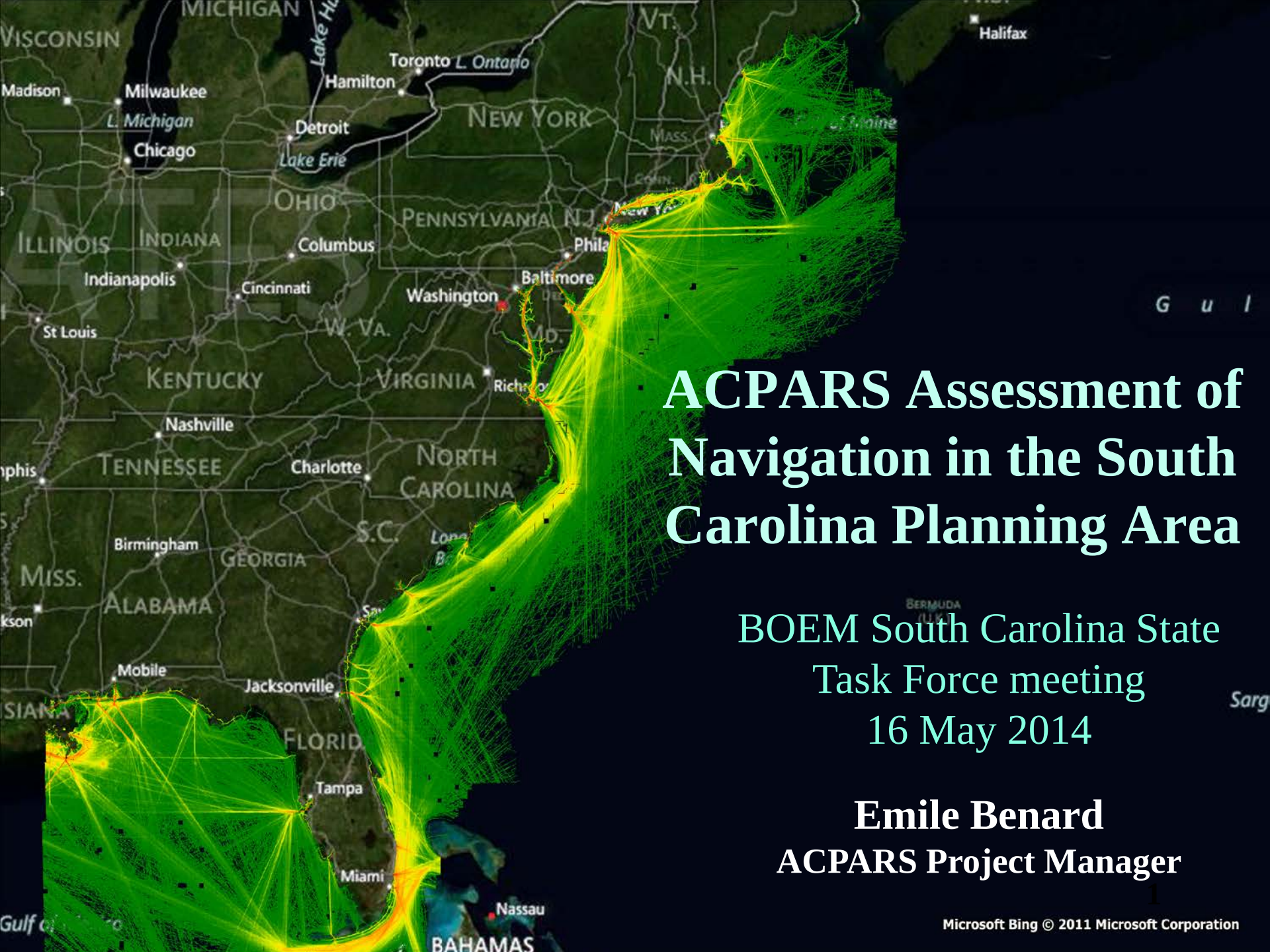


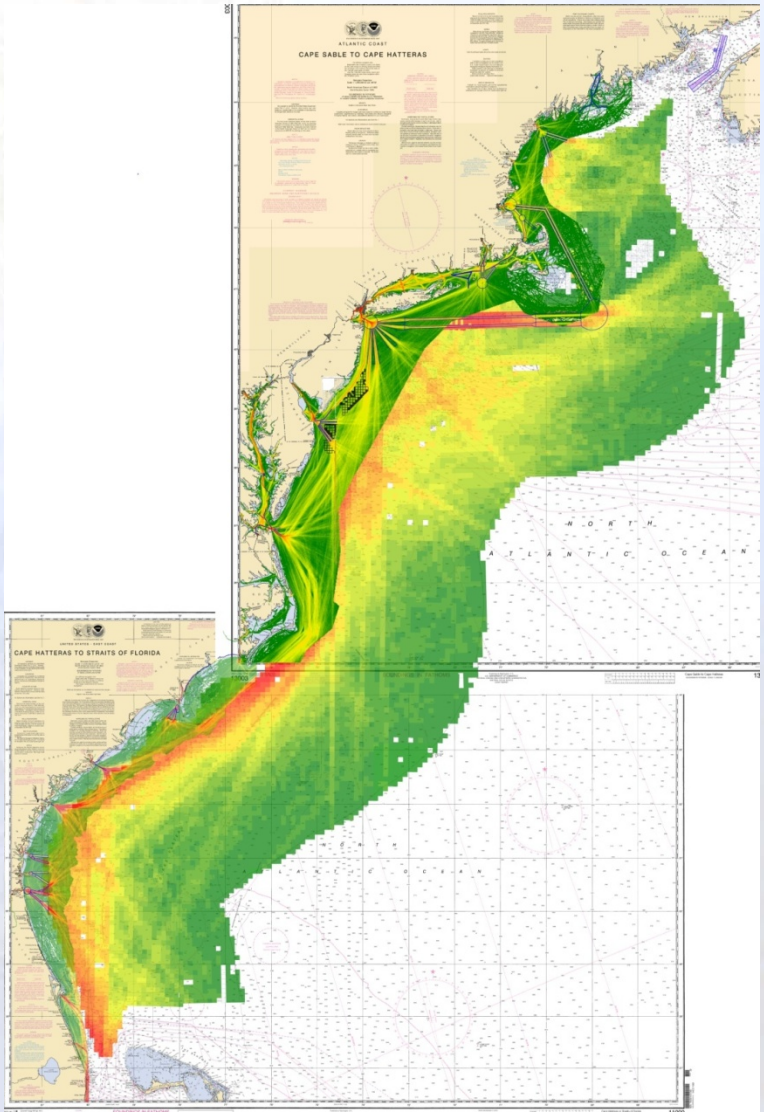
ACPARS Assessment of Navigation in the South Carolina Planning Area

BOEM South Carolina State Task Force meeting
16 May 2014

Emile Benard
ACPARS Project Manager

Atlantic Coast Port Access Route Study

- Marine Spatial Planning
  - Characterize existing MTS/Shipping Routes
  - Balance multiple uses
  - Ensure safe access routes
- Wind Energy Initiatives
  - Cooperating Agency
  - Navigational Conflicts
  - Cumulative Impacts



ACPARS Workshop
Questions/Concerns Raised

- Are routing measures necessary to preserve shipping routes?
  - Ports and Waterways Safety Act 1972
    - Secretary shall designate necessary fairways and traffic separation schemes…such designation shall recognize…the paramount right of navigation over all other uses.
  - Energy Policy Act 2005-
    - BOEM is required to consult with Coast Guard
    - Required to "consider" existing and potential uses.
    - Is AIS data sufficient to prove "existing use"?

