

Application of Marine Planning to Support Protection of Living Marine Resources in Northeast USA Waters

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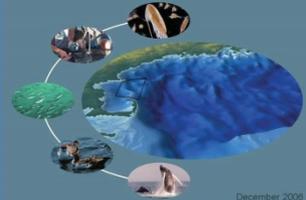
Dr. David N. Wiley, Office of National Marine Sanctuaries

National Ocean Service

National Oceanic & Atmospheric Administration



National Ocean Service
National Centers for Coastal Ocean Science



December 2008

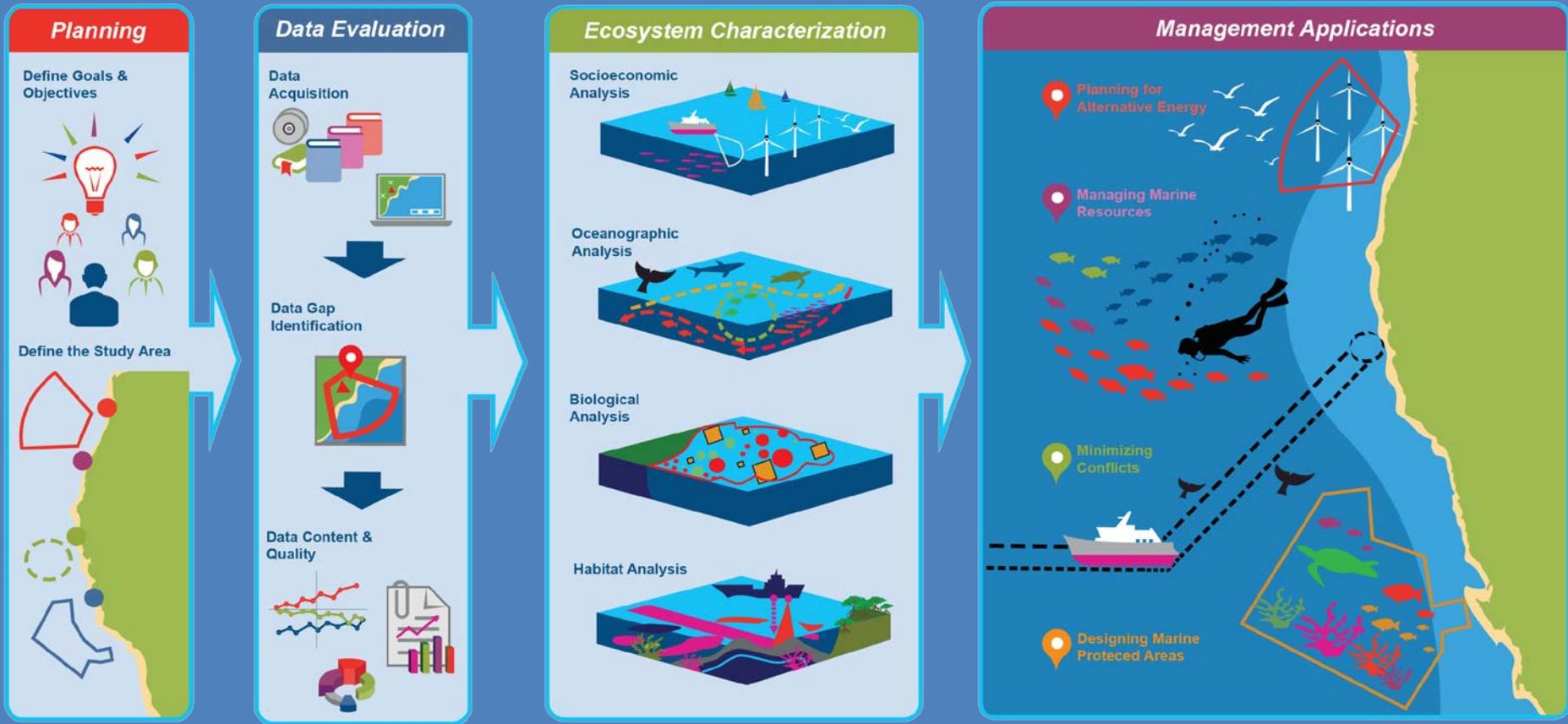
Prepared for the National Marine Sanctuary Program
and Stellwagen Bank National Marine Sanctuary

