (difficulties in providing info back to mariners on whale locations)
- Coast-wide measures (greatest ship density at port entrances)
- Extended seasonal restrictions (too burdensome, data lacking)

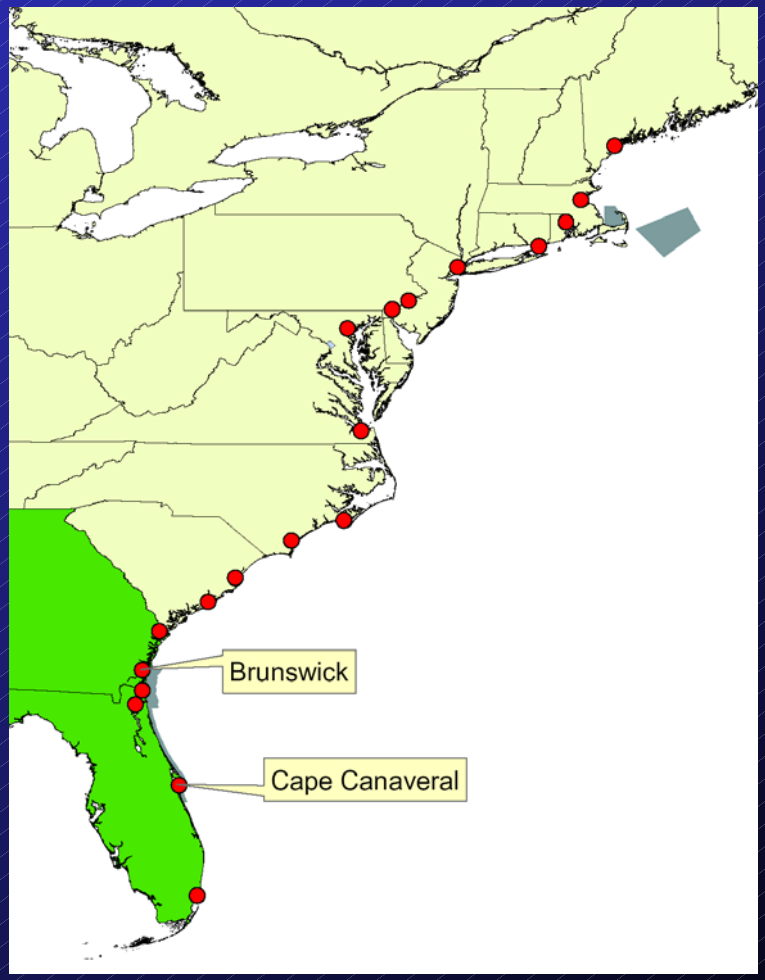
Proposed Mid-Atlantic Operational Measures

- Speed restrictions in ~30 nmi areas around 9 mid-Atlantic port areas
  - Tight seasonal constraints match biology of whales and minimize impacts on ships and ports

Note: Precise size of area to be determined pending further analysis of sighting data

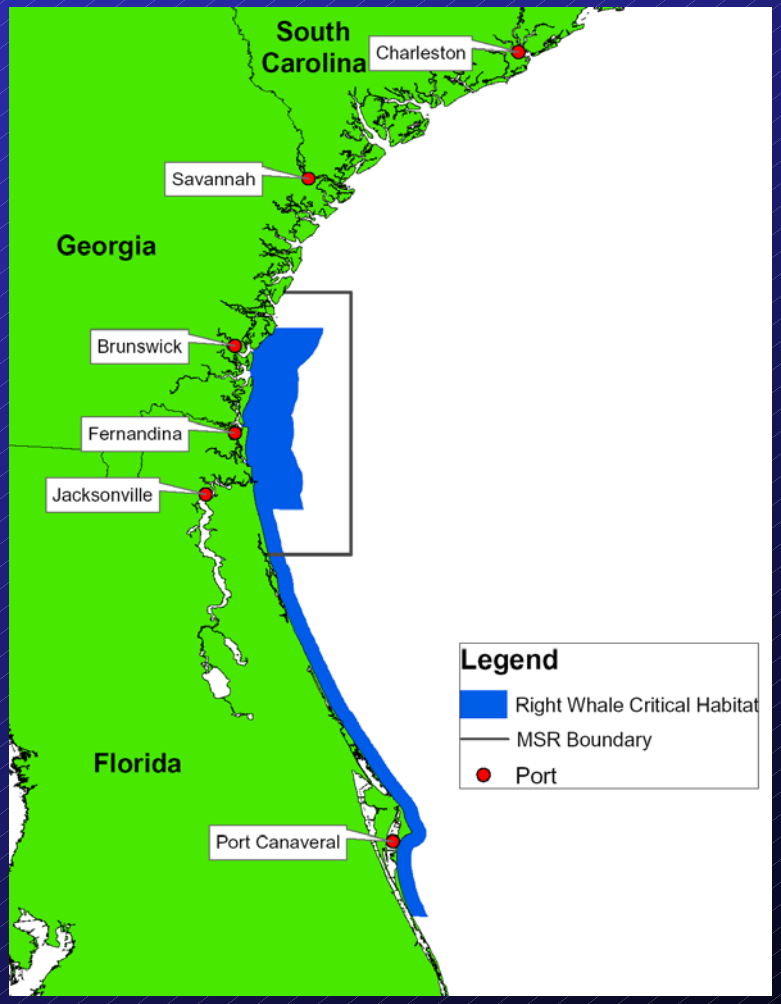
SEUS Region

- Area inclusive of just north of Brunswick, Georgia to Cape Canaveral, Florida
- Winter calving area



SEUS Region

- Features:
  - Calving Area Critical Habitat
  - MSR Area: WHALESSOUTH
  - Ports:
    - Brunswick, GA
    - Fernandina, FL
    - Jacksonville, FL
    - Cape Canaveral, FL