ACPARS Workgroup

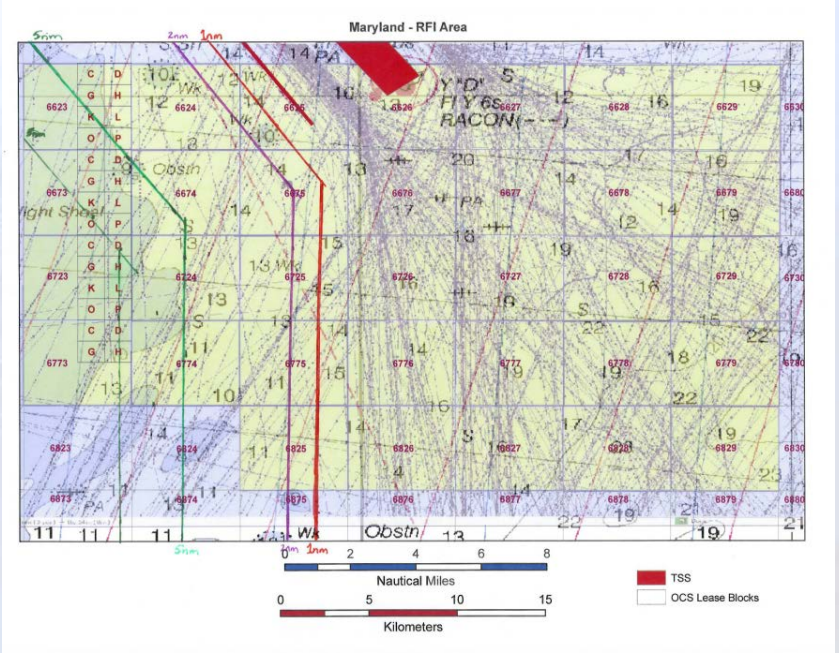
- Develop, in the near term, AIS products and provide other support as necessary to assist Districts with all emerging coastal and offshore energy projects
- Provide data, tools and/or methodology to assist in future determinations of waterways suitability for proposed projects
- Determine whether to modify or create Routing measures

Phase 1- Data Gathering

Determine Shipping Routes-AIS data	• AIS- Primary source of vessel transit data • GIS Products- Heat Maps, Density Plots, Trackline plots • Capability and Capacity shortfalls
Public Comments	• Two Public Comment periods • Received 128 submissions total • 40% outside scope
Outreach	• Sector- port level meetings • Industry Organizations • Targeted outreach
Gather MTS Data	• Importance of the MTS • MARAD Marine Highways Program • Panama Canal Expansion • Energy Development

Phase 2- R-Y-G Methodology

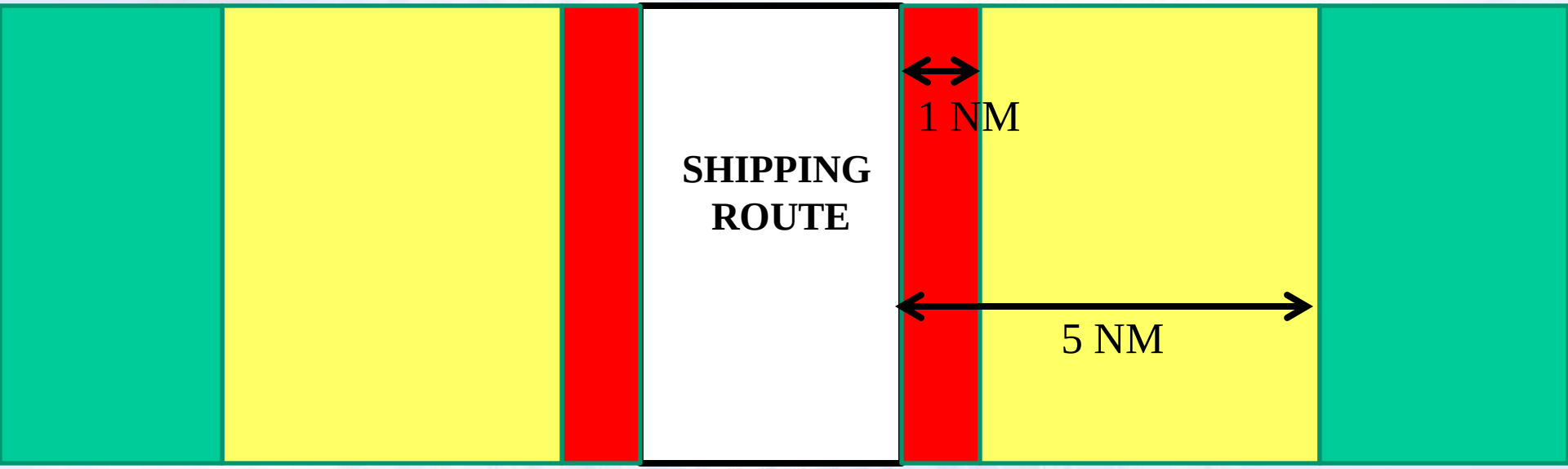
- Deliverable – R-Y-G determinations (pending more detailed analysis)
- Apply maritime risk guidance from UK MGN-371
- Determine port & coastal shipping routes



UK Maritime Guidance Note MGN-371

Distance	Factors	Risk	
< 0.25 NM	Inter-turbine spacing = only small craft recommended	Very High	RED
0.5 NM	Mariner's high traffic density domain	High	
1.0 NM	Minimum distance to parallel boundary of TSS	Medium	YELLOW
1.5 NM	S band radar interference - ARPA affected	Medium	
2.0 NM	Compliance with COLREGS becomes less challenging	Medium	
> 2.0 NM	But not near a TSS	Low	
5.0 NM	Adjacent wind farm introduces cumulative effect. Distance from TSS entry/exit	Very Low	GREEN
10.0 NM	No other wind farms	Very Low	

R-Y-G Methodology



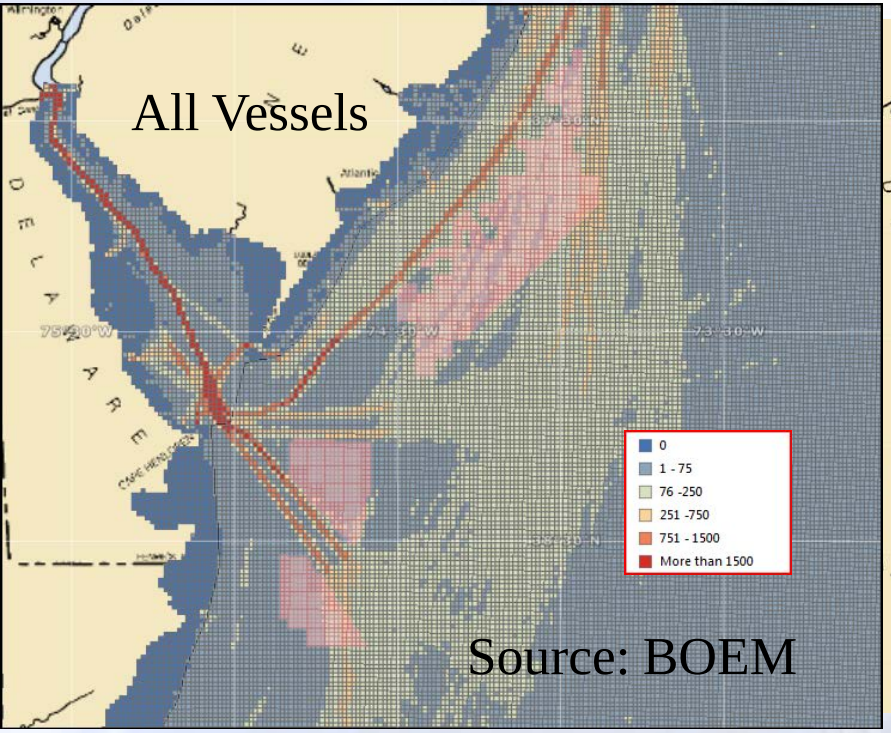
Within 1 NM → RED → Not suitable for development

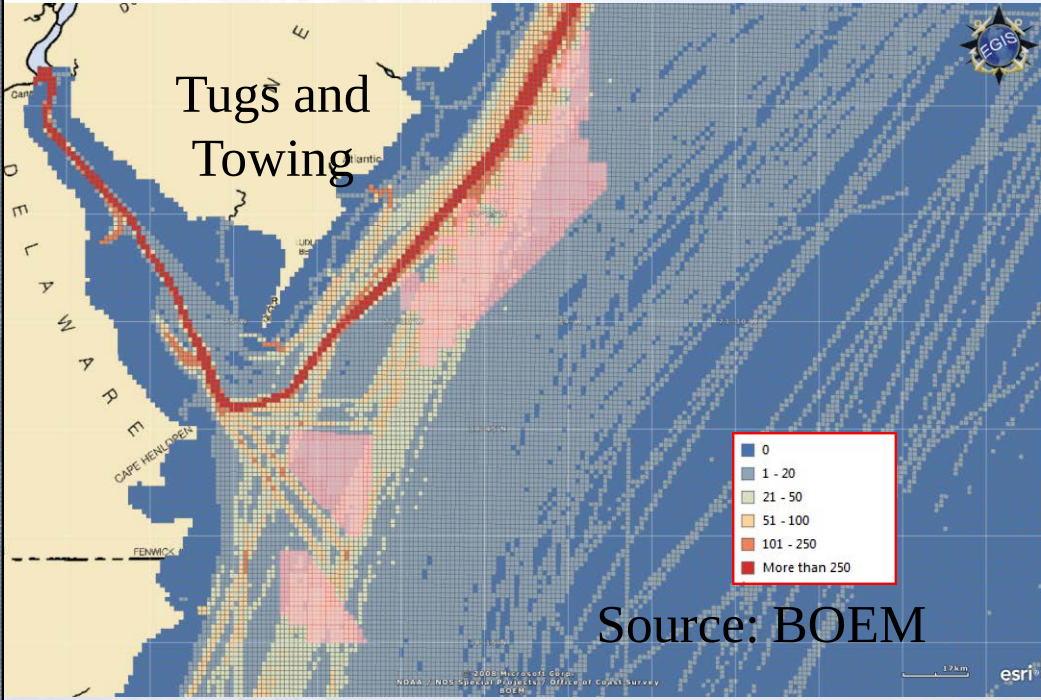
Between 1 – 5 NM → YELLOW → May be suitable w/ mitigation
Requires further analysis