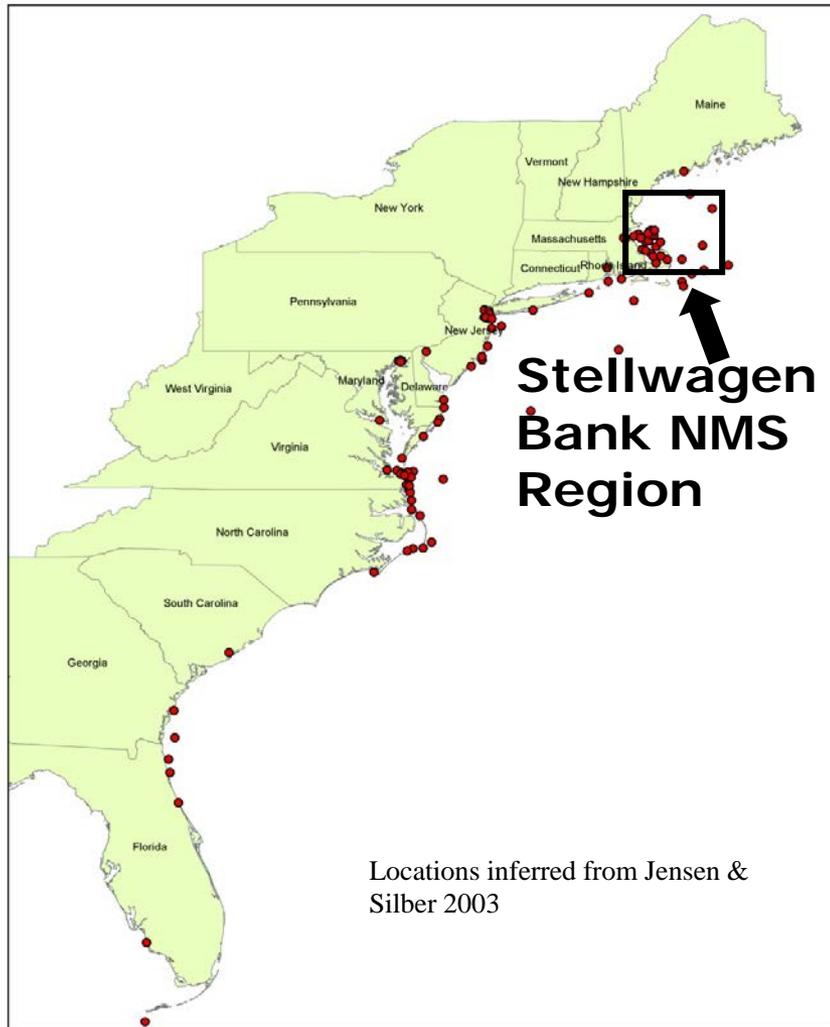
NOAA Technical Memorandum NCCOS 45

Editor
Tim Sutton (NCCOS)
Betsy Cook (NCCOS)
Small Print (NCCOS)



Biogeographic Assessments: A Framework for Information Synthesis in Marine Spatial Planning to Support EBM





Ship Collisions with Whales: Balancing Marine Transportation & Conservation Objectives

Approximate
Distribution of Ship
Struck Baleen
Whales along the
USA Eastern Coast



Vessel Traffic Patterns

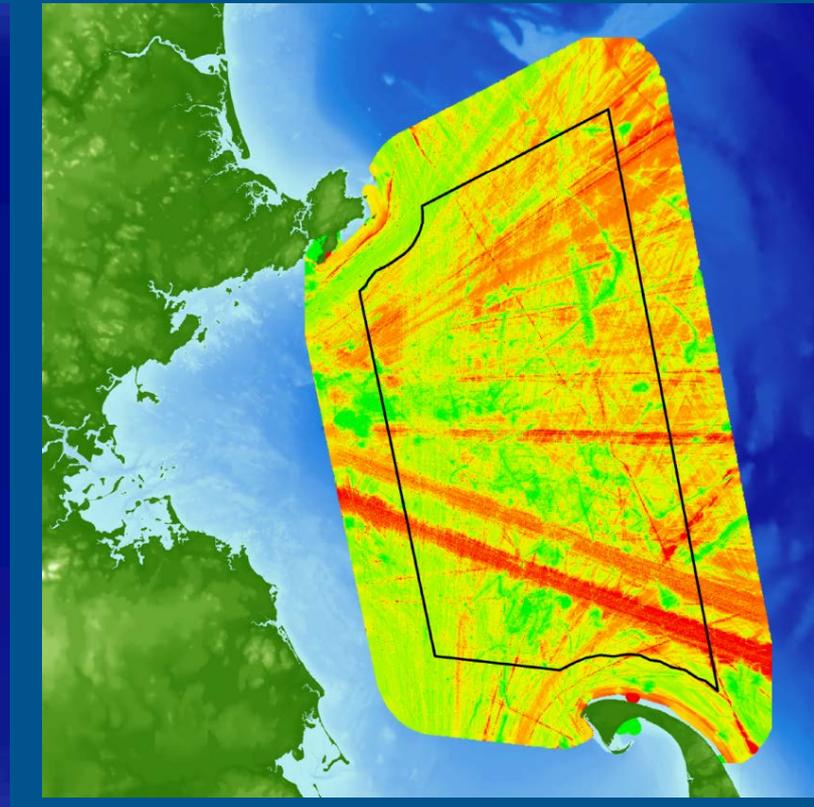
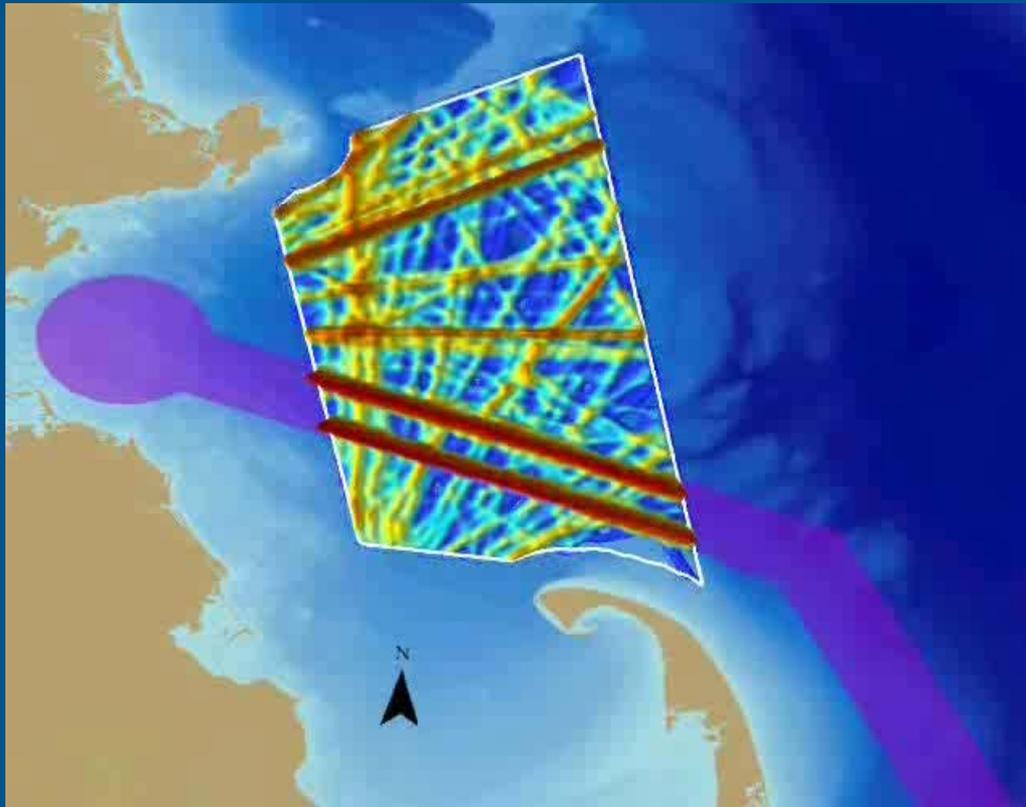


