

ACPARS Assessment of Navigation in the South Carolina Planning Area

BOEM South Carolina State Task Force meeting
16 May 2014

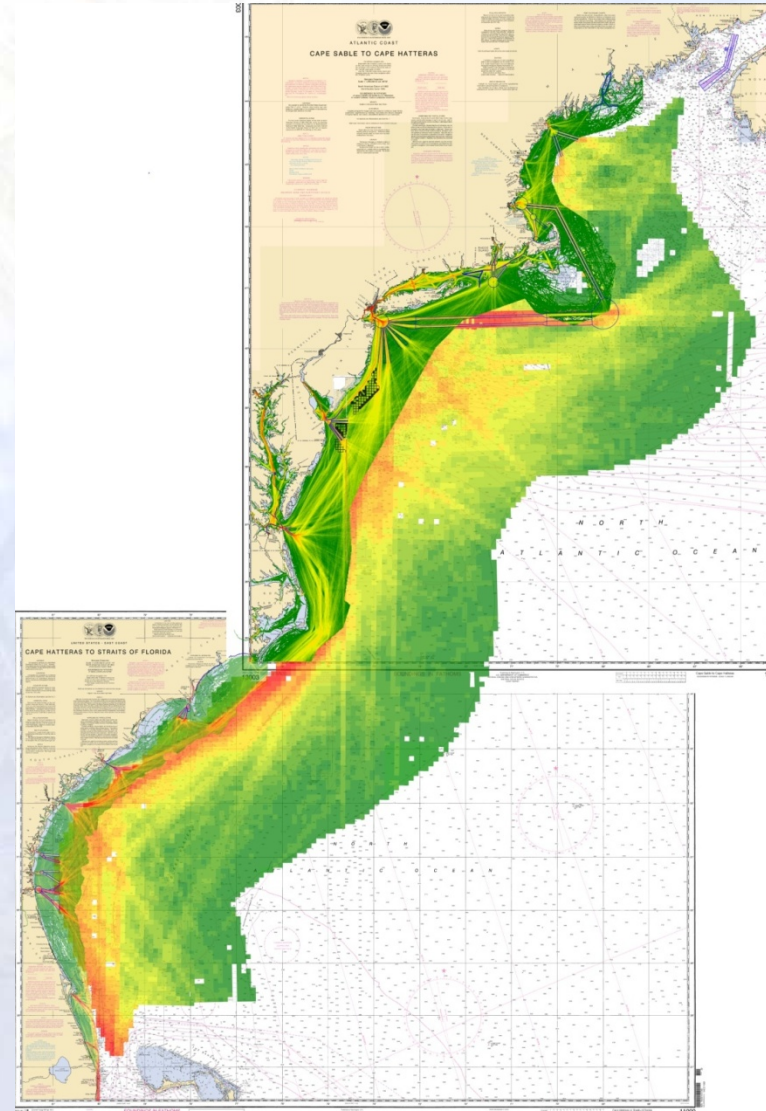
Emile Benard
ACPARS Project Manager