> 5 NM → GREEN → minimal impact

Phase 2- Evaluate or Refine Recommendations for WEAs

- Better AIS products are now available for the entire Atlantic Coast broken out by vessel type





Phase 3- Modeling and Analysis

- Develop a GIS based model to predict traffic density and traffic patterns given alternative siting scenarios
- Evaluate mitigation measures
- Determine the resultant navigational safety risk
- BOEM contracted with Pacific Northwest National Laboratory (PNNL)

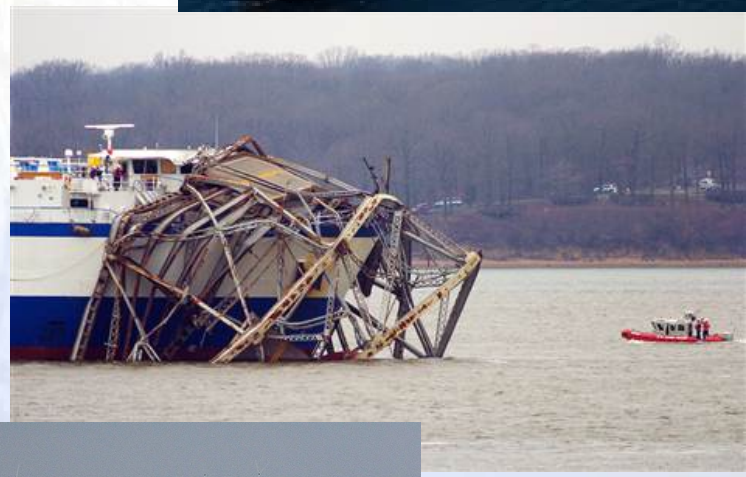
Potential ACPARS Outcomes

- Ongoing analysis
  - PNNL Modeling and Analysis
  - Analytical Determination of Routes
- Baseline Characterization of Traffic Patterns
- Recommended routes
- Creation of Fairways
- Creation of Routing Measures

Impacts to Navigation

Safety

- Δ Vessel Density (collisions)
- Δ Allisions w/ fixed objects
- Δ Weather & Environs

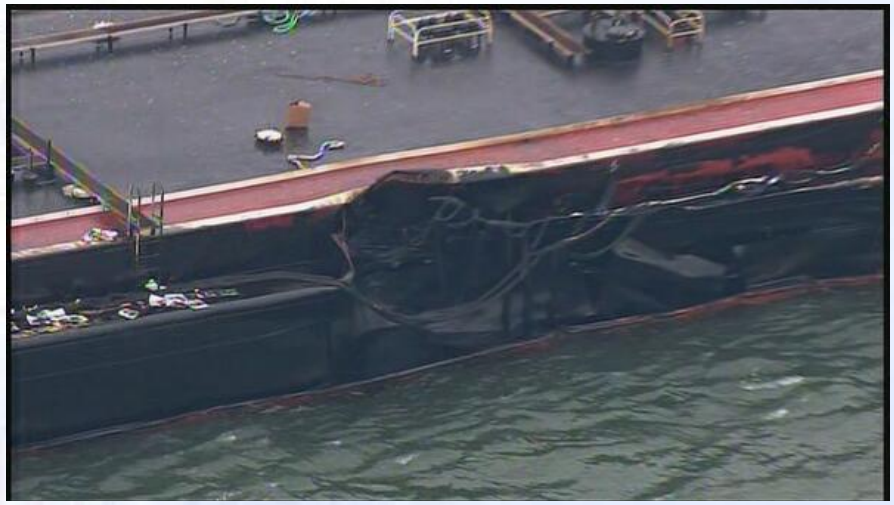


VIDEO LINK

Impacts to Navigation

Safety

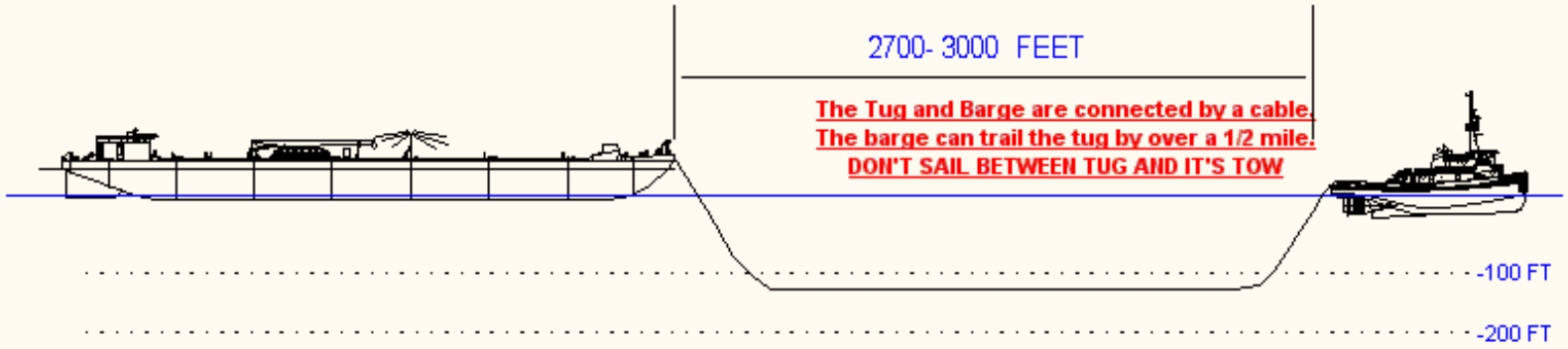
- Decreased Sea Room
- Mixing Vessel Types
- Complexity of vessel interactions



