

ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS

Amendment of the Traffic Separation Scheme “In the Approach to Boston, Massachusetts”

Submitted by the United States

SUMMARY

Executive summary:	This document sets forth a proposal to amend the IMO-adopted traffic separation scheme in the approach to Boston, Massachusetts for consideration and approval, and forwarding to the Maritime Safety Committee for adoption. The objective of this proposed amendment is to make changes to the Boston TSS that should result in a significant reduction in the likelihood of ship strike deaths and serious injuries to right and other whales, while maintaining and improving maritime safety.
Action to be taken:	Paragraph 14.
Related documents:	General Provisions on Ships' Routeing, Eighth Edition, Regulation 10 of Chapter V of the International Convention on the Safety of Life at Sea, MSC 76/23, MSC 70(23), MSC 43(64), MSC 69/Inf. 21, MEPC 40/Inf. 9, NAV 48/3/5, NAV 47/Inf. 2, NAV 44/3/1, NAV 27/3/2, NAV XIV/2(c)/3.

Introduction

1. The United States proposes to amend the traffic separation scheme in the approach to Boston, Massachusetts (Boston TSS or TSS) as set forth in Annex 1. A chartlet of this proposed amendment is attached to Annex 1. The International Maritime Organization originally adopted this TSS in 1973. It was amended in 1983 to include a precautionary area at its seaward terminus to connect it to the TSS, “Off New York”. The Boston TSS includes two precautionary areas; a mile wide separation zone; and two traffic lanes, one on each side of the separation zone. Each traffic lane is two miles wide.

Background

2. North Atlantic right whales are one of the world’s most endangered large whale species. Ship collisions are the greatest known source of human-related mortality of this whale and are a significant obstacle to the recovery of this species. Right whale population growth rate has declined since 1980 and the population is now estimated at 300 animals. During a 16 month period from February 2004 to April 2005, at least four adult females—three of which were

carrying near-term fetuses—were killed by ship strikes. The loss of these reproductive females is significant, particularly because two of them were at the beginning of their calf-bearing years. The actual number of right whale deaths resulting from ship strikes is almost certainly higher because many deaths go unrecorded and the cause of death undetermined as carcasses drift out to sea.

3. The North Atlantic right whale is primarily a coastal species and occurs seasonally in five high use areas -- three off the eastern United States and two off southeastern Canada. Each area lies in or adjacent to major vessel traffic corridors. Cape Cod Bay has been designated under U.S. law as habitat critical for the survival of right whales. During January through mid-May, the animals are located at relatively high densities mostly within Cape Cod Bay, although sightings also exist outside the Bay, particularly in Massachusetts Bay and Stellwagen Bank National Marine Sanctuary. The whales begin moving out of Cape Cod Bay in March through April, crossing through the TSS en route to feeding areas in the Great South Channel.

4. Since the establishment of the TSS in 1973, extensive research on marine mammals has been conducted that demonstrates and supports the need for amending the TSS to help protect the right whale from collisions with ships. This research shows that there is a significant overlap between the areas where right and other whales commonly occur in high densities and the existing TSS. Annex 2 contains a density map of right whales relative to the existing and proposed TSS. The ecological basis for this result appears to be that the water circulation patterns concentrate right whale forage (i.e., zooplankton) in the TSS and to the south of the TSS. Annex 3 is a density map of other large whales, including the endangered humpback and fin whale, relative to the existing and proposed TSS. Again, there is an area that exists to the north of the existing TSS where the density of all whales is substantially reduced. The ecological basis for the lower density of these other whales is primarily due to the difference in the substrate of this area. In the substrate under the TSS, there is a large percentage of sand, which supports the preferred forage species of these whales. Comparatively, the substrate under the proposed reconfiguration of the TSS has a much lower percentage of sand and a greater percentage of gravel. This difference in substrate results in significantly fewer animals being present in the area of the proposed TSS.