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



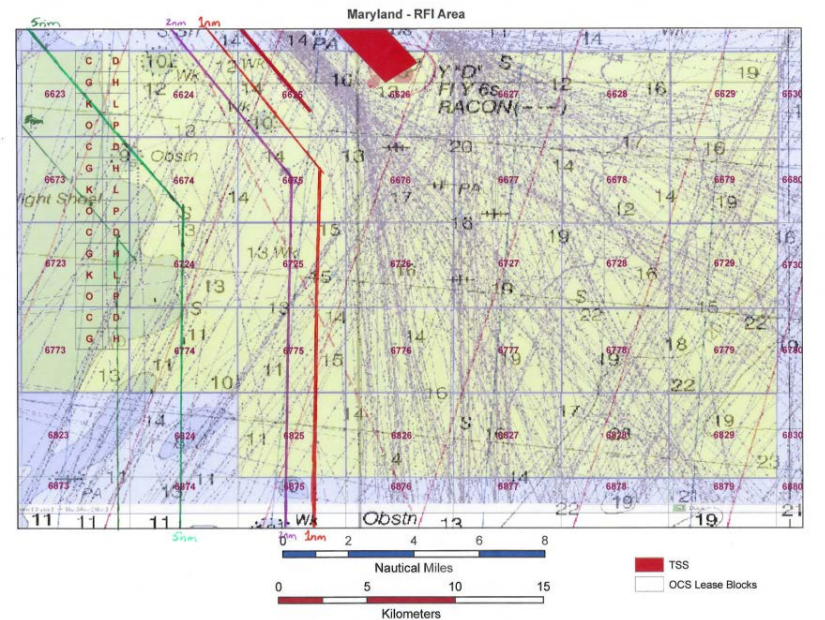
Phase 2- R-Y-G Methodology



➤ 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

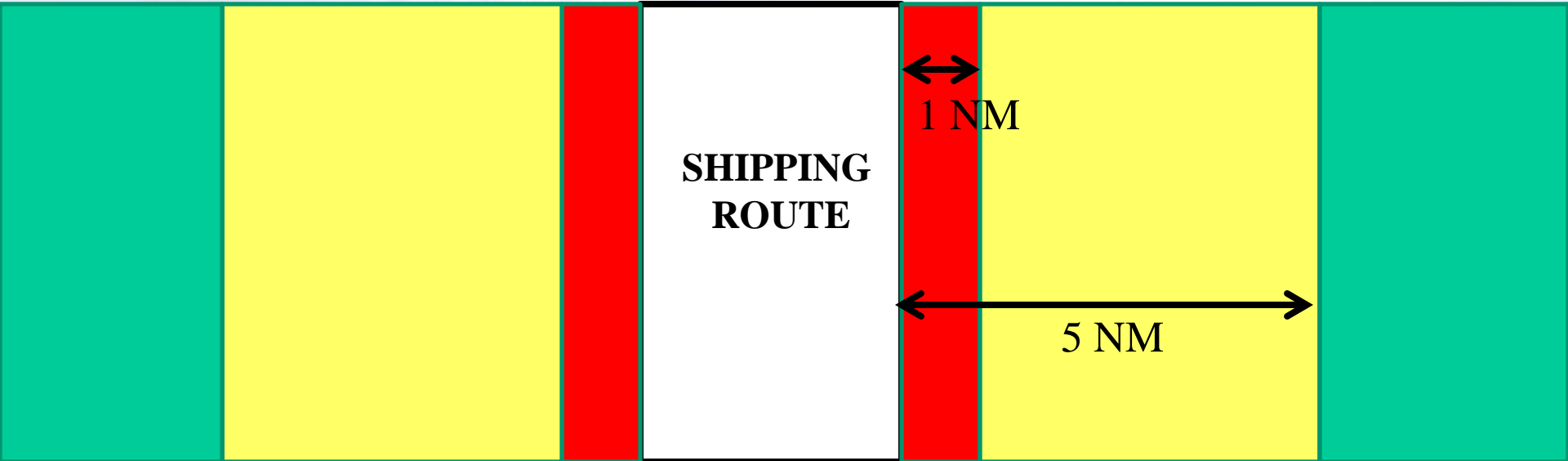
MGN-371