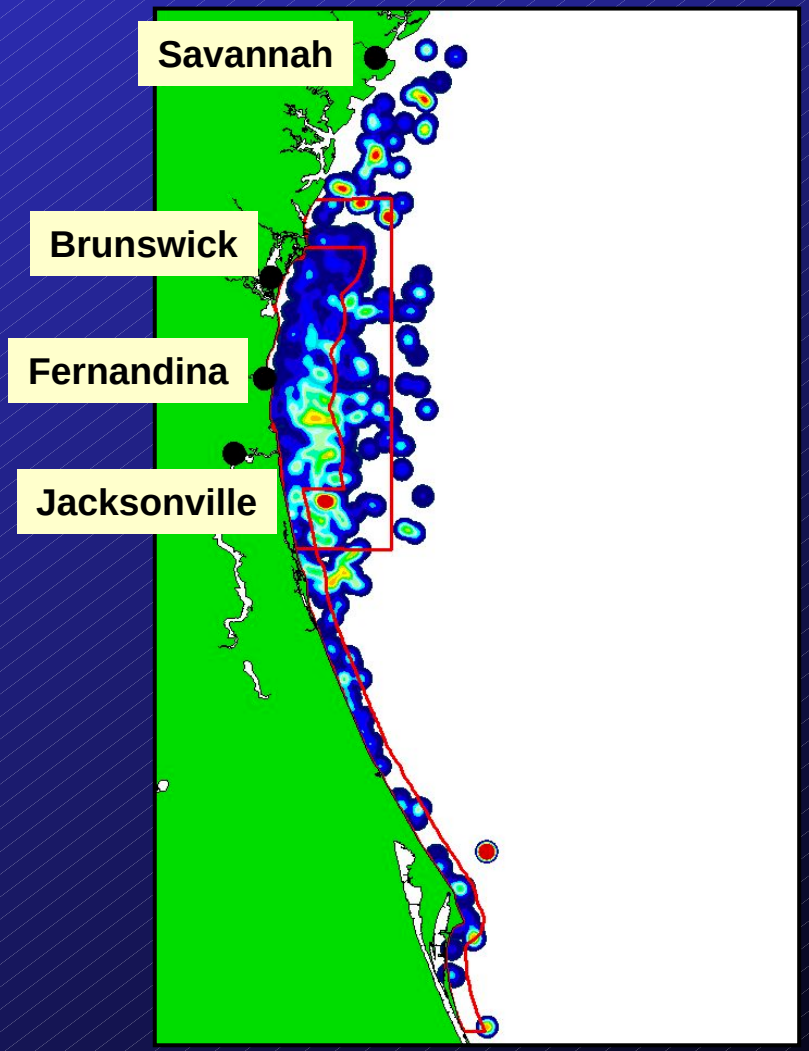


SEUS Region

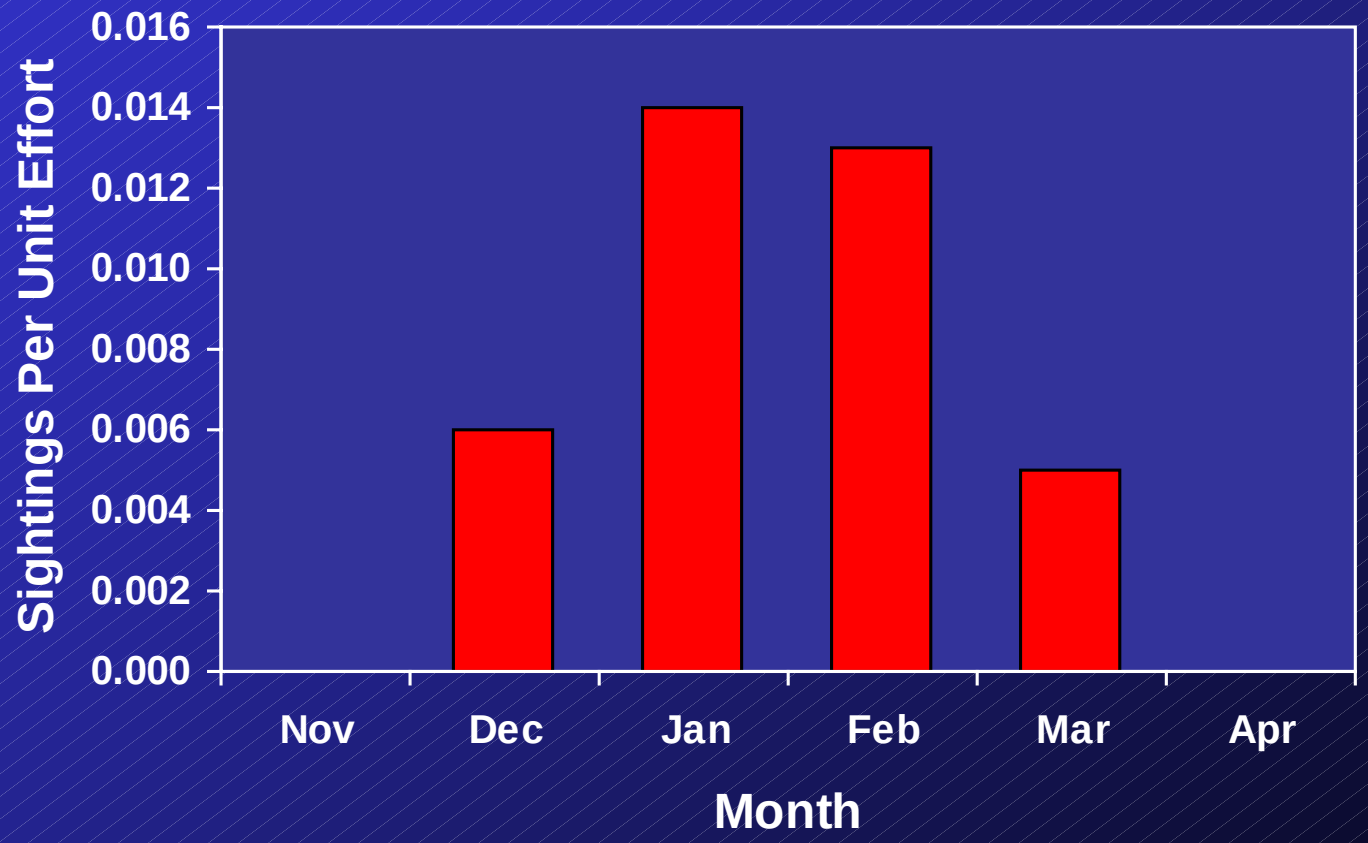
- Only known calving ground for North Atlantic Right Whales
- Seasonal use (Dec. – Mar)
  - Calving females
  - Other population segments
- High proportion of reproducing females in this area (most vital segment of right whale population)
- Protecting reproductive potential is essential for recovery of the species.

Spatial Distribution in SEUS

- Whales distributed fairly close to shore
- High use area from Brunswick to south of Jacksonville



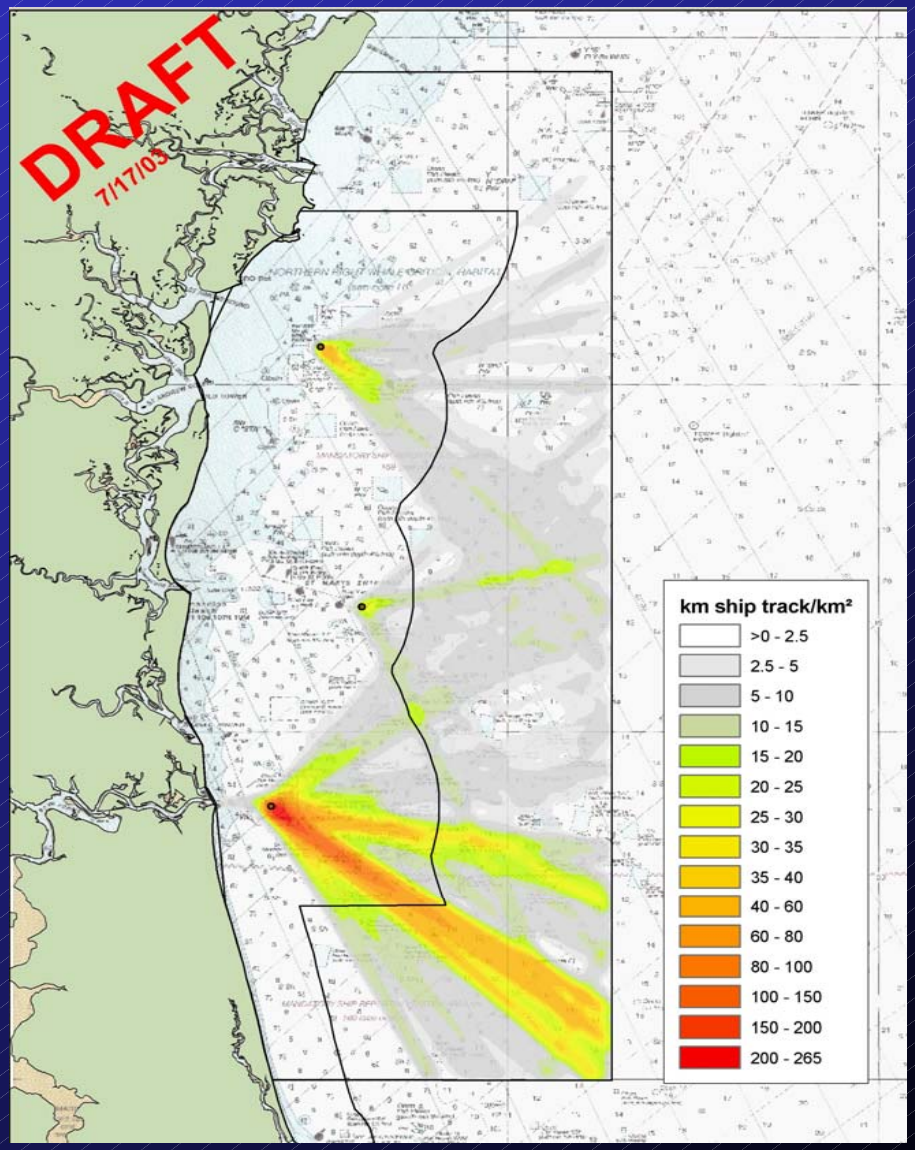
Temporal Distribution of SEUS Right Whale Sightings



Source: NMFS Unpub. Data.
Sightings through 01/02 calving season and south of 31o30' latitude

MSR Ship Tracks

- Provides measure of traffic density through critical habitat
- No defined approaches to these ports
- Several “de facto” traffic lanes
- Highest use port is Jacksonville