5. A significant number of consultations with regard to the issue of ship strikes of right whales in general, and the proposed amendment of the TSS in particular, have been undertaken with representatives from the shipping industry, master mariners, the Massachusetts Port Authority, harbor pilots, environmental interests, marine mammal researchers, and representatives from federal, state, and local governments. These stakeholders' concerns were carefully considered and taken into account in the development of this proposal, including the costs and benefits to the industry and the protection of right whales. The resulting proposal specifically took into account the burden on, and practical navigation aspects for, the shipping industry.

Traffic considerations

6. There are approximately 1000 seagoing ships that call on the port of Boston annually, including bulk carriers, container ships, passenger vessels, barges, cargo ships, and tankers. The TSS was established to facilitate the movement of these ships into and out of Boston Harbor.

Ships may use the TSS when entering and departing port. The TSS is recommended for use by all seagoing vessels, but is not necessarily intended for use by tugs, tows, or other small vessels that traditionally operate outside the usual steamer lanes or close to the shoreline. It is composed of a continuous inbound and outbound traffic lane and separation zone, with one course alteration east of the northern tip of Cape Cod.

7. The proposed TSS amendment is supported by adequate hydrographic surveys and charts of the area and appropriate aids to navigation are in place. There is also complete differential GPS coverage and LORAN-C coverage. With respect to environmental conditions, the weather in the Boston area is variable. Fog is prevalent throughout the year and ice rarely forms in the main shipping channel.

Proposal

8. There are two components to the proposed amendment. The first component consists of a rotation of the east-west leg of the TSS, approximately 12 degrees to the north, and a corresponding lengthening of the north-south portion of the TSS to take into account this adjustment. As depicted in the chartlet attached to Annex 1, the proposed amendment would result in a similar turning angle to that in the existing TSS and no additional turns or changes. Similarly, there is no change being proposed for the two precautionary areas associated with the TSS or for the types of ships that are recommended to use it. This proposed amendment would move the traffic lanes into an area with a substantially lower density of right and other whales, while maintaining or even increasing maritime safety and having a minimal impact on transiting ships.

9. The second component of the proposed amendment would narrow each of the east-west lanes of the TSS from two miles to one and a half miles in width; however, the separation zone between the two lanes would remain unchanged at its current one mile width. There are several reasons that support this approach. First, narrowing the lanes reduces the overlap between right whales and ships, thus resulting in a substantial decrease in the risk of a ship strike. Second, there are no adverse implications for maritime safety, because ships' navigational capabilities have become much more refined since this TSS was established. Moreover, nothing in the historical records indicate that these lanes must remain at their current width. Finally, the United States has compared the proposed width of these lanes with the width of other TSS lanes globally and the proposed width is consistent with other TSSs approved by this Subcommittee.

10. The burden imposed on shipping by this proposed amendment is minimal while the benefits for right whale protection are significant. The proposed changes will increase the length of the TSS by approximately 3.75 nautical miles and, depending on the type of vessels and the speed at which they travel, result in an increase in time of approximately 10-22 minutes. Based on extensive studies of the right whale population, biologists estimate that if ships follow the proposed TSS, there would potentially be a significant reduction in the risk of ship strikes of right whales of up to 58%. As an aside, there would also be a potential decrease in the risk of ship strikes of other large whales of up to 81%. Annex 4 contains a density map that shows the location of right and other whales in the area of the proposed amended TSS.

11. Maritime safety considerations have been carefully taken into account in the development of this proposal. Safety should actually be improved through the implementation of the proposed changes, because there are fewer fishing and whale watching vessels operating in the area of the proposed changes than in the existing TSS and therefore the risk of collision is reduced. Maritime safety should also increase because of a decrease in the potential for any damage to a ship from hitting a large whale and also, if there is a decrease in ship encounters with whales, there will be a decreased chance that there may be collisions between a ship taking avoidance action and another vessel.