Fast

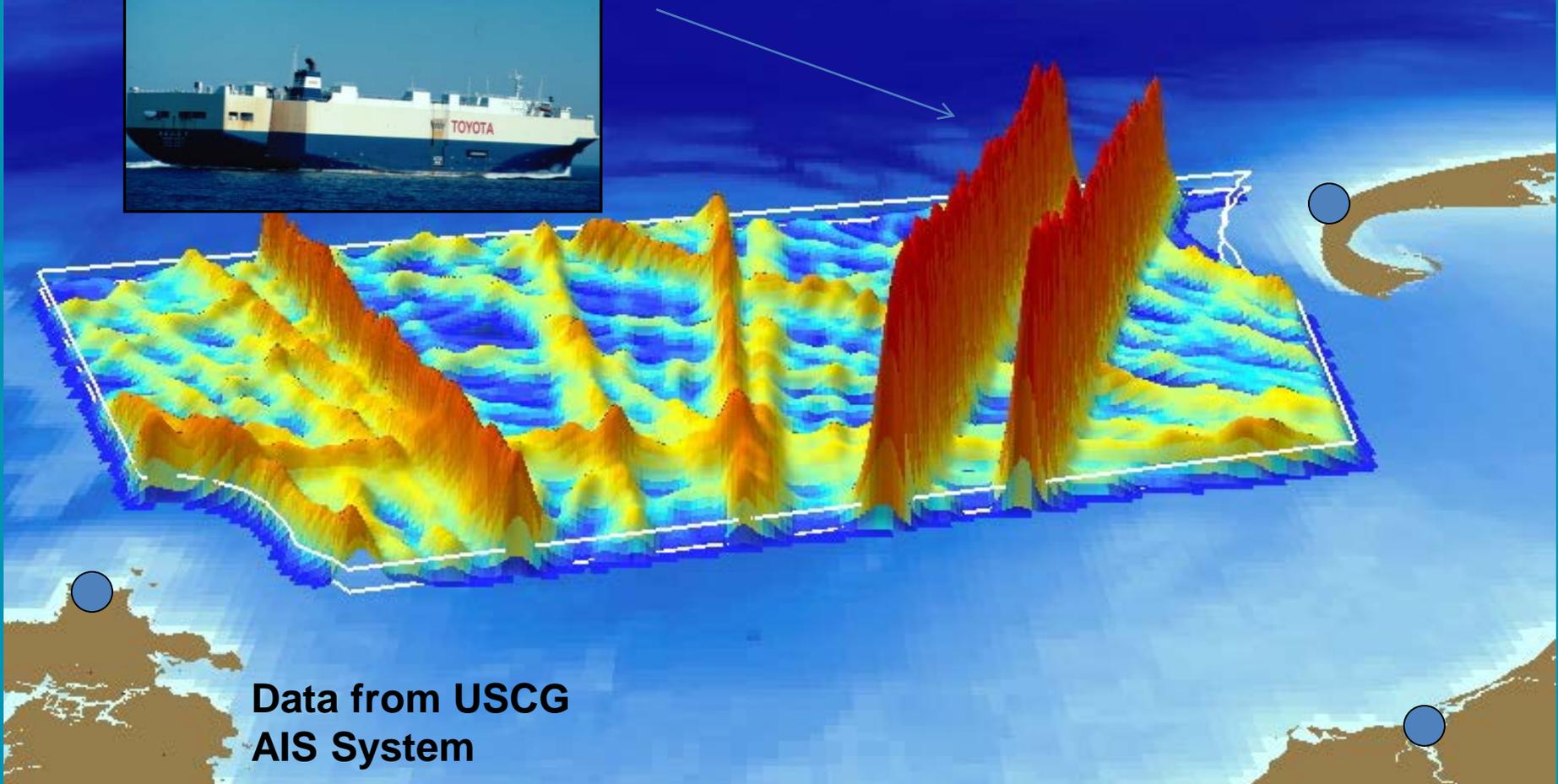
Slow

AIS Point Density (~Vessel Use)