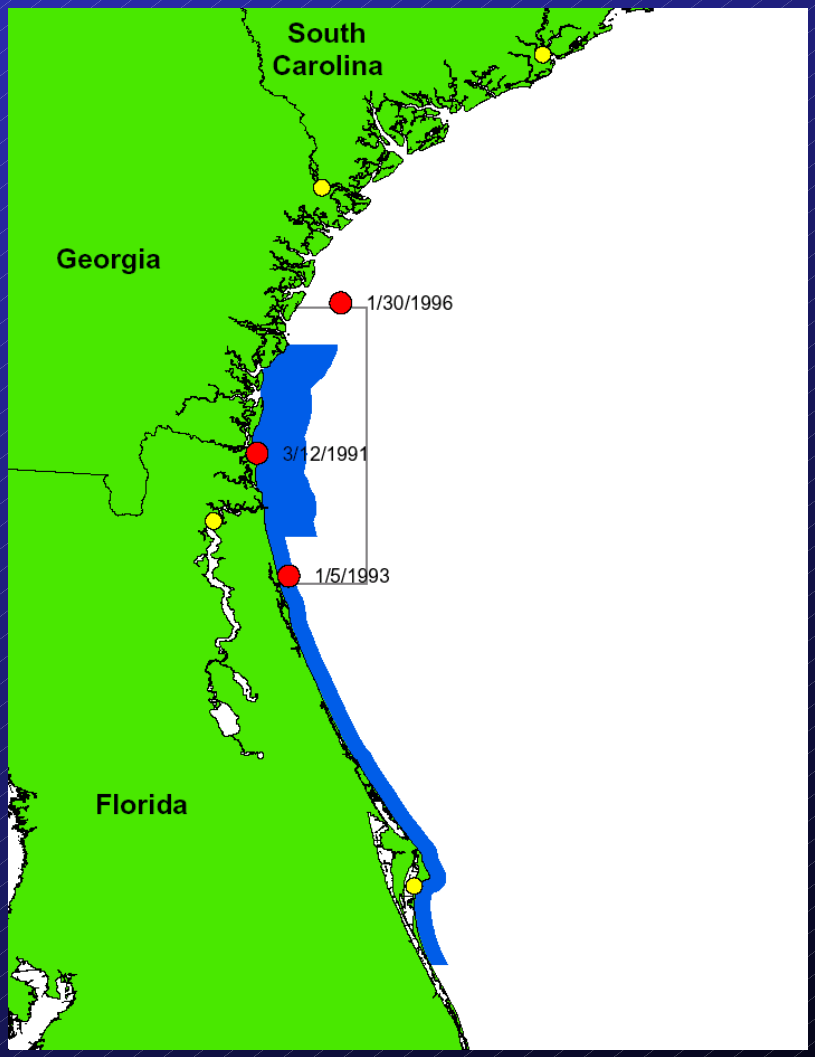


Source: Leslie Ward, Florida Marine Research Institute

SE US Ship Strike Mortalities

1991 - 2002

- 3 documented ship strike mortalities

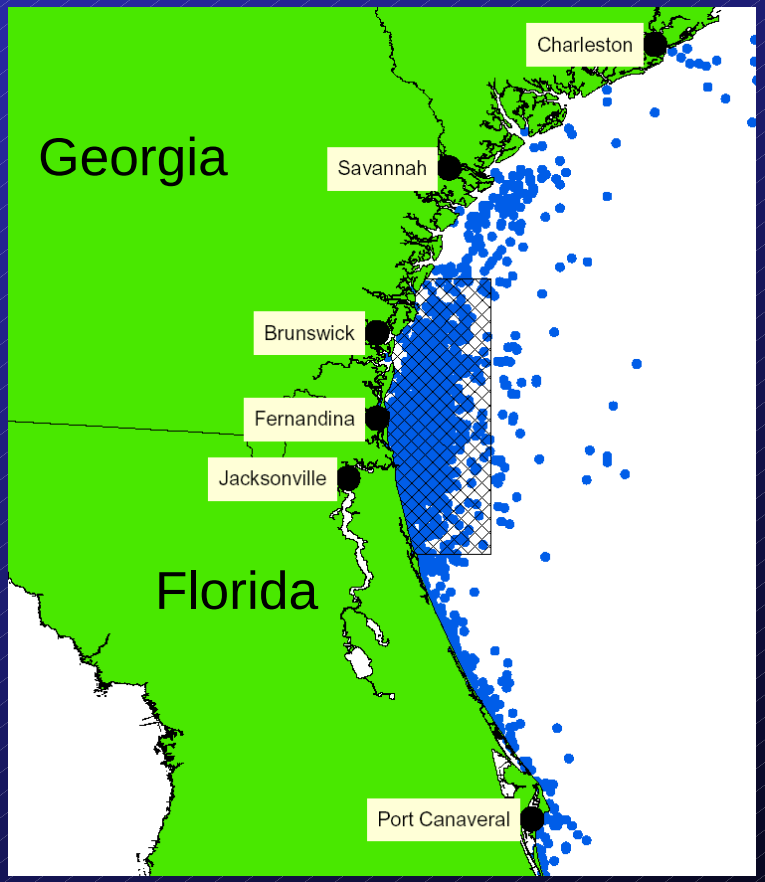


Seasonality of Proposed SEUS Operational Measures

- December 1 through March 31
  - Based on right whale sightings data

Area of Proposed SEUS Operational Measures

- Management area extends east about:
  - 28 nmi off Brunswick
  - 29 nmi off Fernandina
  - 28 nmi off Jacksonville



Note: Precise area delineations pending ongoing analysis and modeling

SEUS Operational Measures Considered, but Rejected

- No Measures (fails to address problem)
- Voluntary Measures (parity)
- Limit port approaches to daylight only (sightability from ships questionable)
- Escort Boats w/ acoustic detection/deterrence technology (nonexistent)

Proposed SEUS Operational Measures

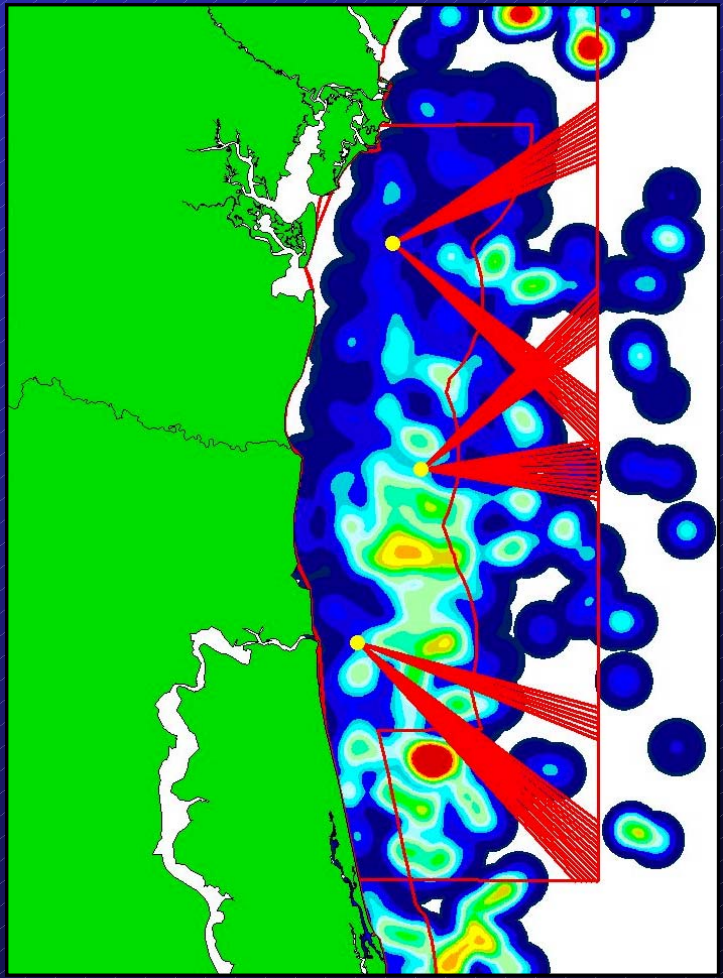
- USCG Port Access Route Study (PARS) for Brunswick, Fernandina, and Jacksonville
  - Objective: full assessment of potential routing on:
    - Risk reduction to right whales
    - Navigational safety
    - Economics of affected ports

Proposed SEUS Operational Measures

- If Port Access Route Study (PARS) suggests appropriate for Brunswick, Fernandina, and Jacksonville
  - Establish designated lanes to reduce risk to right whales
  - Implement speed restrictions in the designated lanes