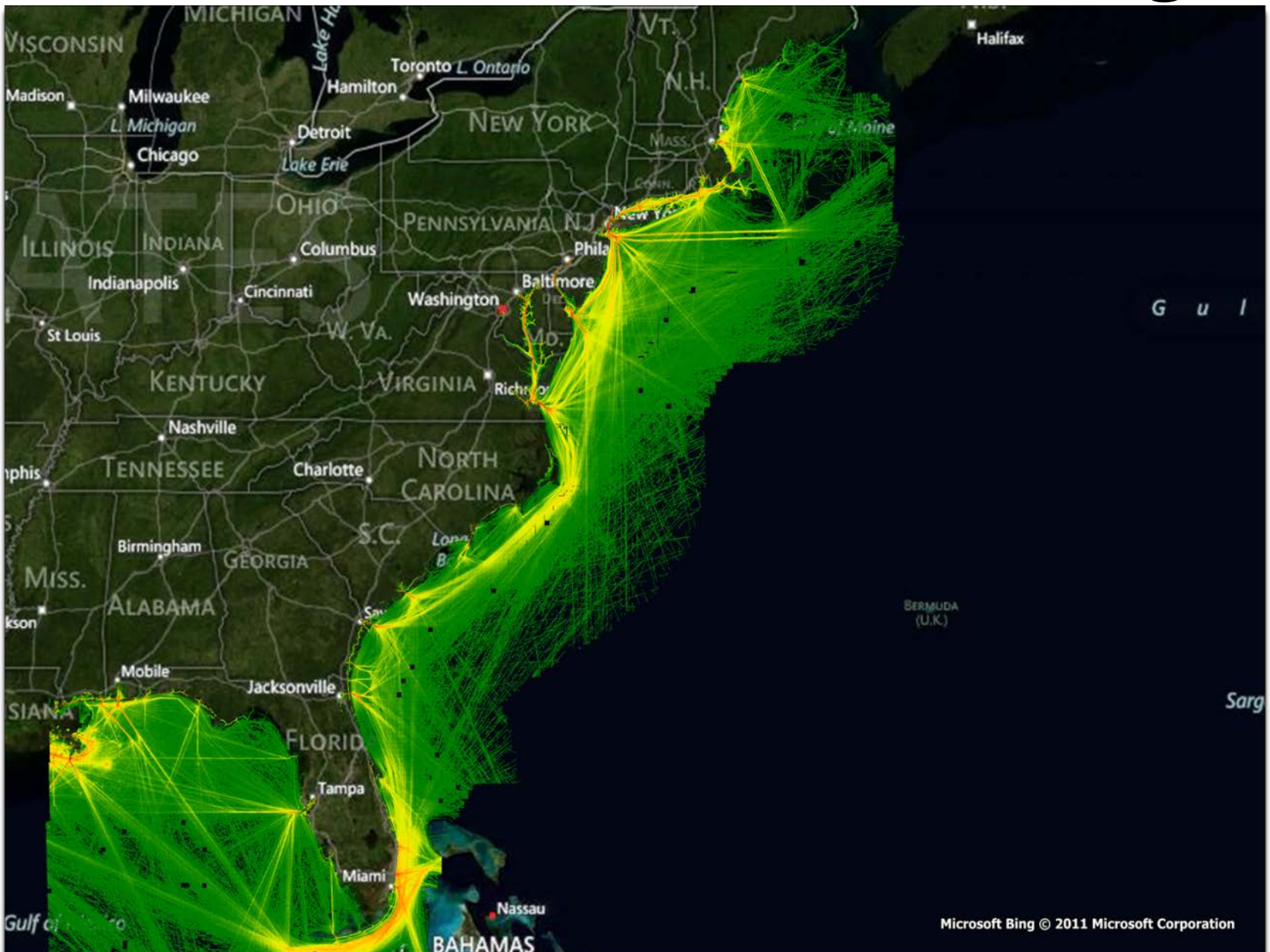

WAVY.COM

WATCH FOR BARGES AT SEA

APPROX. SPEED 7 - 10 KTS



Use of AIS for Marine Planning



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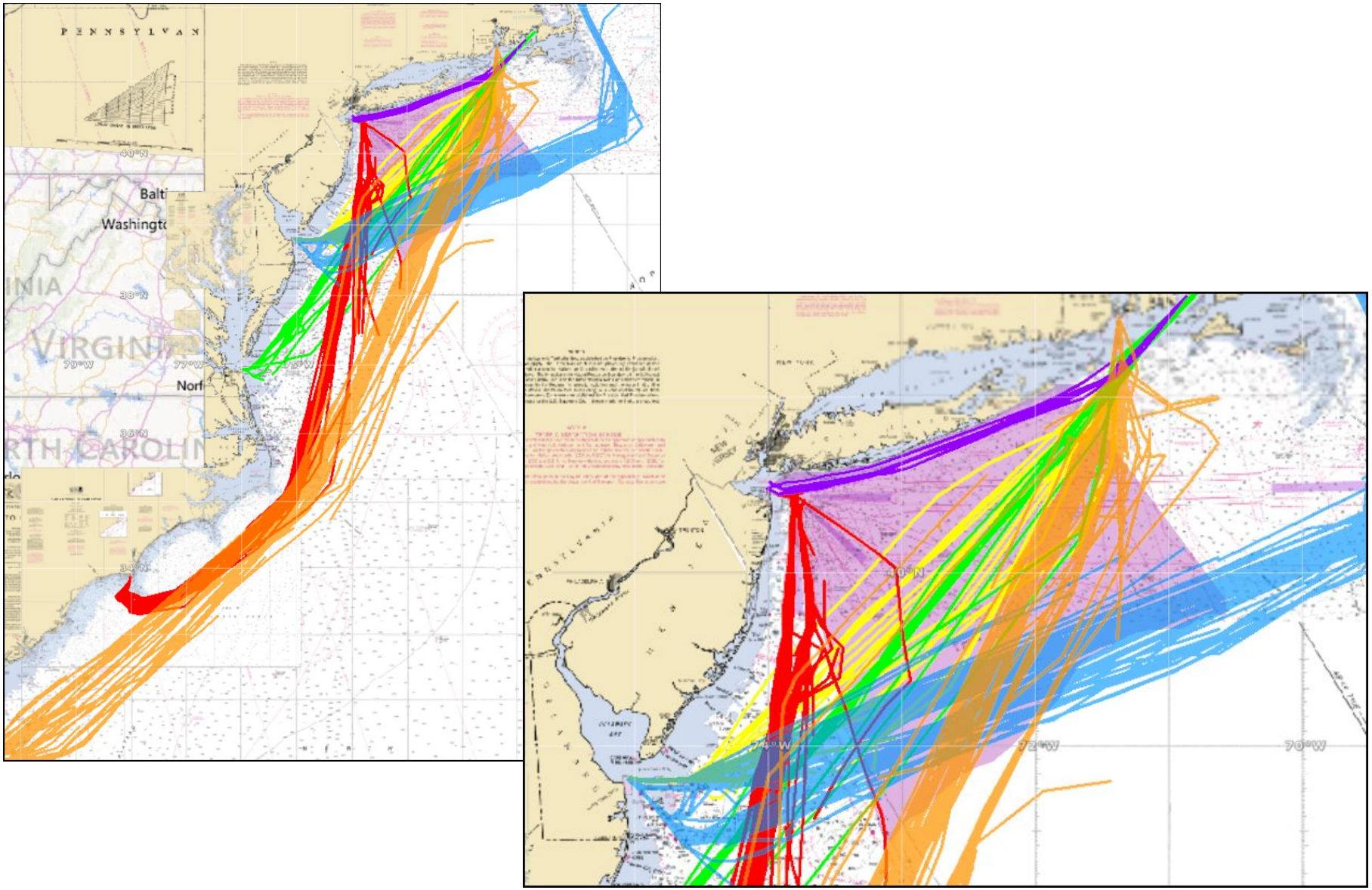
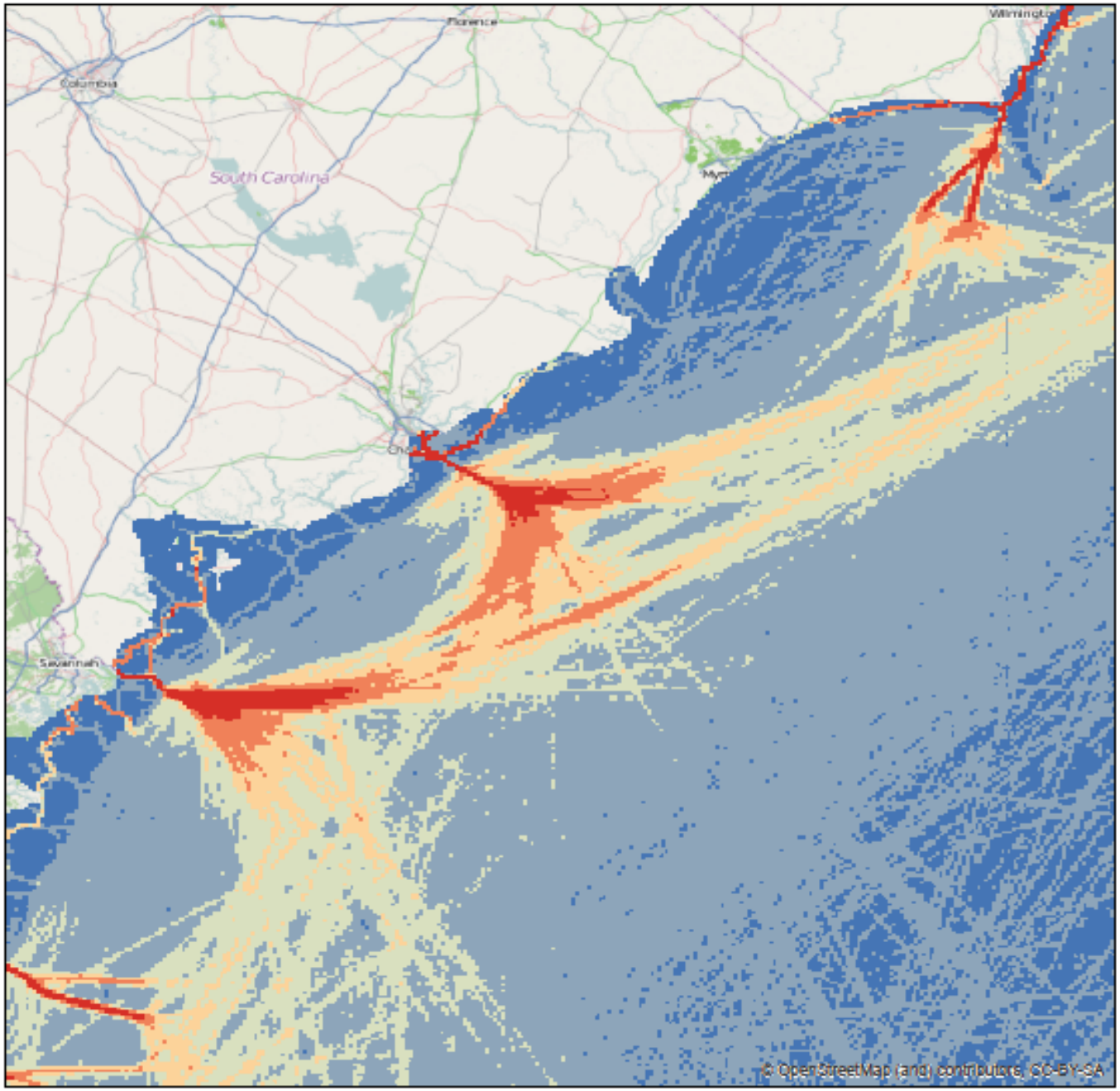