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

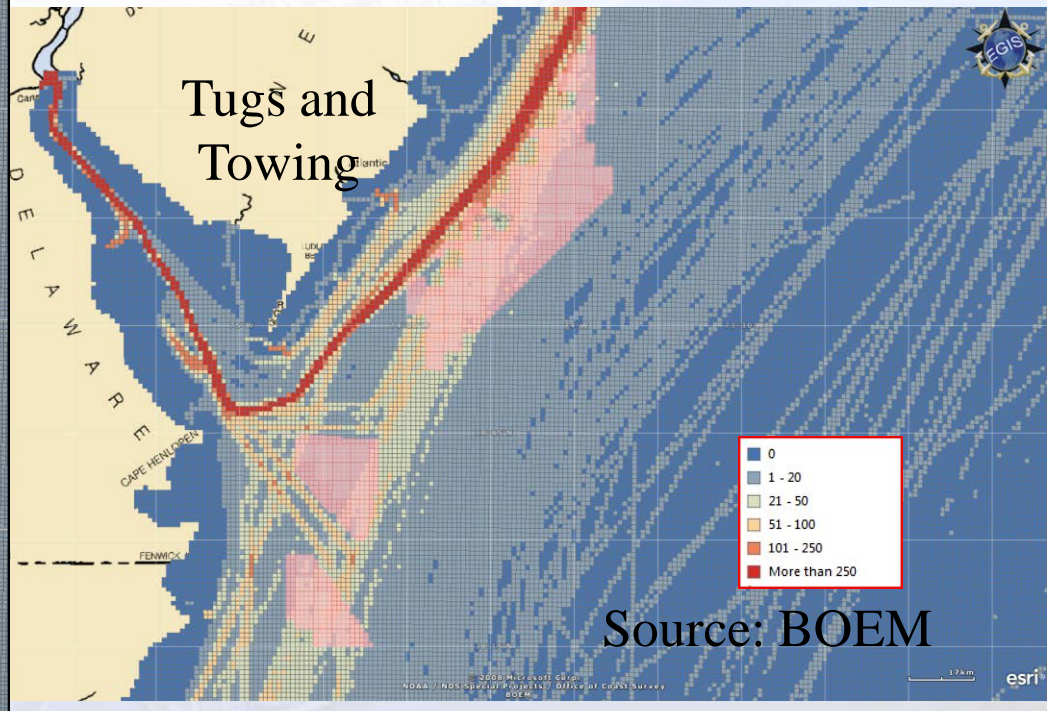
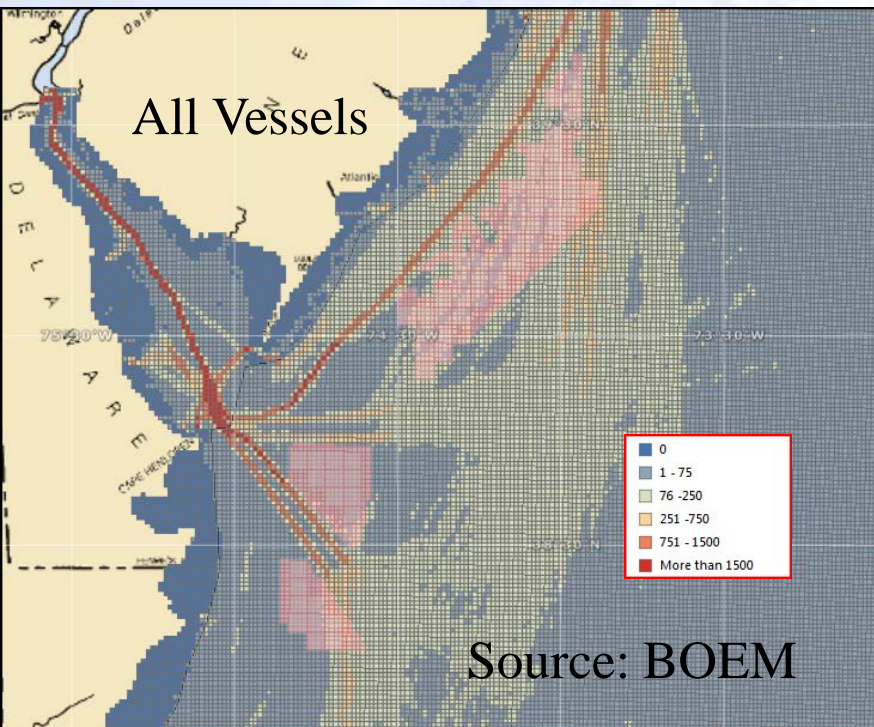
Between 1 – 5 NM → **YELLOW** → May be suitable w/ mitigation
Requires further analysis