Proposed SEUS Operational Measures

- PARS ensures full hearing of any routing measure considered.
  - Allows for integration of views: maritime safety, port elasticity, and right whale protection



Proposed SEUS Operational Measures

- Develop an understanding with large recreational traffic and tug/barges that travel coastwise to:
  - Minimize their time in the area where right whales occur
  - Use traffic lanes to the extent possible
  - Observe speed restrictions if outside of lanes

Proposed Mid-Atlantic And Southeast Operational Measures

- Measures concentrate on ***area*** of high risk (whale/ship confluence near port entrances)
- Measures concentrate on ***time*** when whales are in the area (lessen burden on maritime industry)
- Measures provide ***parity*** across mid-Atlantic and Southeast ports (to address issue of port dislocation)
- Measures ***minimize restrictions*** (particularly when whales are not present)

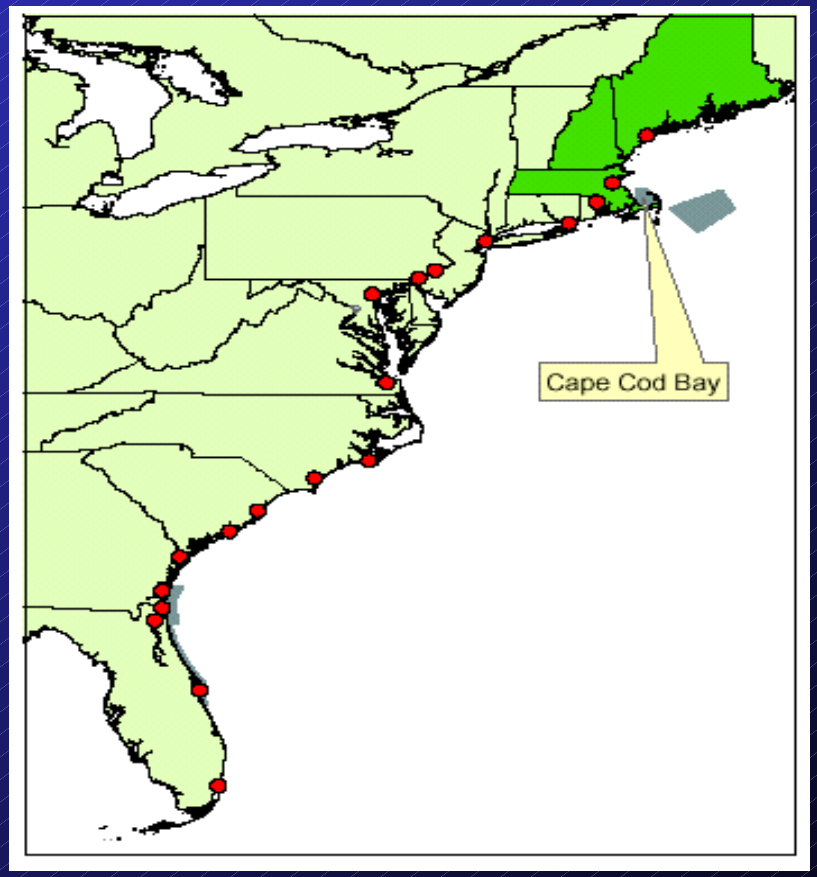
Strategic Plan for Ship Strike Reduction

Northeast Coast of the United States (NEUS)

Patricia Gerrior, NERO

Northeast Region

- Block Island Sound, RI east and north to Canadian border
- Encompasses major feeding area for right whales

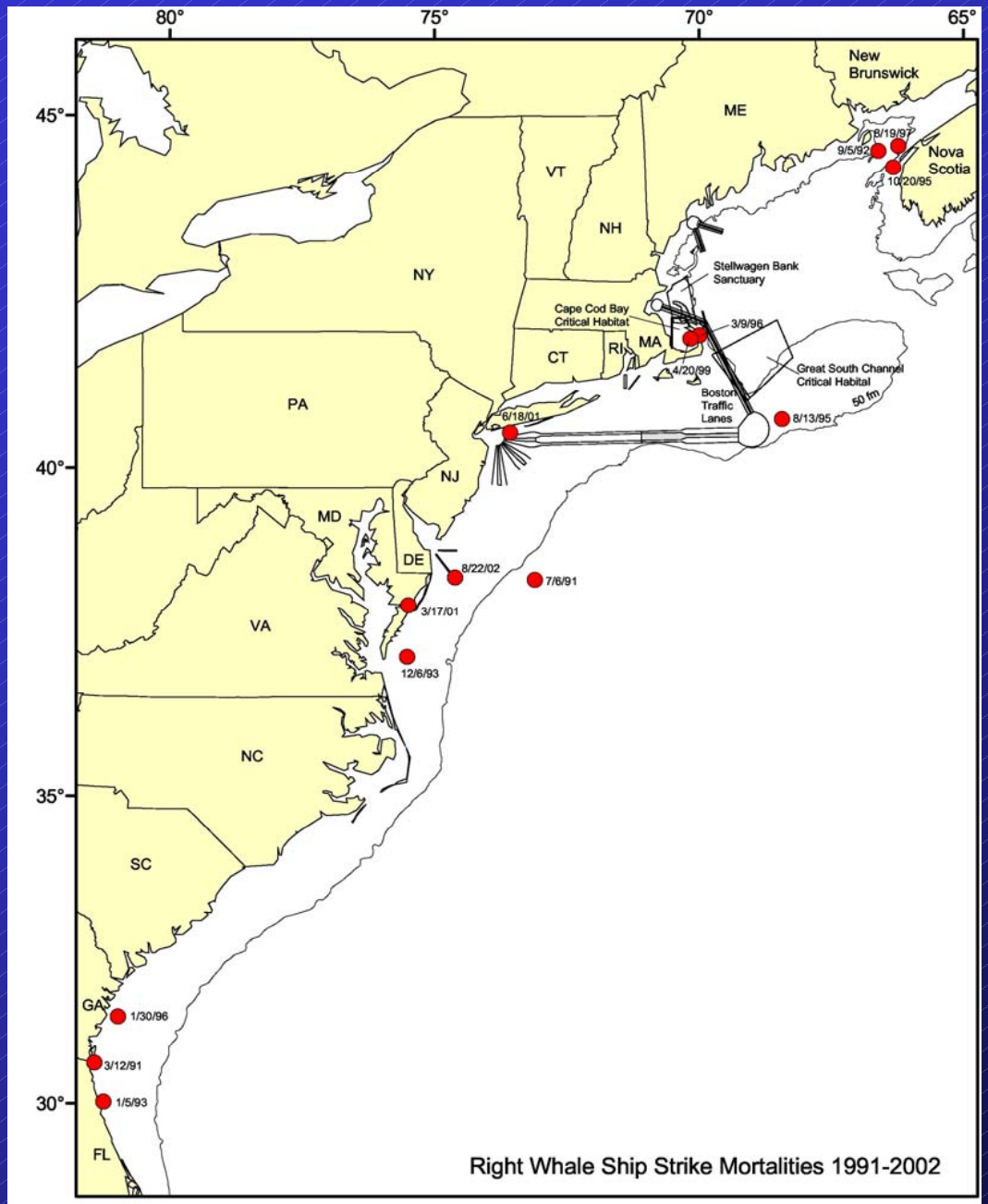


Right Whale Use of the Northeast Region

- Majority of right whale population moves through NE waters annually
- All age and sex classes
- Major feeding grounds in NE
- Present in areas for days to weeks
- Groups of 100+ animals observed at times in some NE areas

Right Whale Use of the Northeast Region

- Right whales present year around, but show an annual pattern of movements
  - **Winter –** Cape Cod Bay
  - **Spring –** Great South Channel and the northern edge of Georges Bank; mother-calf pairs arrive from SE USA
  - **Summer –** GOM & Canadian waters (Bay of Fundy and Scotian Shelf)
  - **Fall –** Whales disperse, pregnant females travel to SE USA waters to calve along with some juveniles



Right Whale Ship Strikes 1991 – 2002

- NE (inc CA) 6 strikes
  - Sept 1992
  - Aug 1995
  - Oct 1995
  - Mar 1996
  - Aug 1997
  - Apr 1999
- MA 5 strikes
- SE 3 strikes