2010 Vessel Traffic along the South Carolina coast

Count of Vessels in 2010

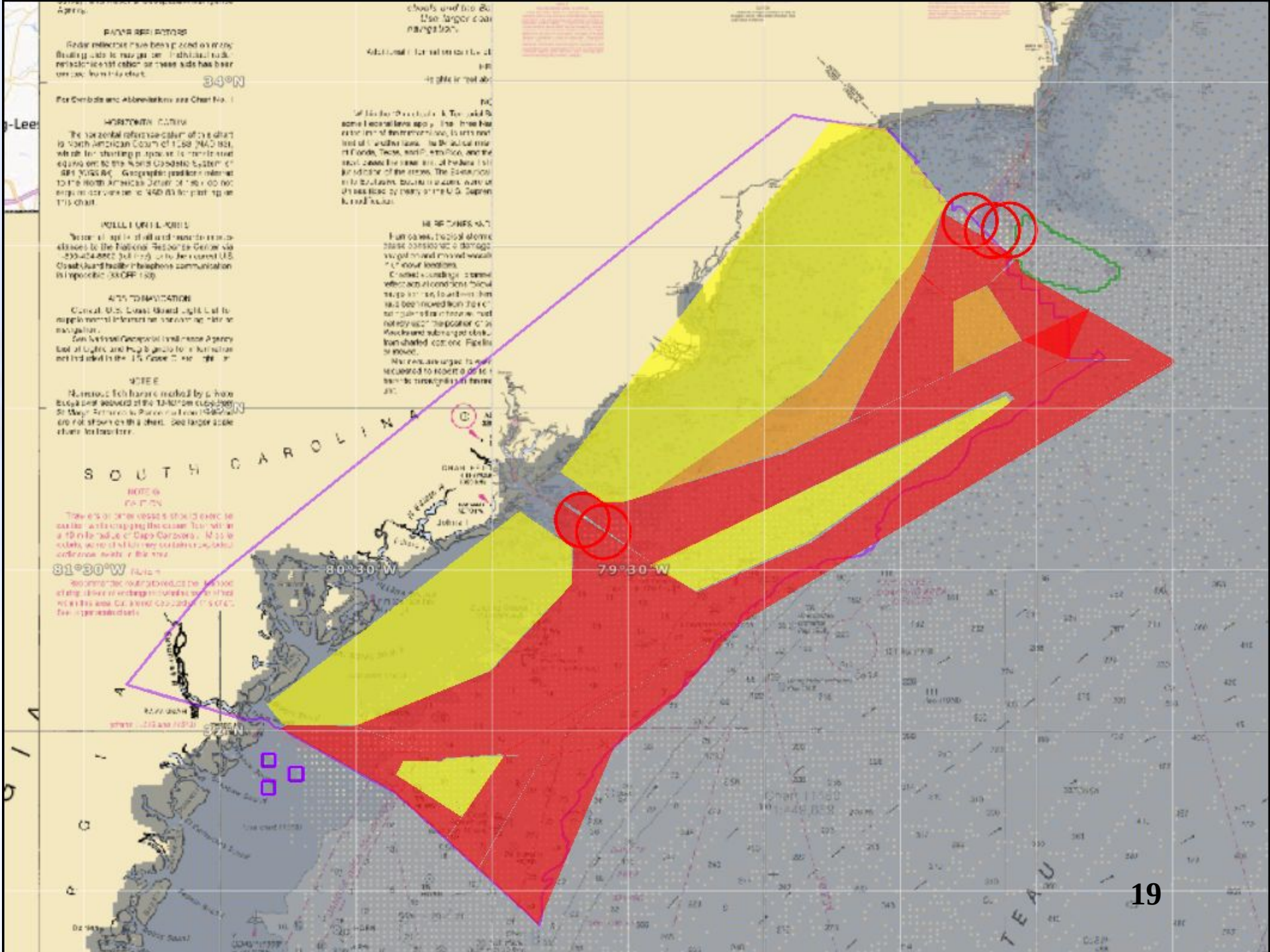
- 0
- 1 - 20
- 21 - 50
- 51 - 100
- 101 - 250
- More than 250

N

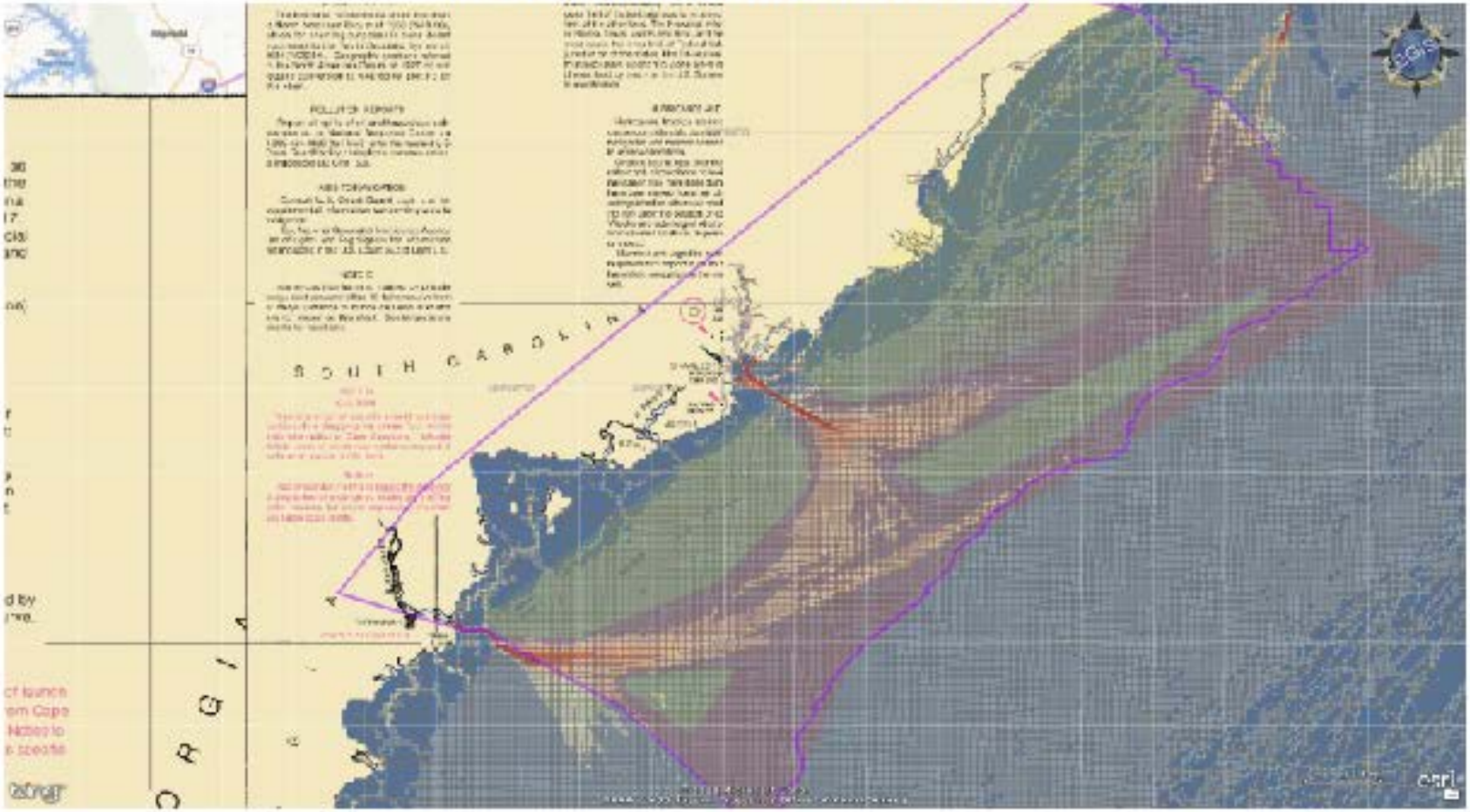
0 15 Nautical Miles

The number of vessels was calculated in each aliquot (1/16th of a lease block) by the Bureau of Ocean Energy Management (BOEM) for 2010. BOEM counted the number of unique vessels in each 24 hour period in each aliquot. Then, BOEM summed the number of vessesl for the entire year.