AIS Point Speed

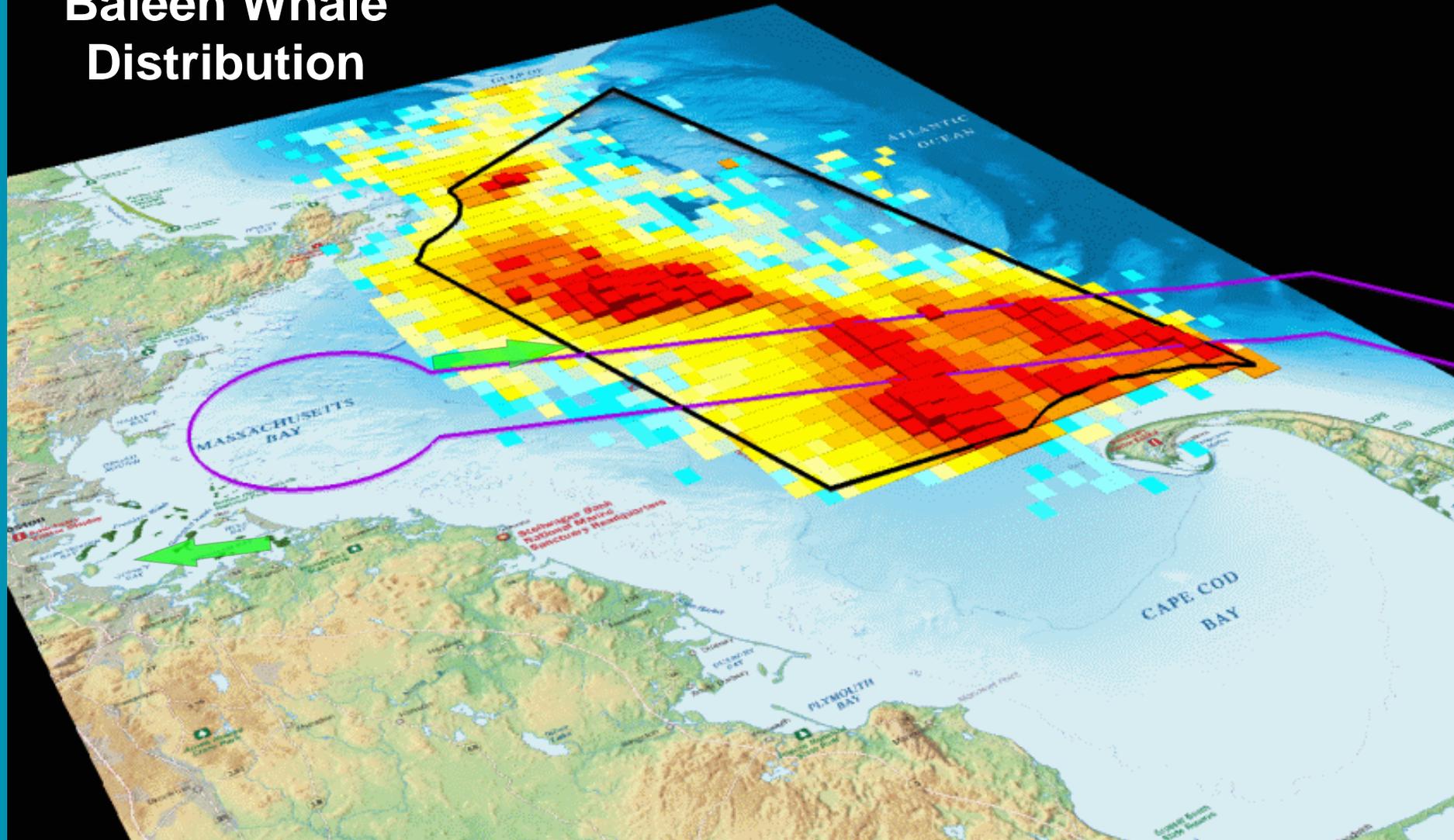


Vast majority of ships in shipping lanes (TSS)