Applicability

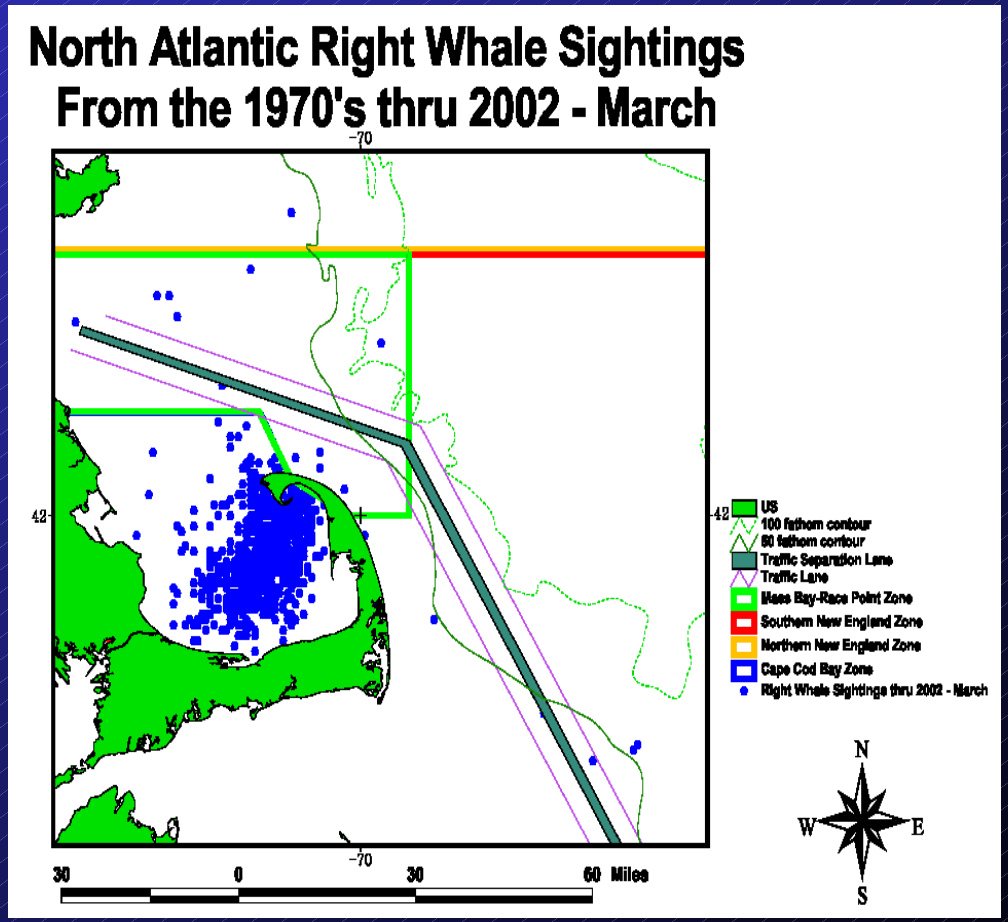
- Right whales only
- Commercial Vessels
- Other Vessels $\geq$ 65 ft
  - Tug & tow
  - Fishing vessels
  - Small passenger (party & head boats)
  - Whale watch
  - Recreational

Some Measures Considered, but Eliminated

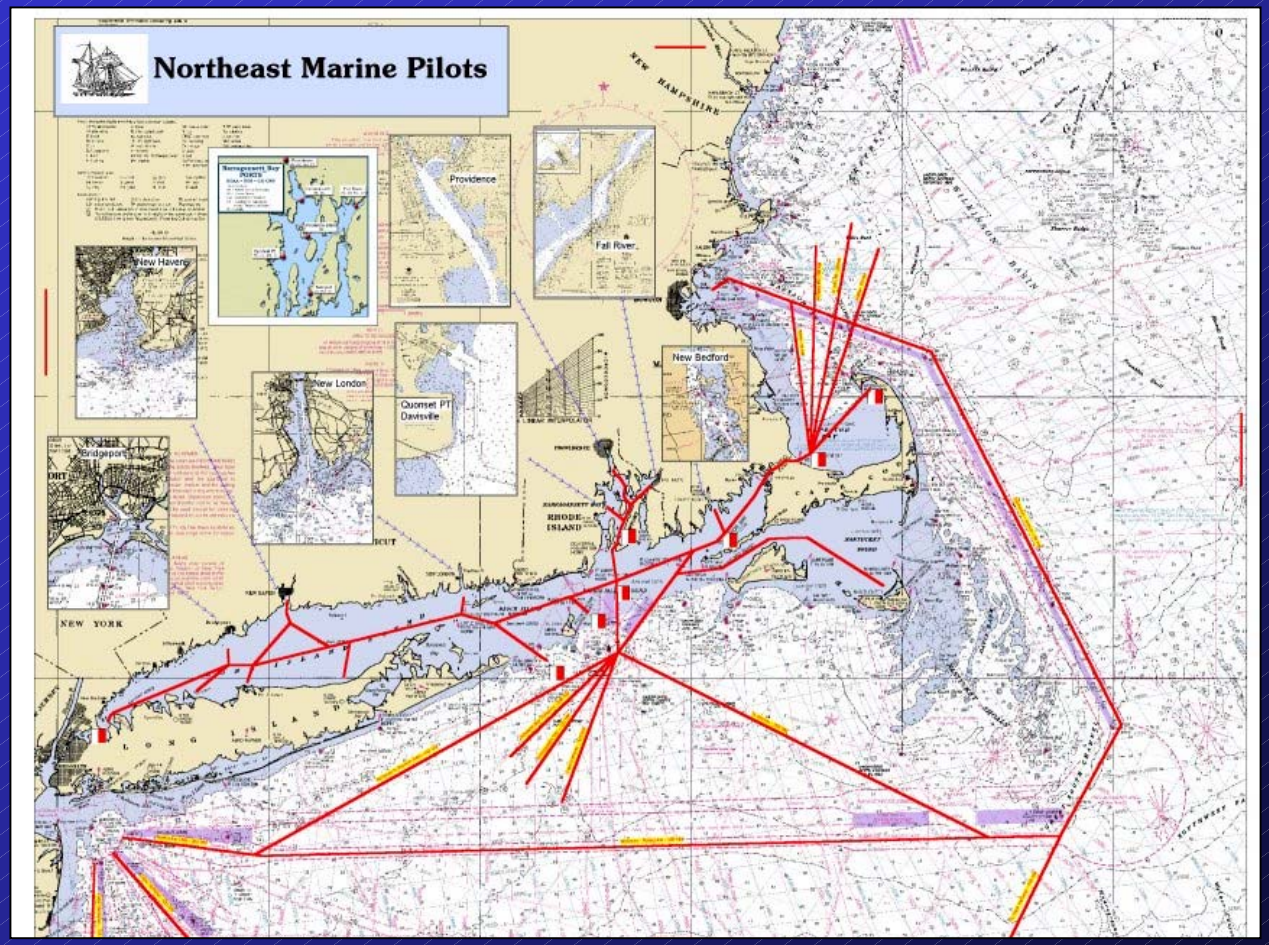
- Mandatory traffic lanes (IMO)
- Cape Cod Bay seasonal closure ($$$)
- Escort boats w/trained marine mammal observers ($$, night,weather)
- Voluntary measures (no industry support)
- Do nothing (fails to address problem)

Cape Cod Bay (CCB) Zone

- Concentrations January - April
- Feeding
- Risks –Traffic to/from
  - CC Canal
  - Provincetown



Cape Cod Bay Measures



- **Traffic Routes in CCB & off Southern New England, provided by Northeast Marine Pilots**

Ship Strike Cape Cod Bay

Adult female right whale found dead in CCB April1999

Cape Cod Bay Measures

- Time: 1 January – 30 April
- Area: Cape Cod Bay Right Whale Critical Habitat to western shoreline of Bay

Cape Cod Bay Measures

- Establish ship routes based on US Coast Guard Port Access Route Study (PARS)
- Consider establishing CCB Critical Habitat as a ‘no entry zone’ or limited access area
  - Generally acceptable to shipping industry
  - Will include important component of CCB traffic, i.e., tugs & barges