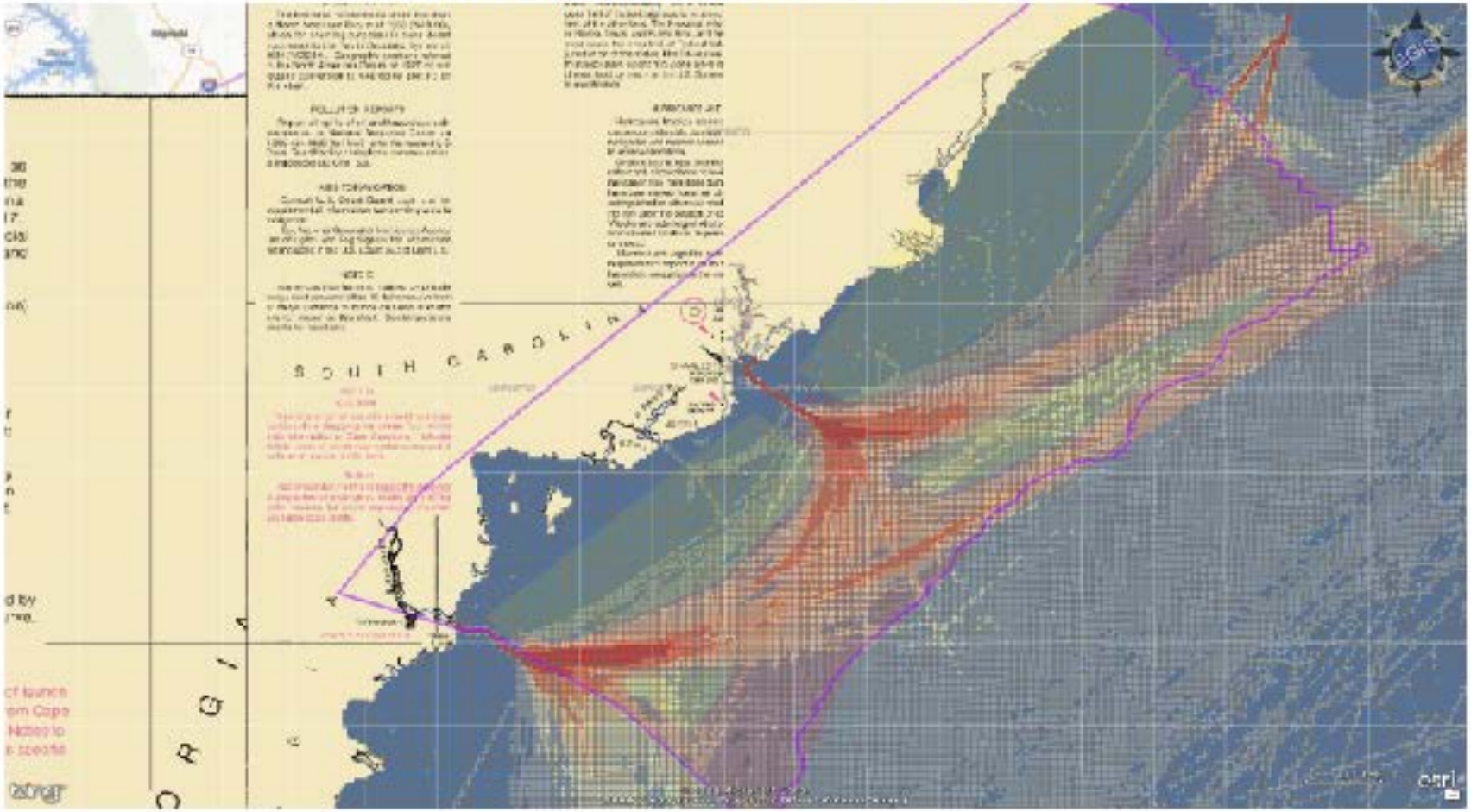
Map created by U.S. Coast Guard, April 2013.

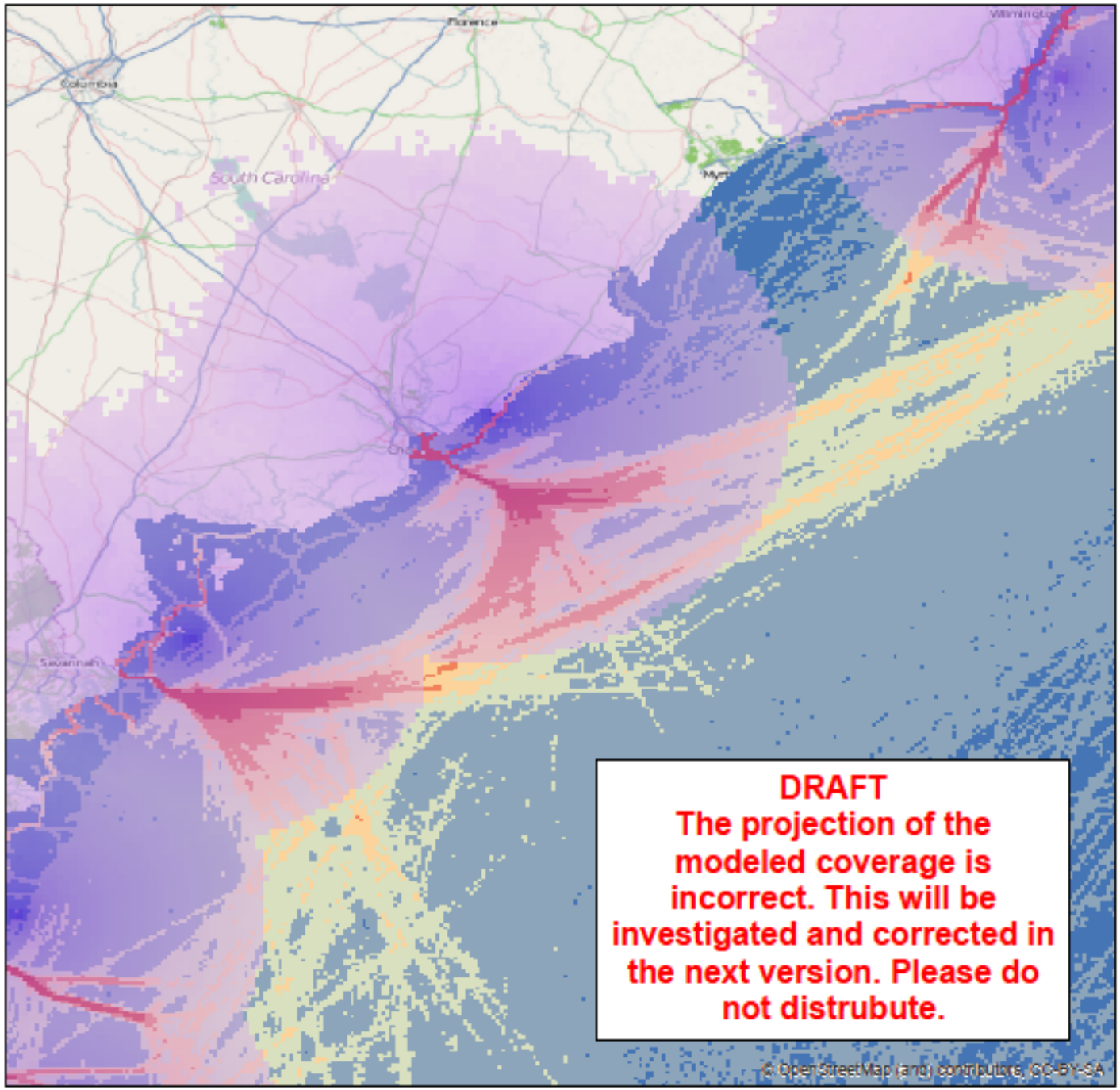

34°N
SOUTH CAROLINA
81°30'W
80°30'W
79°30'W

South Carolina Initial Navigation Assessment



South Carolina Initial Navigation Assessment- Cargo





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Nationwide AIS Receive Capability