Data from USCG
AIS System

Baleen Whale Distribution



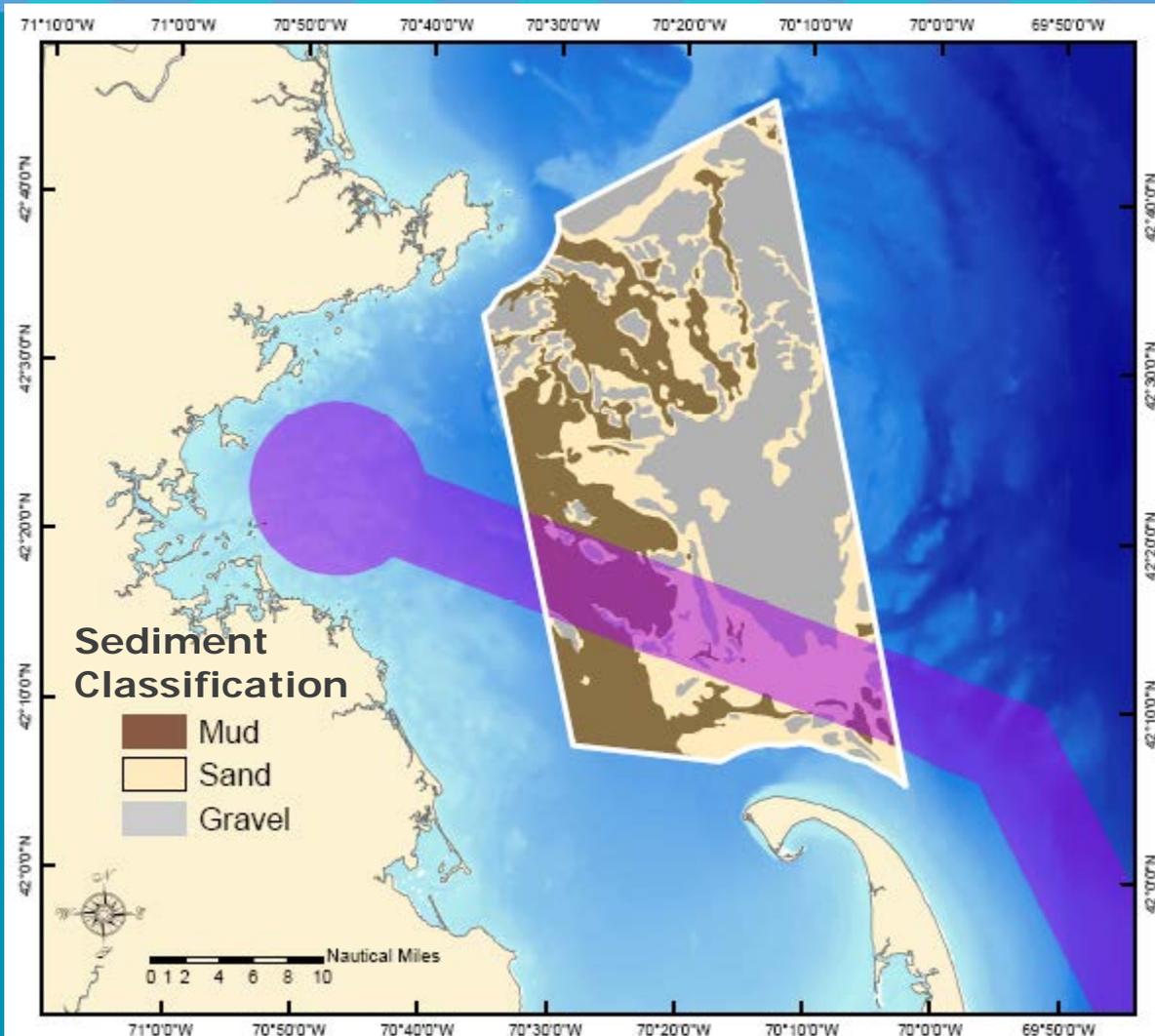
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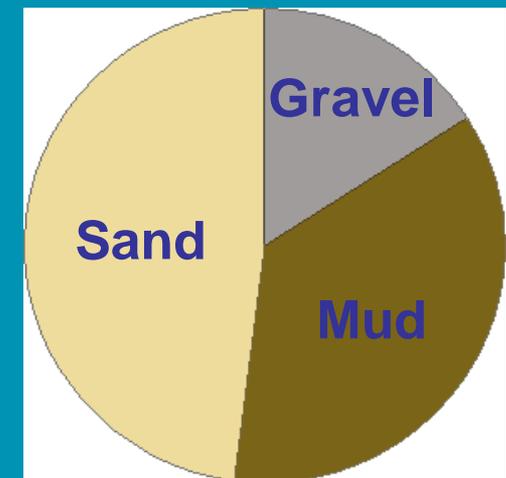
IFAW