Cape Cod Bay Measures

- **Ship route - Boston & ports North**
  - Western side of CCB & outside of critical habitat
  - Sufficient width to route around whales
- **Ship route - Provincetown**
  - Minimize travel distance thru critical habitat
  - Sufficient width to route around whales
  - Speed restrictions in lanes
    - Lift speed restrictions when “no” whales

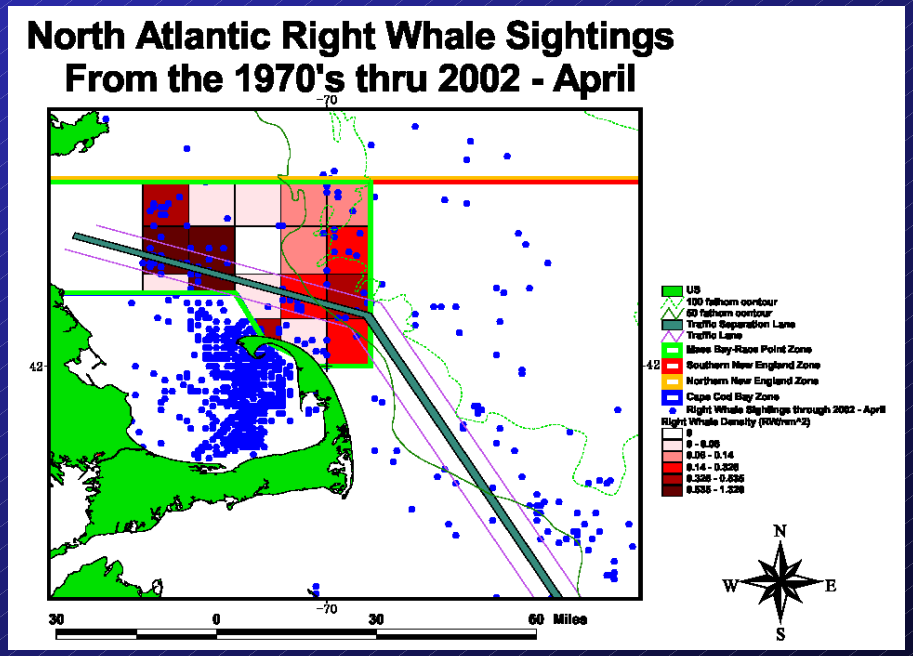
Cape Cod Bay Measures

- **Established Letter of Agreement with Army Corps of Engineers for Cape Cod Canal**
  - Formalized & enhanced existing agreement (mariner notifications)
    - Include tug & barge traffic
    - Include north & south bound traffic

Tug and Barge in Cape Cod Canal; major component of CCB traffic

Off Race Point (ORP) Zone

- Whales move N and E from Cape Cod Bay in April-May
- Risks - Traffic in/out of Boston & ports north



Off Race Point Measures

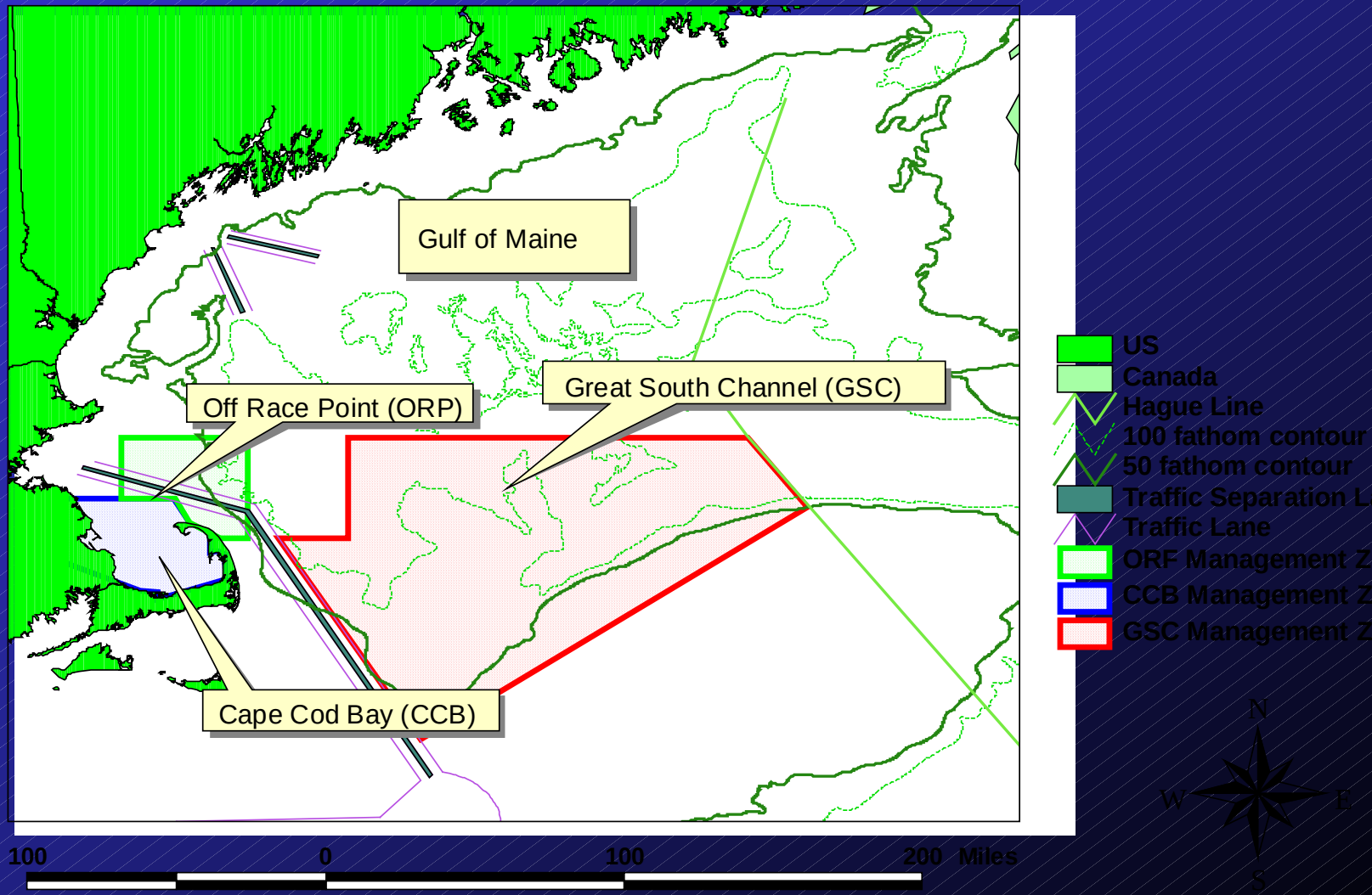
- Time: 1 April – 15 May
- Area: north & east of Cape Cod Bay Critical Habitat (includes part of the Boston Traffic Lanes)

Off Race Point Measures

- **Speed restriction in the zone** OR
- **Route around the zone**
  - Mariner flexibility
  - Predictable (seasonal period specified)

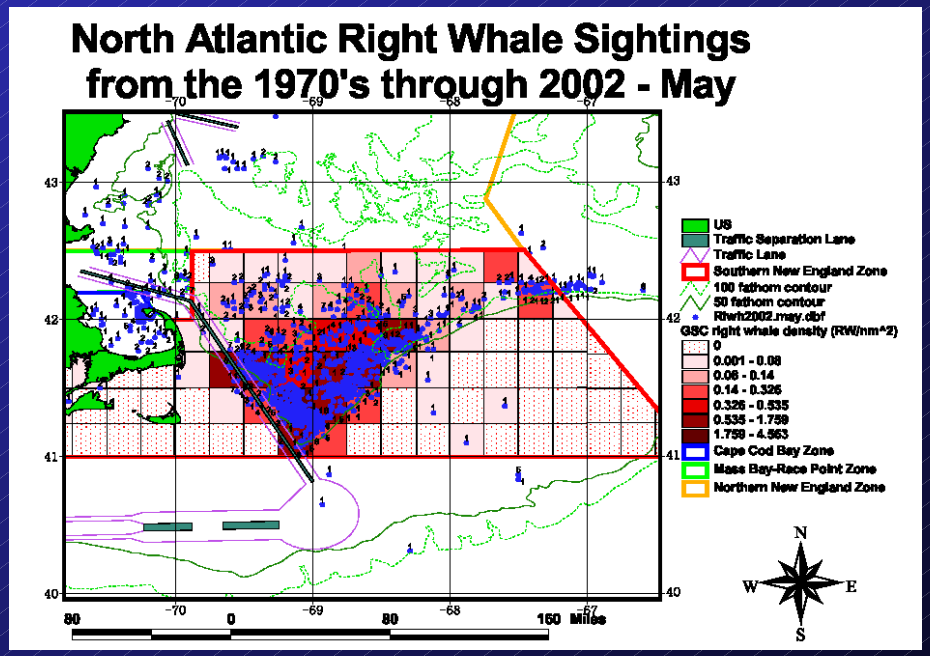
North Atlantic Right Whale Ship Strike Management Zones