- -22 dBm
- -120 dBm

0 15 Nautical Miles

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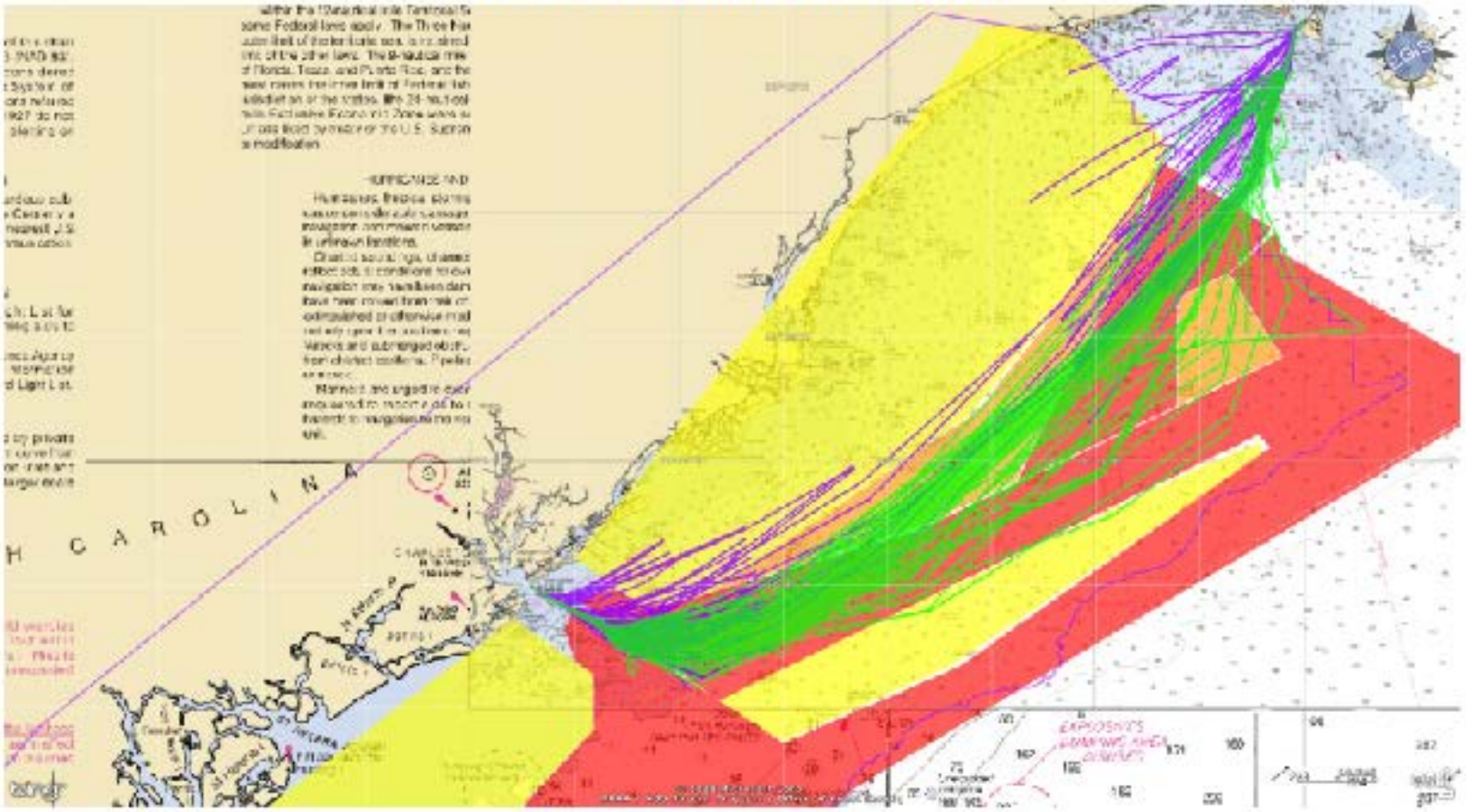
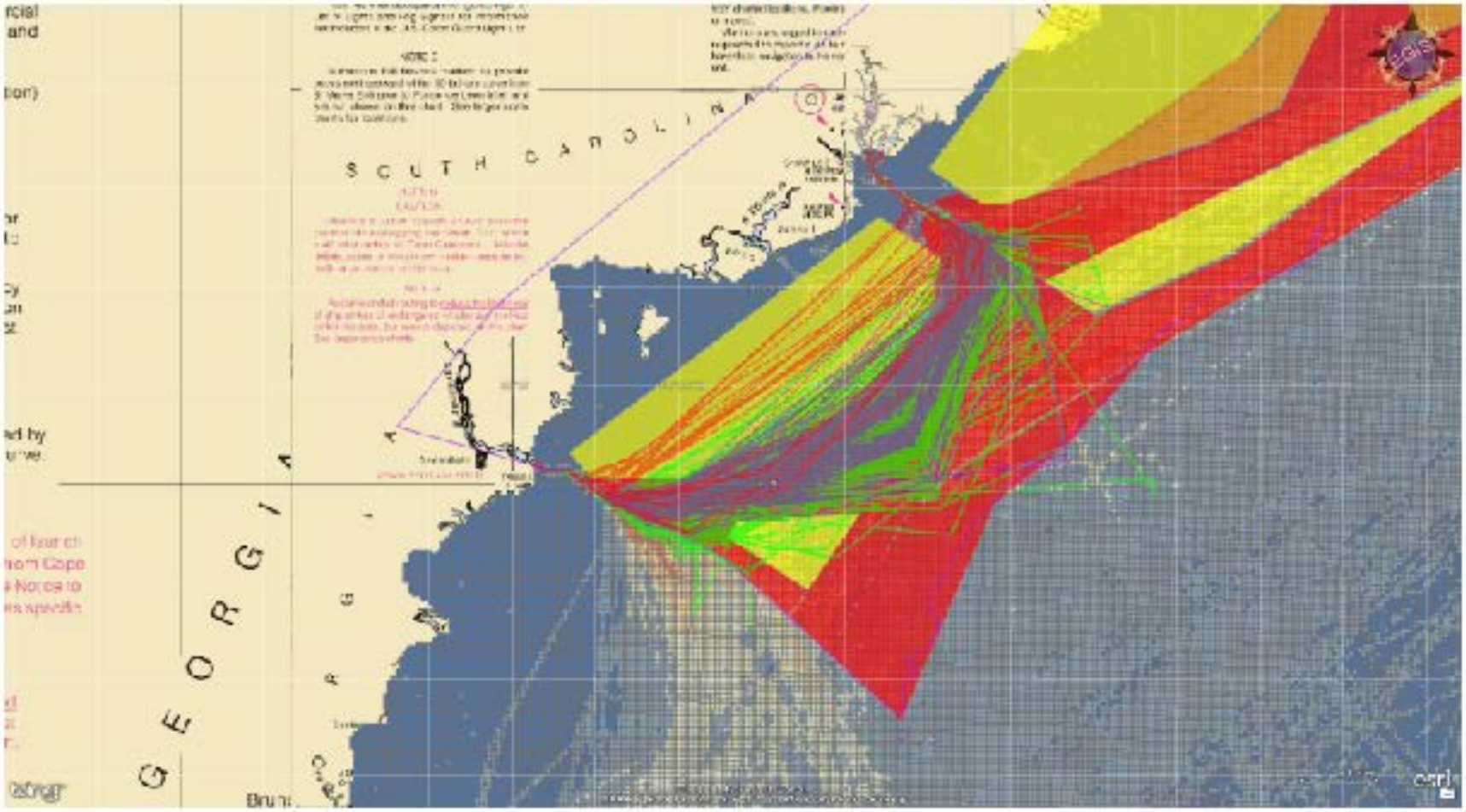
Map created by U.S. Coast Guard, April 2013.