NATIONAL MARINE
SANCTUARIES



36%  Mud
48%  Sand
16%  Gravel



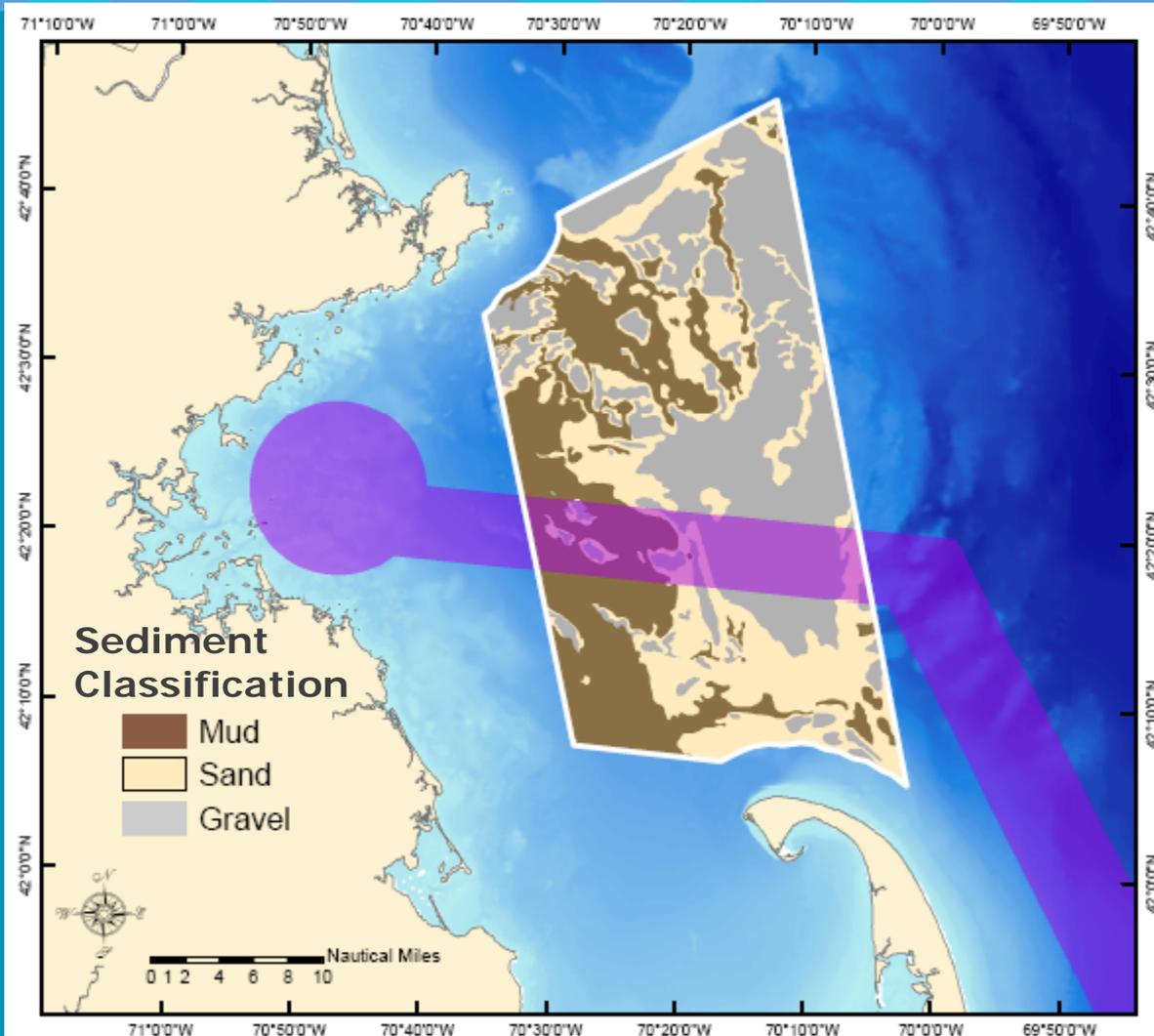
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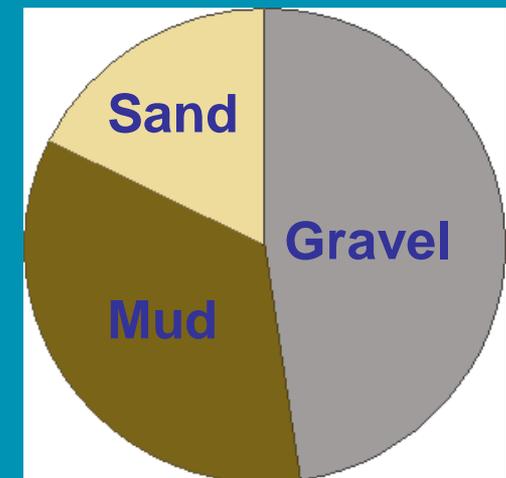
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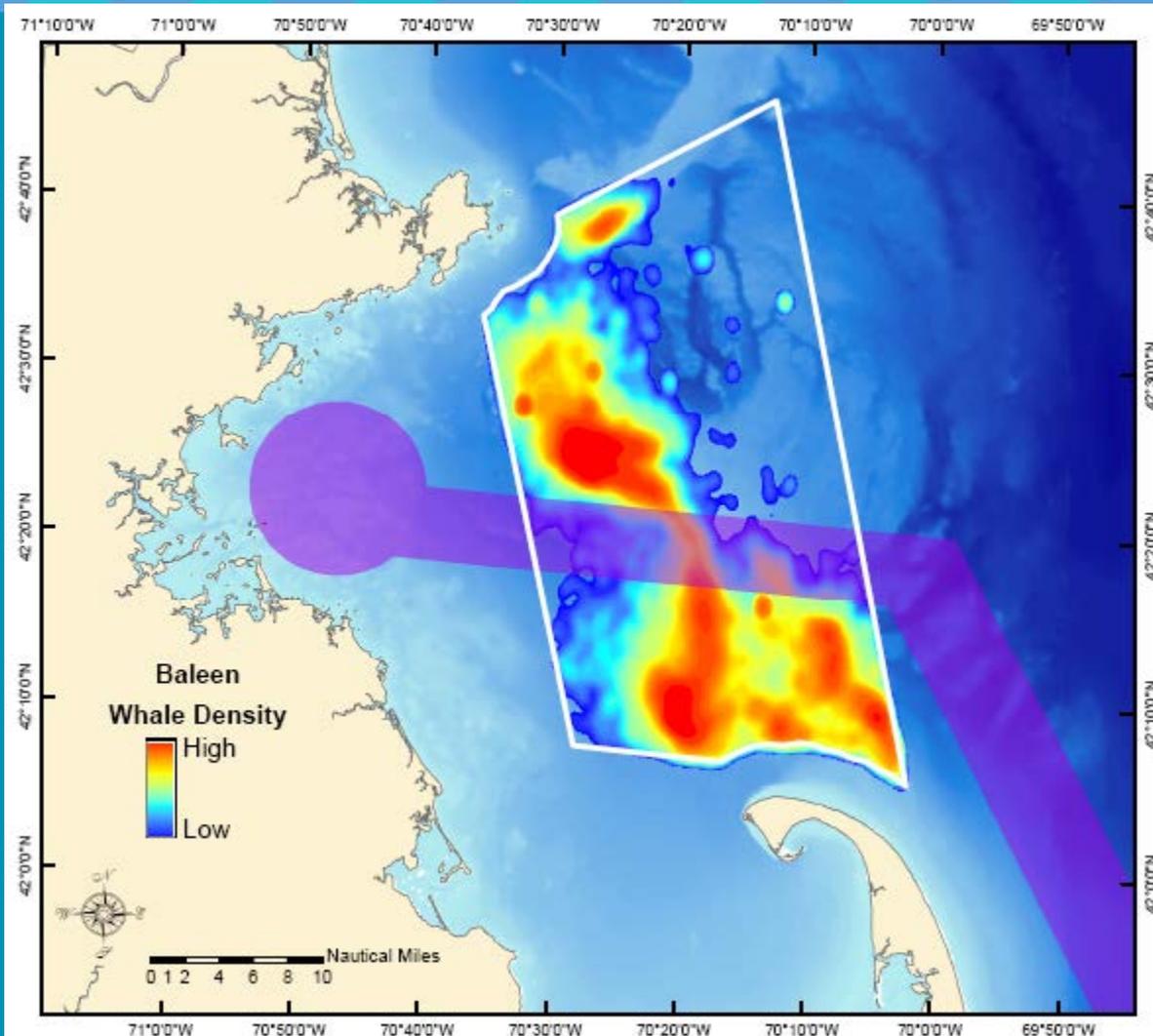