Great South Channel (GSC) Zone

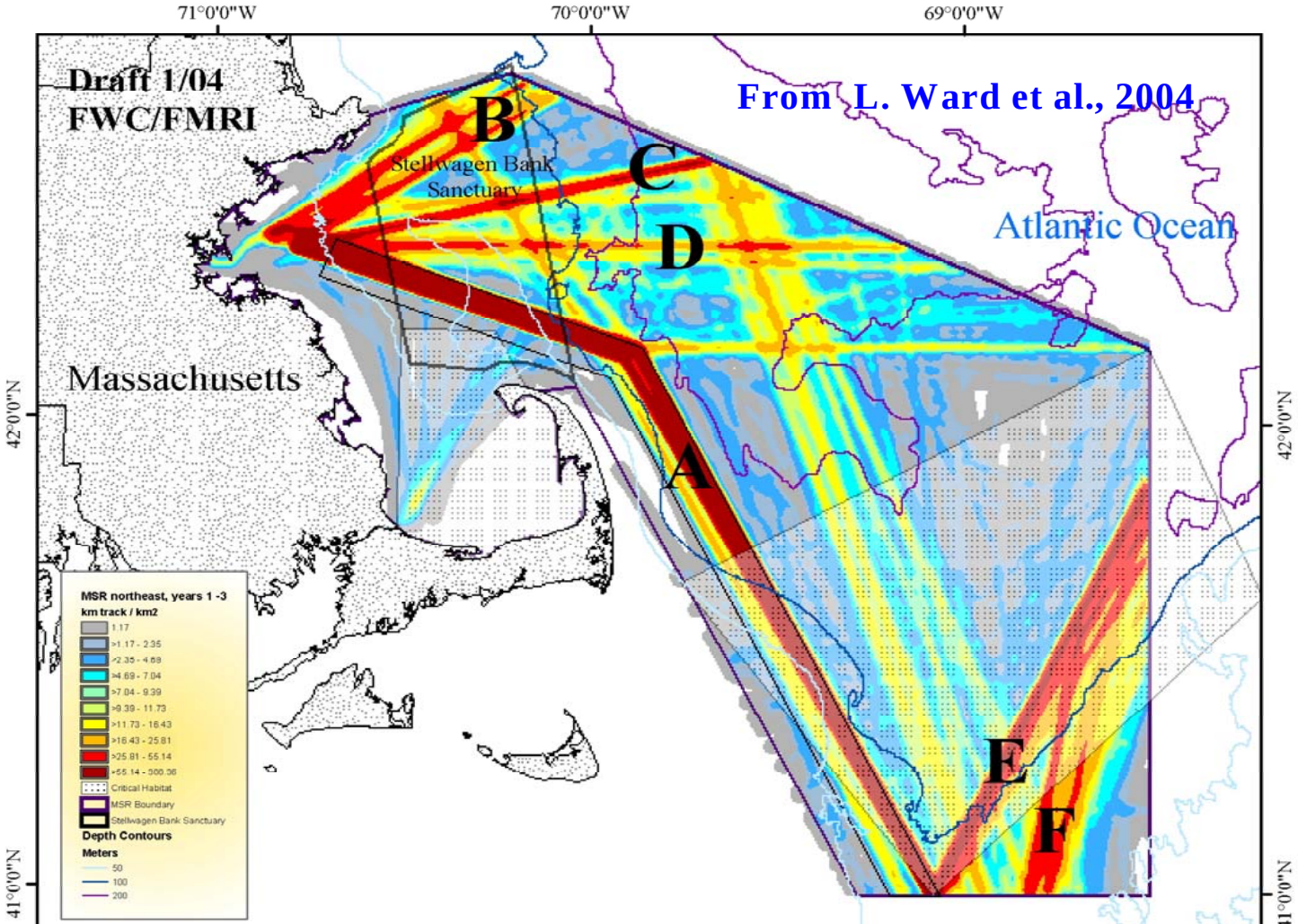


Great South Channel (GSC) Zone

- Whales move eastward in May-July
- Still feeding
- Risk - Boston TSS & both N-S & E-W traffic over GSC & Georges Bank



Mandatory Ship Reporting Data



Right whale with hole in skull observed in GSC in 1995 ; never re-sighted.

Great South Channel Measures

- Time: 1 April – 31 July
- Area: east of the Boston Traffic Lanes, inclusive of the Great South Channel Critical Habitat and part of Georges Bank, out to the Hague Line

Great South Channel Measures

- **Area to be Avoided (ATBA) for vessels $ 300 gross tons**
  - Smaller area to survey (i.e., shipping lanes)
  - Predictable – seasonal period specified

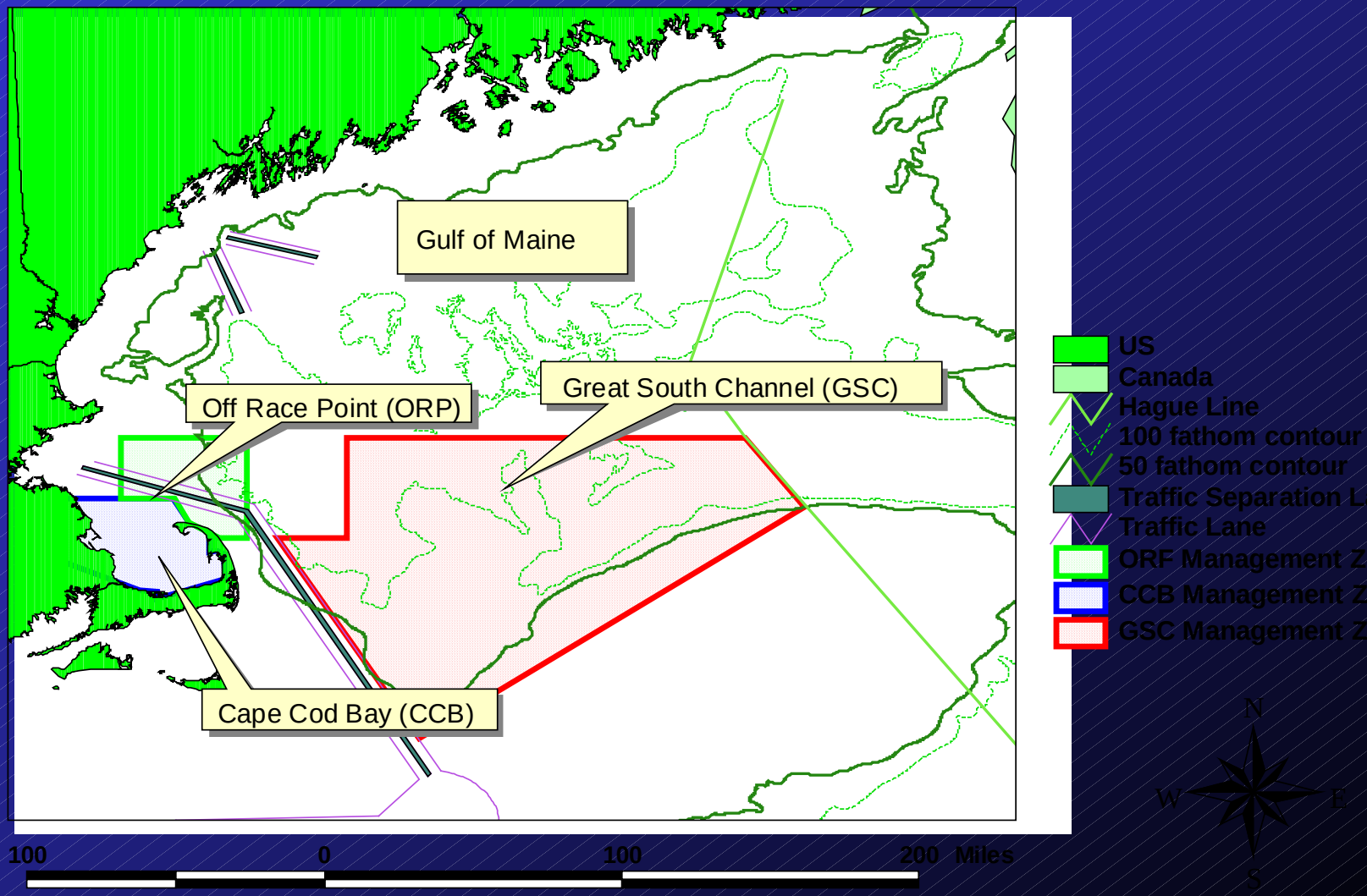
- **Speed restrictions for ATBA for Vessels < 300 gross tons & ≥ 65 ft**
  - Will not preclude vessels ≥ 65 ft & < 300 gross tons (e.g., F/V) from ATBA
    - **operation allowed under speed restrictions**