> 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



©Bergthor Gunnlaugsson



Impacts to Navigation

Safety

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

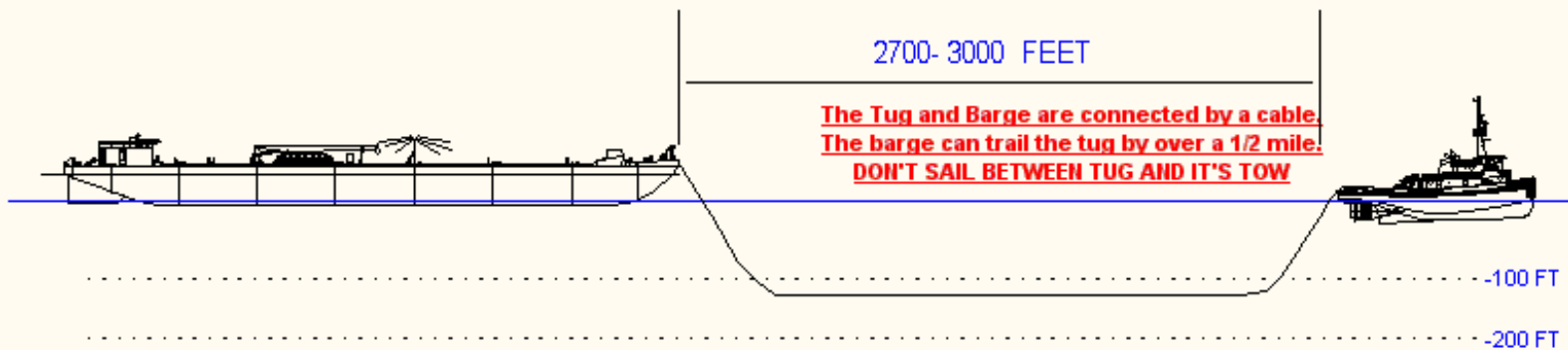




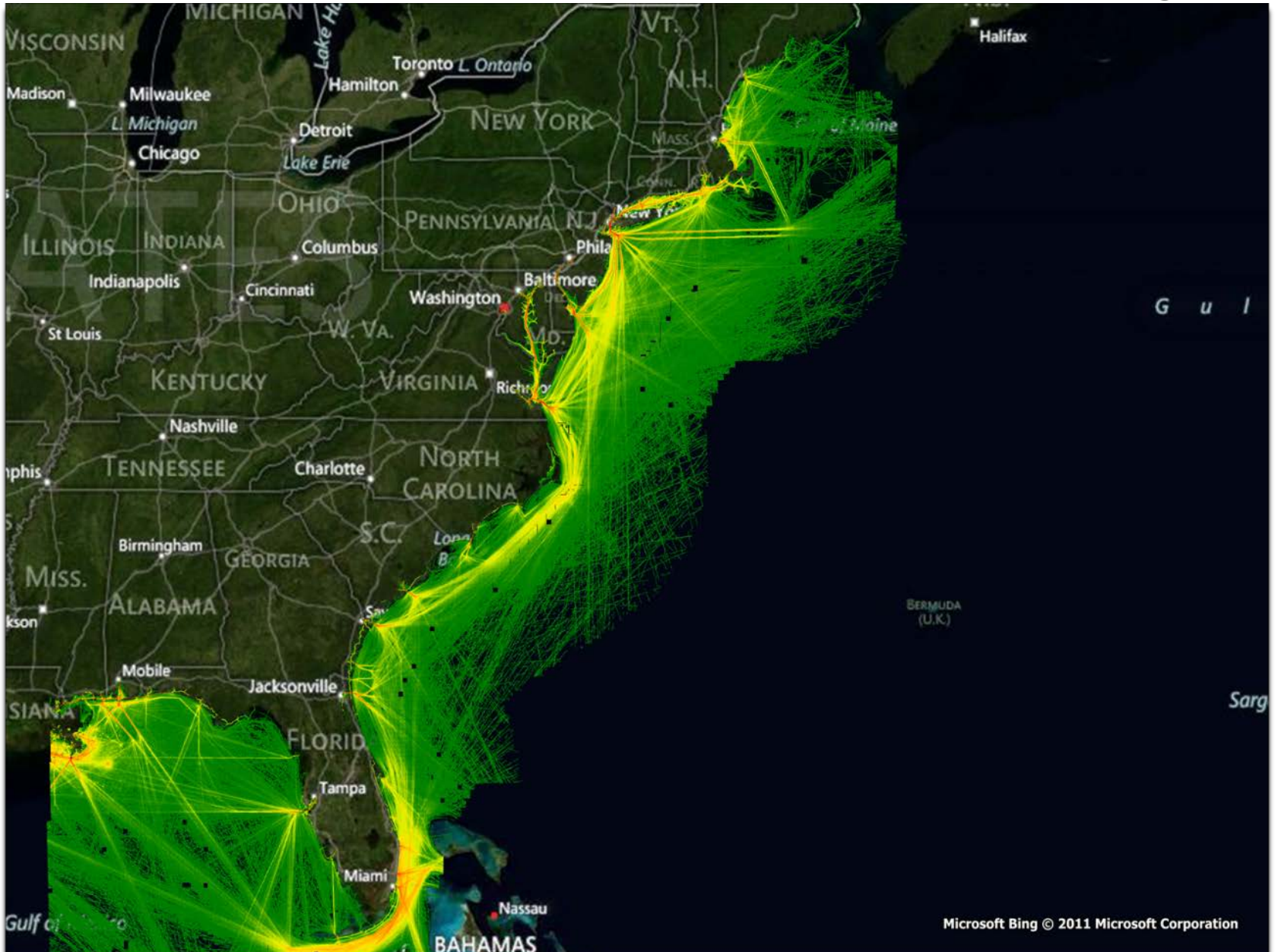