NATIONAL MARINE
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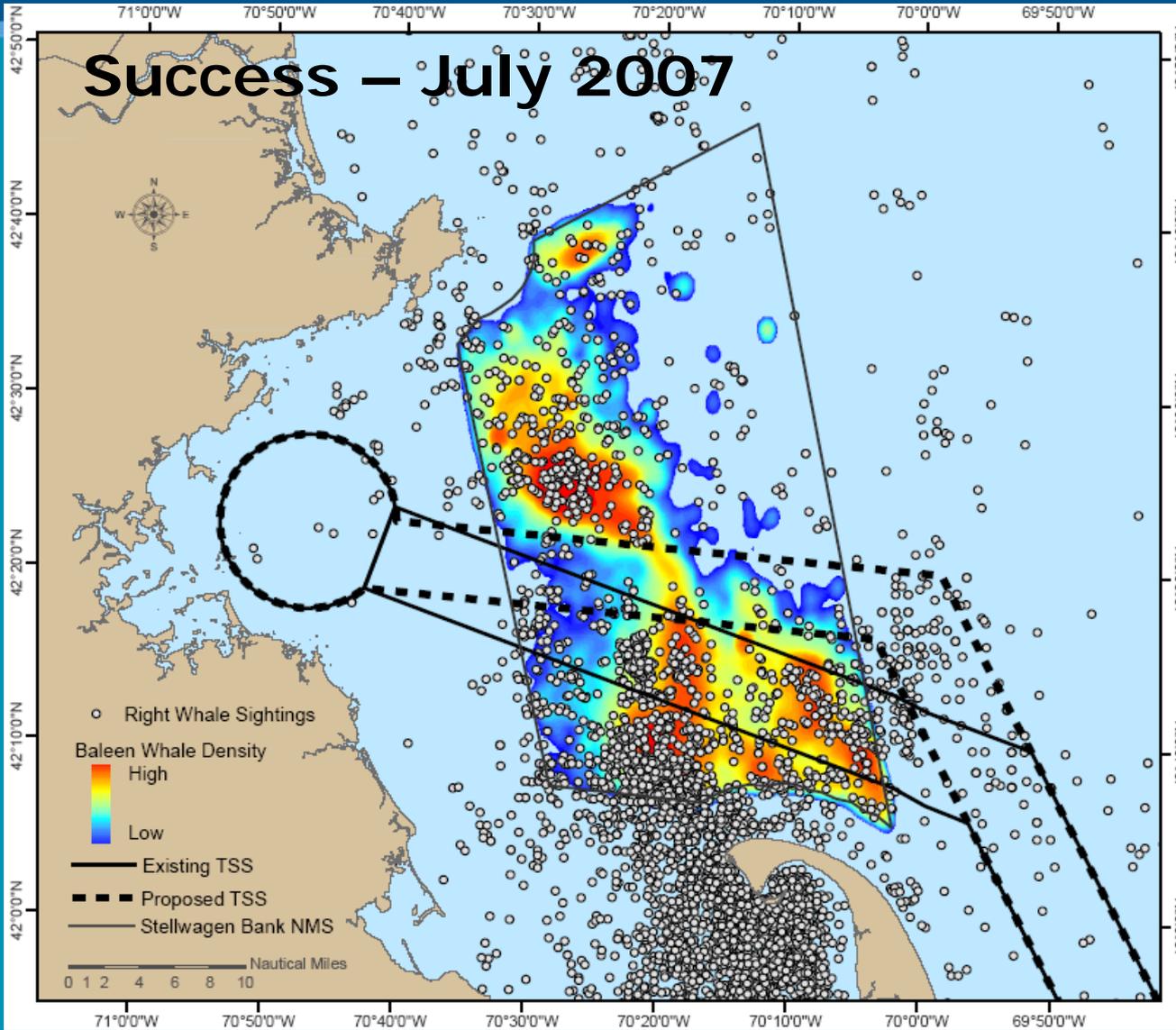