Additional Actions Taken by the United States

12. The United States has taken a number of steps to identify and implement measures to reduce ship strikes of right whales. One important action was a proposal adopted by IMO to establish two mandatory ship reporting systems (MSRs) which educate mariners about the threat of ship strikes and provide them with the last known location of right whales.

13. Other steps that have been taken include the examination and identification of relevant information and management options. These options have formed the basis for the development of a Right Whale Ship Strike Reduction Strategy, which addresses such issues as research and development of technology, a merchant mariner education and outreach program, and targeted operational measures. Guidelines for measures mariners may take to avoid right whales are now being published in admiralty publications such as U.S. Coast Pilots, Notices to Mariners, and Sailing Directions. Information brochures and placards are also being distributed to mariners. A combination of periodic aerial and vessel surveys are conducted seasonally to attempt to locate right whales so that this information can be provided through various telecommunication networks to mariners operating in the vicinity of whales. These surveys unfortunately locate only a small percentage of the whales, information from surveys remains valid only for a short time because the whales move, and the surveys cannot be conducted at night or in poor weather. Despite these limitations, the surveys are the best means currently available for detecting the location of the whales and thus provide valuable information to mariners.

Action Requested of the Sub-Committee

14. The Sub-committee is requested to approve the proposed amendment to the TSS in the Approach to Boston, Massachusetts as set forth in Annex 1 and forward the proposal to the Maritime Safety Committee for adoption. The United States requests that the effective date of implementation would be six months after adoption.

ANNEX 1

IN THE APPROACH TO BOSTON, MASSACHUSETTS

(Reference charts: United States 13009, 2004 edition; 13200, 2005 edition; 13246, 2003 edition; 13267, 2004 edition. *Note:* These charts are based on North American 1983 Datum.)

Description of the traffic separation scheme

(a) A separation zone, one mile wide, is centered upon the following geographic positions:

- | | | | |
|-----------------|--------------|-----------------|--------------|
| (1) 42°20'.84 N | 070°40'.70 W | (3) 40°49'.16 N | 068°59'.97 W |
| (2) 42°18'.24 N | 070°00'.40 W | | |

(b) A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

- | | | | |
|-----------------|--------------|-----------------|--------------|
| (4) 40°50'.27 N | 068°56'.97 W | (6) 42°22'.81 N | 070°40'.22 W |
| (5) 42°20'.08 N | 069°57'.92 W | | |

(c) A traffic lane for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

- | | | | |
|-----------------|--------------|-----------------|--------------|
| (7) 42°18'.95 N | 070°42'.52 W | (9) 40°48'.03 N | 069°02'.96 W |
| (8) 42°16'.39 N | 070°02'.88 W | | |

Precautionary areas

(a) A precautionary area of radius five miles is centered upon geographical position 42°22'.71 N, 070°46'.97 W.

(b) A precautionary area is bounded to the east by a circle of radius 15.5 miles, centered upon geographical position 40°35'.01 N, 068°59'.97 W, intersected by the traffic separation schemes "In the approach to Boston, Massachusetts" and "Eastern Approach, Off Nantucket" (part II of the traffic separation scheme "Off New York") at the following geographical positions:

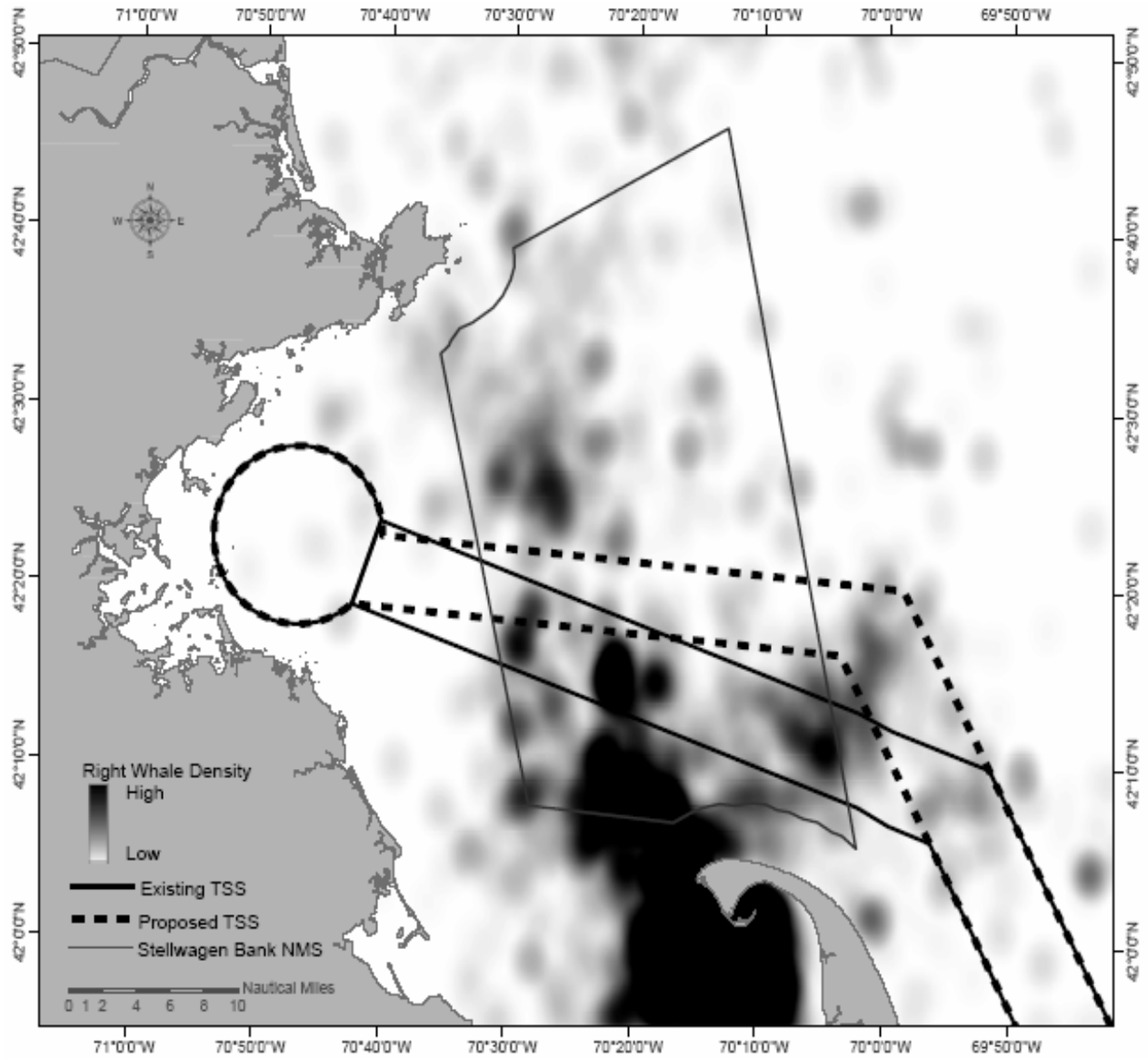
- | | | | |
|-----------------|--------------|------------------|--------------|
| (4) 40°50'.27 N | 068°56'.97 W | (11) 40°23'.75 N | 069°13'.95 W |
|-----------------|--------------|------------------|--------------|

The precautionary area is bounded to the west by a line connecting the two traffic separation schemes between the following geographical positions:

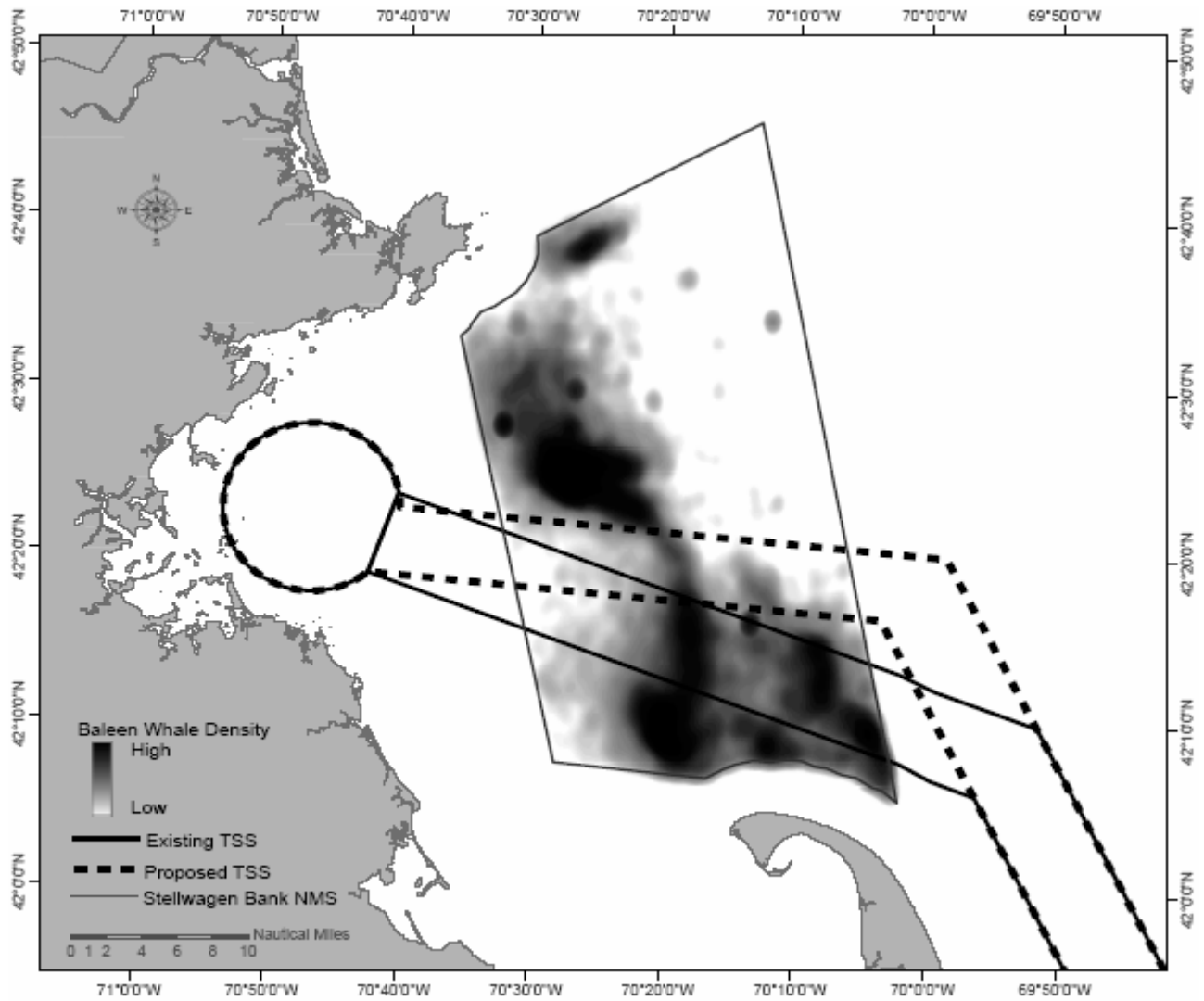
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|-----------------|--------------|------------------|--------------|
| (9) 40°48'.03 N | 069°02'.96 W | (10) 40°36'.76 N | 069°15'.13 W |
|-----------------|--------------|------------------|--------------|