WATCH FOR BARGES AT SEA

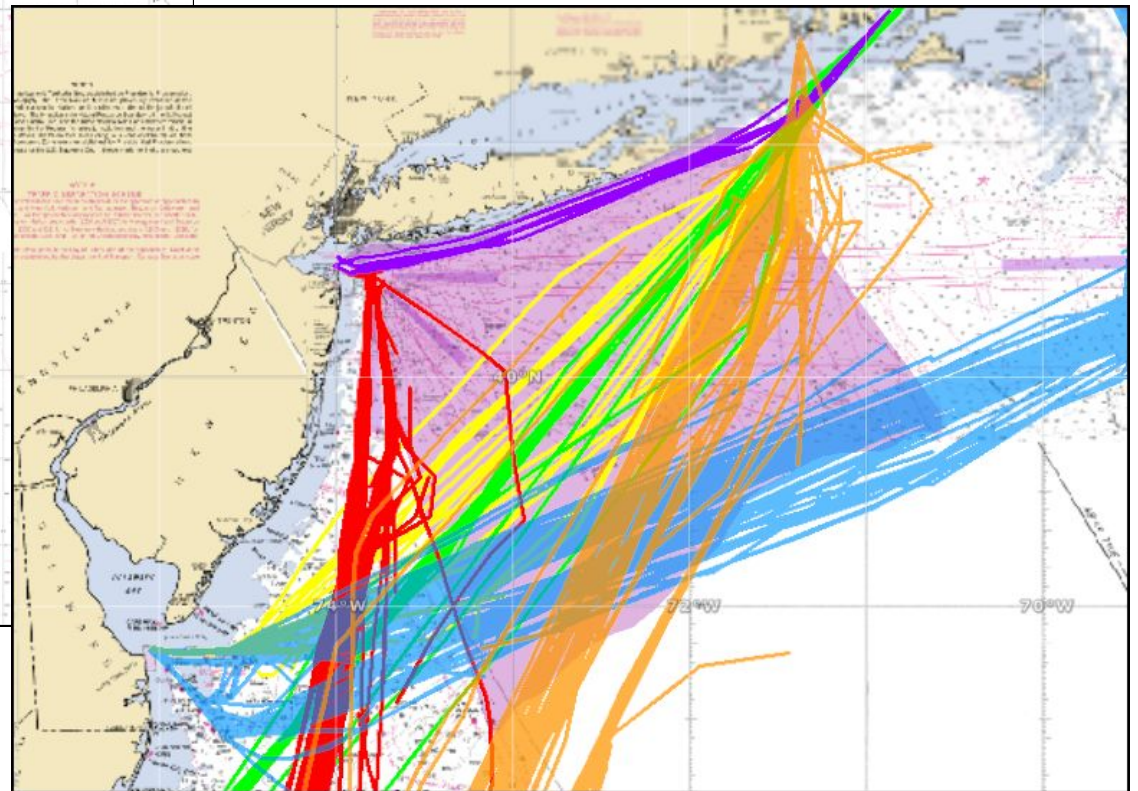
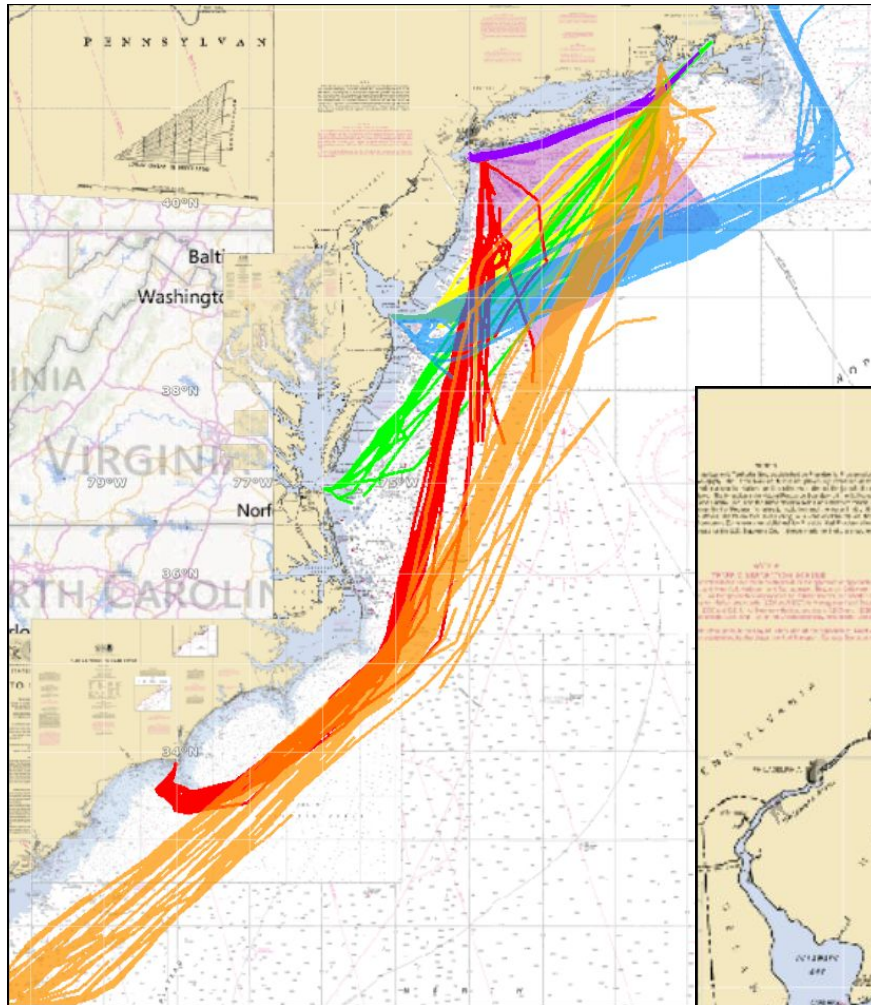
APPROX. SPEED 7 - 10 KTS