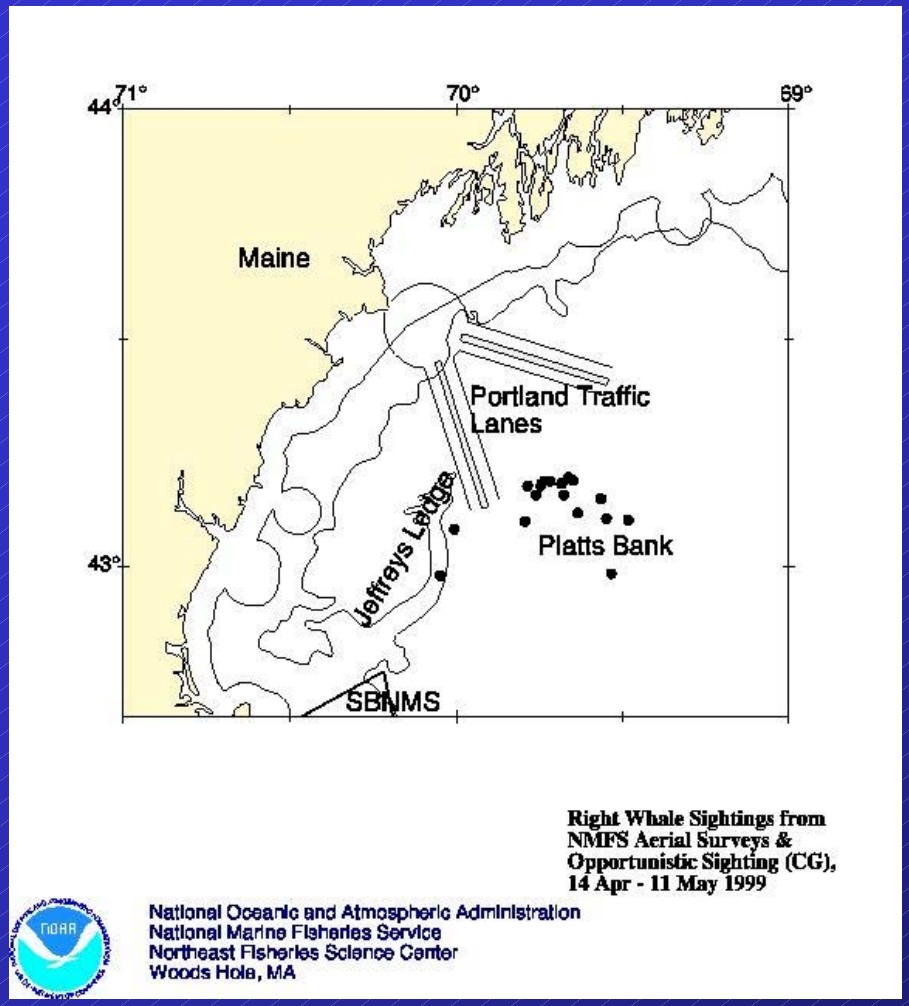
Area To Be Avoided (ATBA)

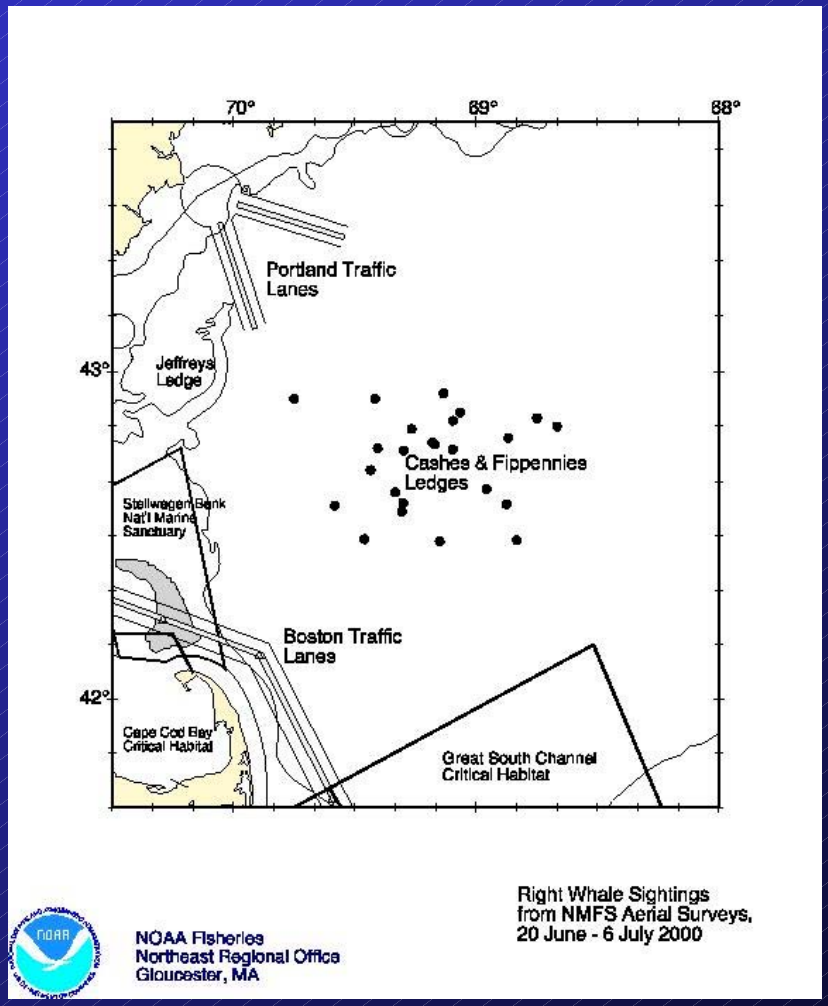
- ATBA –routing measure comprising an area within defined limits which should be avoided by certain classes of ships
- Reduce collision threat to right whales
- Will require IMO approval
- Possible Effects
  - Increase in ships using Boston TSS
  - Ships route around GSC ATBA

North Atlantic Right Whale Ship Strike Management Zones

Gulf of Maine (GOM) Zone







Platts Bank April-May 1999

Cashes Ledge June-July 2000

Mother & calf right whale pair sighted in GOM 2001. Mother had been struck off southeast US earlier in 2001.

Right Whale Use of the Gulf of Maine

- Right whales assumed to be present, at generally low densities, year round in Gulf of Maine waters
- Recent survey data suggest they are present because they are:
  - Feeding (Platts & Cashes)
  - Migrating

Gulf of Maine Measures

- Time: year – round
- Area: area under U.S. jurisdiction north of CCB, Race Point, and GSC management areas

Gulf of Maine Measures

- **Dynamic management areas** (buffer area around whales requiring re-routing or speed reduction)
  - Based on real-time right whale distribution data from surveys
  - Measures may be supplemented as additional data become available
  - Implemented when necessary
  - Mariner flexibility – option to slow or route around area

NE Waters - Summary

- Four management zones (Maine to Cape Cod)
  - CCB – Seasonal no entry zone with designated routes (Boston & north, Provincetown)
  - ORP – Seasonal routing or speed restriction
  - GSC – Seasonal ATBA for large ships and speed restrictions for smaller ships
  - GOM – Dynamic management area(s)

Whale Avoidance/Ship Strike Reduction Web Site

http:/www.nero.noaa.gov/shipstrike