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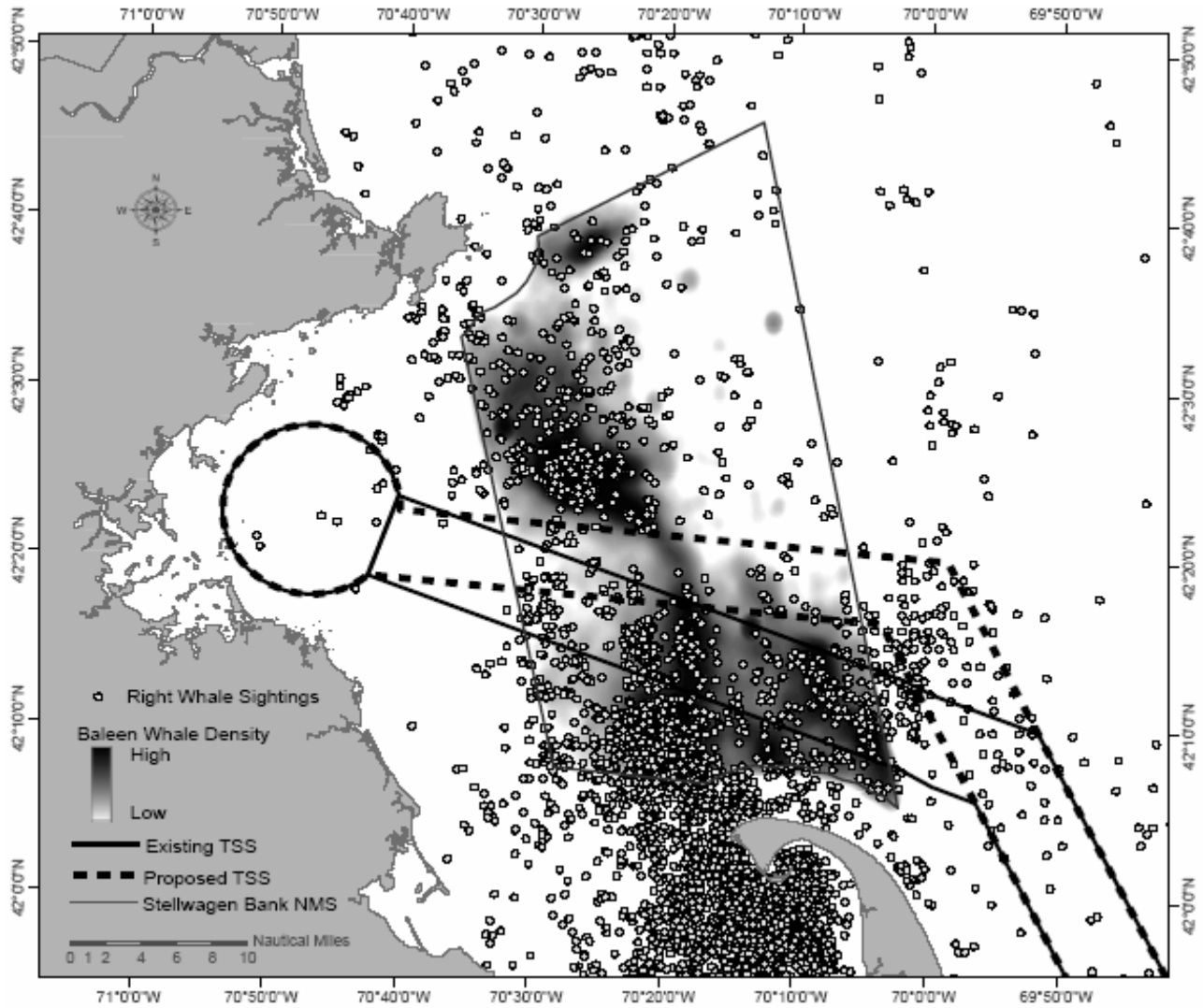
ANNEX 1
CHARTLET



Annex 2. The distribution and density of right whales relative to the existing and proposed traffic separation scheme in the approach to Boston, Massachusetts.



Annex 3. The distribution and density of baleen whales relative to the existing and proposed traffic separation scheme in the approach to Boston, Massachusetts.



Annex 4. The distribution and density of baleen whales, with a focus on right whale sightings, relative to the existing and proposed traffic separation scheme in the approach to Boston, Massachusetts.