Port to Port- Charleston and Wilmington

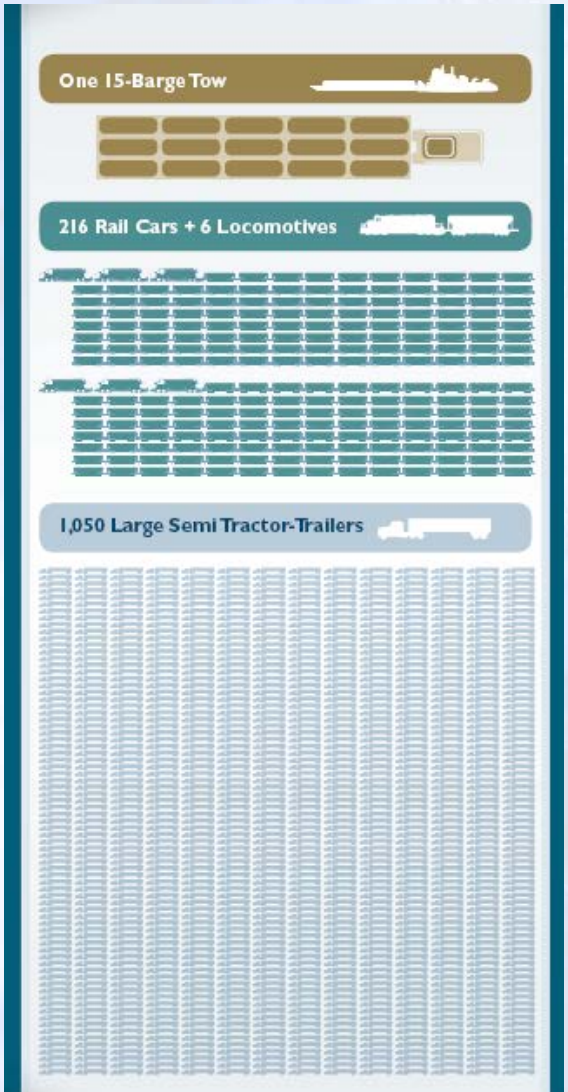


Port to Port- Charleston and Savannah

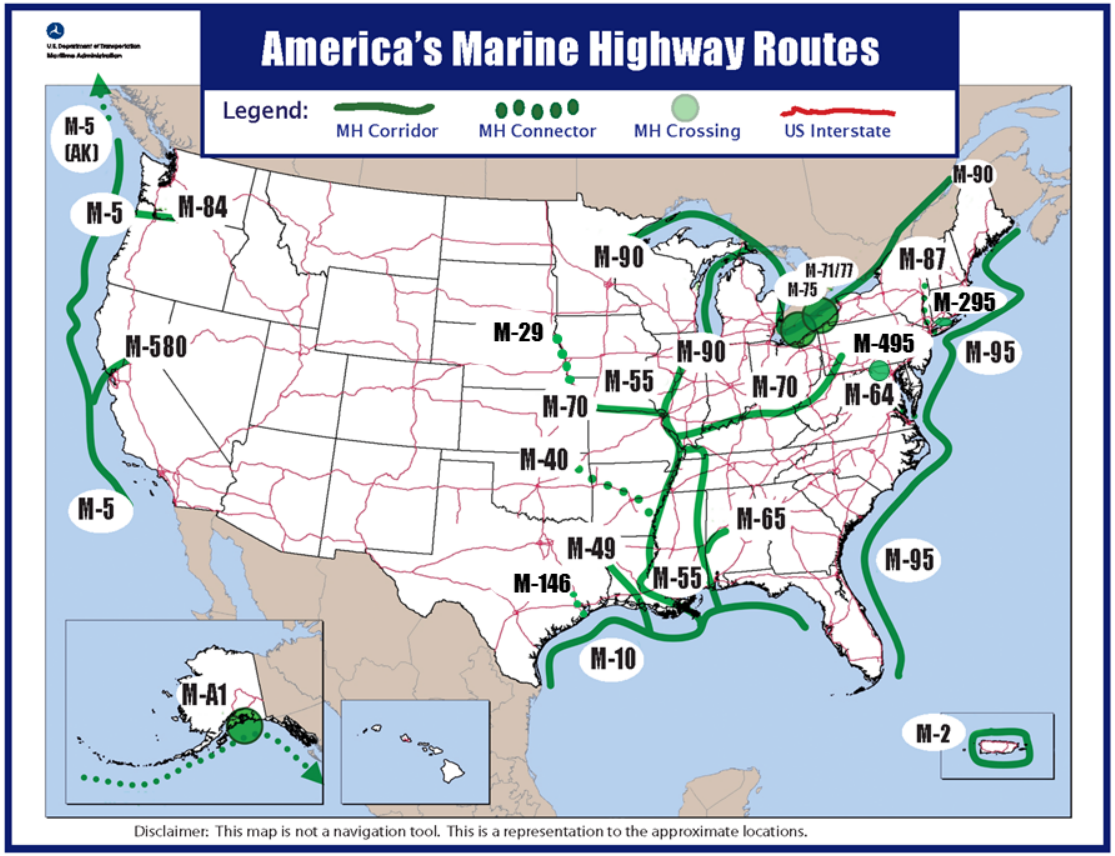


Future Considerations

Marine Highways

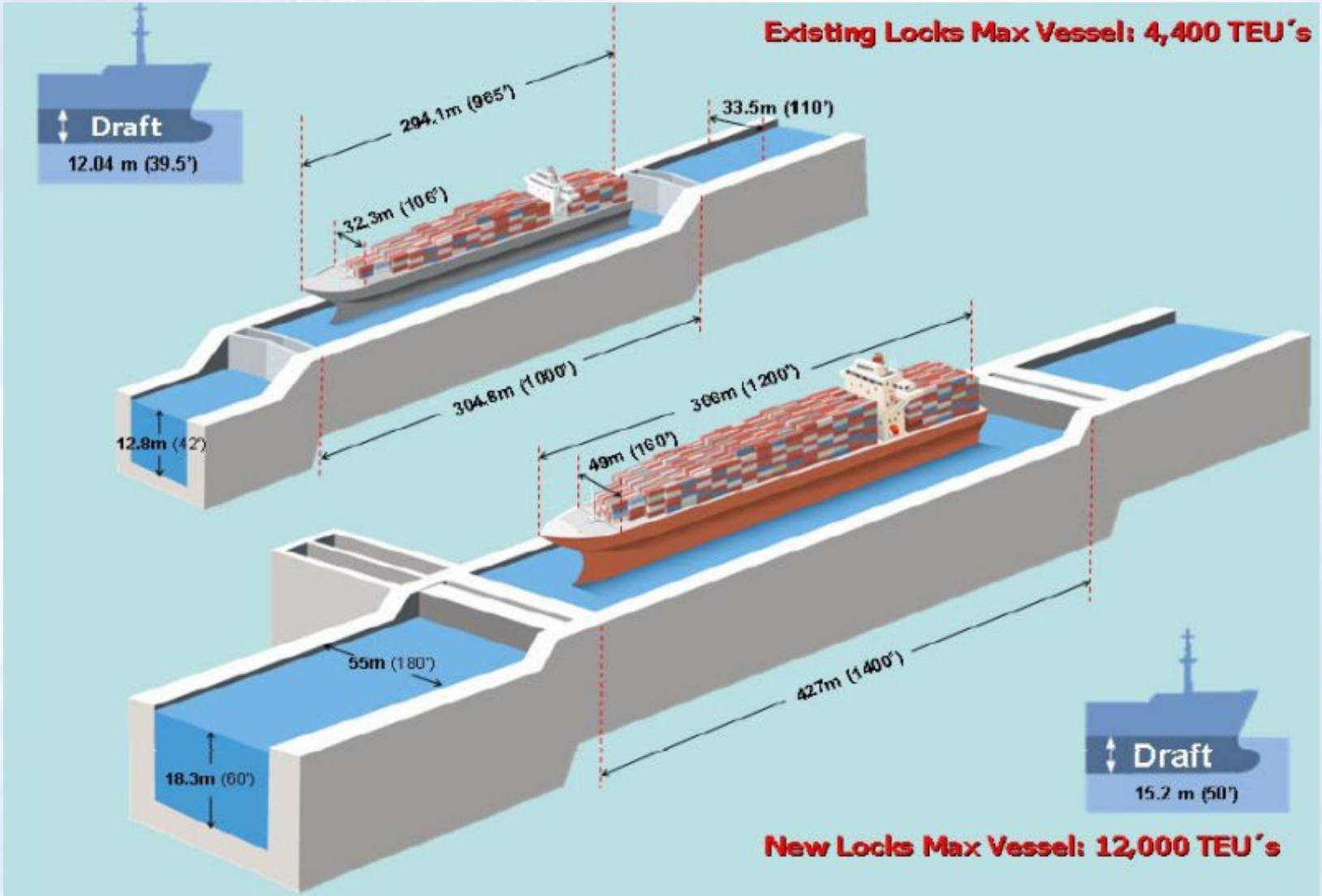


Maritime = Safer, More Efficient, Greener



Future Considerations

Panama Canal Expansion



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Proceedings Magazine

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DoD and USCG Assessments