Red = highest whale density
Blue = lowest whale density

**Redirecting
marine traffic
through low
use area = 81%
reduction in
collision risk**

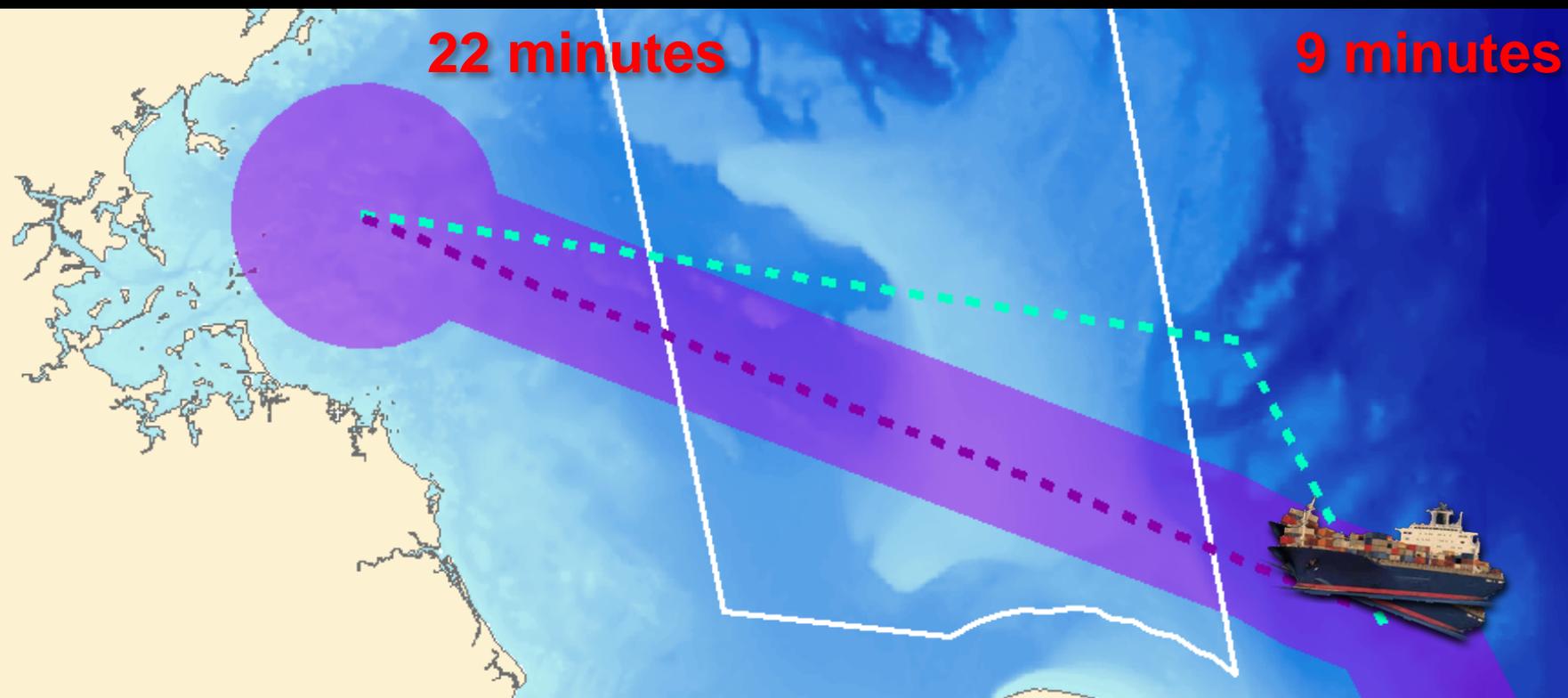
Success – July 2007



- NOAA Office of Protected Resources
- NOAA Northeast Fisheries Science Center
- NOAA General Counsel for International Law
- Right Whale Consortium
- Massachusetts Port Authority
- Shipping Industry
- USCG
- IMO

Transit Time Impact

Lane	Nautical Miles	Change (nm)	10 knots		15 knots		20 knots		25 knots	
			Hours	Change (hours)	Hours	Change (hours)	Hours	Change (hours)	Hours	Change (hours)
Existing TSS	42.25		4 hrs. 14 min.		2 hrs. 49 min.		2 hrs. 7 min.		1 hr. 41 min.	
Proposed TSS	46.00	3.75	4 hrs. 36 min.	22 minutes	3 hrs. 4 min.	15 minutes	2 hrs. 18 min.	11 minutes	1 hr. 50 min.	9 minutes



Key Challenges & Lessons Learned for Marine Planning to Support EBM

Challenges:

- Balancing Multi Sector & Governmental Objectives & Policies
- Balancing Economic & Conservation Objectives for Optimum Solutions
- Resistance to Change and Length of Time to Implement Decisions
- Need to Identify Resources for Monitoring Post Administrative/Regulatory Changes to Facilitate Adaptive Ecosystem Based Management

Lessons Learned:

- Need Stakeholders (e.g., industry, managers) at Start of Process to “Trust the Data”
- Scientific Information Collected/Analyzed in Conjunction with Stakeholders
- Clear Presentation & Visualization of Information
- Marine Planning Critical to Spatial Allocation of Marine Resources to Advance EBM