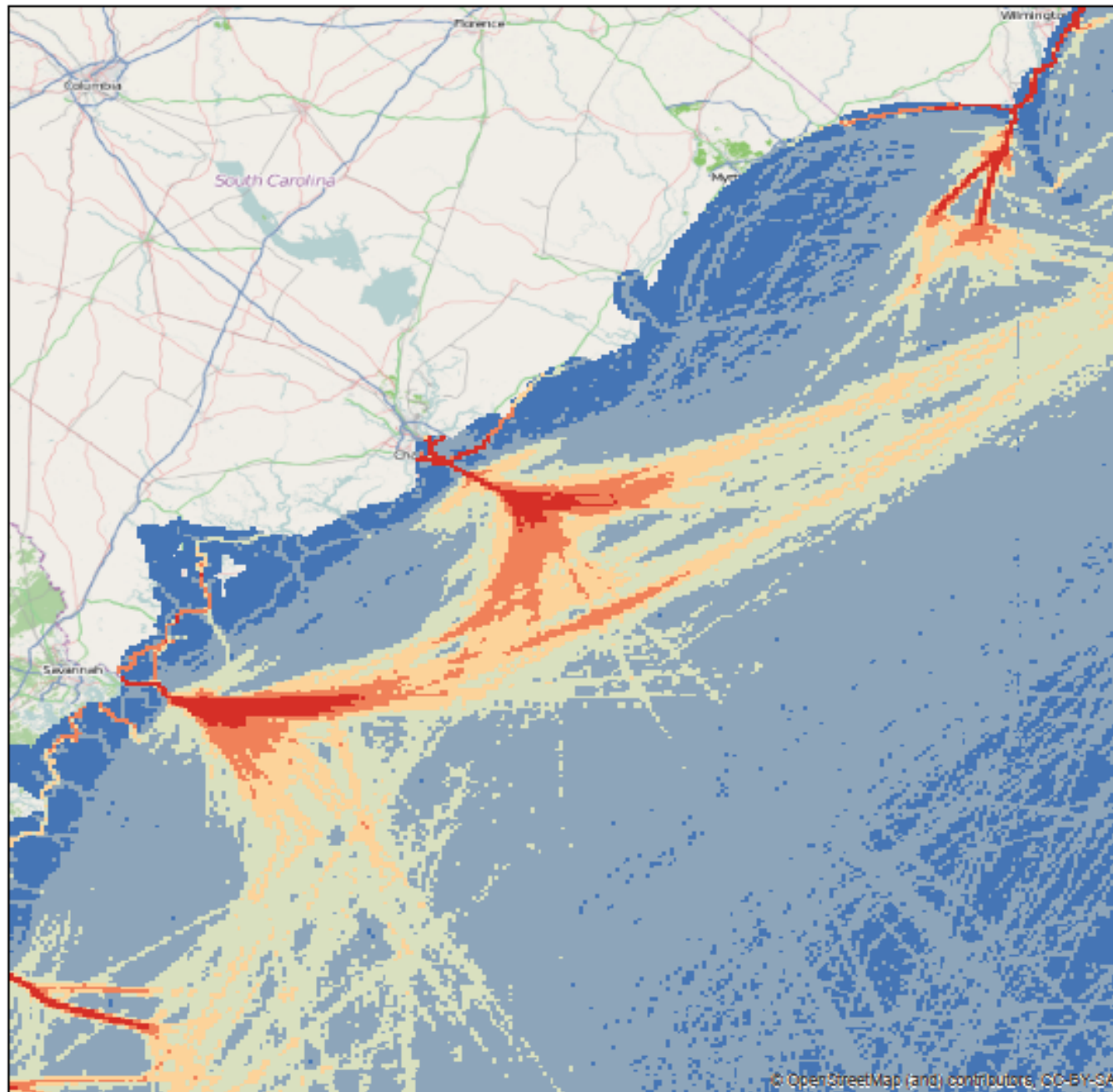
Use of AIS for Marine Planning



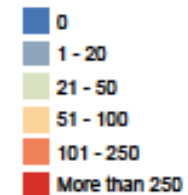
Use of AIS for Marine Planning



2010 Vessel Traffic along the South Carolina coast



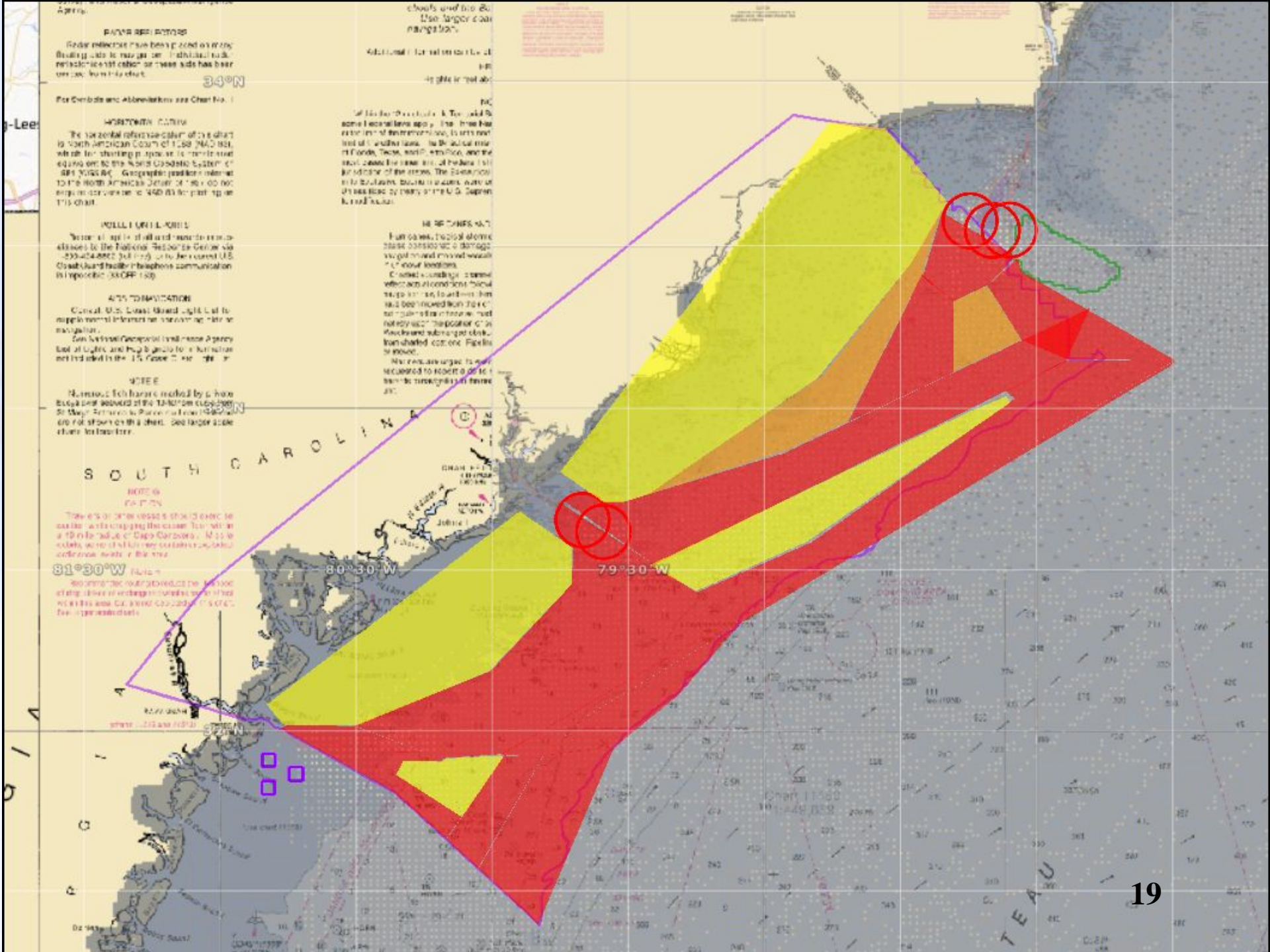
Count of Vessels in 2010



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 vessels for the entire year.

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



charts and for the use of larger scale navigation.

FAVORABLE REPORT

Under contract has been procured as many floating aids to navigation as possible to be placed in the Cape Fear River and its tributaries.

34°N

For Symbols and Abbreviations see Chart No. 1

NOTICE TO MARINERS

The horizontal reference datum of this chart is North American Coast of 1983 (NAC 83), which for charting purposes is the mean spheroidal surface of the North American Datum of 1983 (NAD 83). Geographic positions referred to in the North American Datum of 1983 do not require conversion to NAD 83 for plotting on this chart.

POLLUTION ABILITY

Notice of spill or other incident should be reported to the National Pollution Center via 202-442-8802 (24 hours) or to the nearest U.S. Coast Guard facility in the area. Communication is in English. (50 CFR 150)

AIDS TO NAVIGATION

Coastal U.S. Coast Guard Light List is the principal information source for aids to navigation. See National Geospatial Intelligence Agency List of Lights and Buoyage for a full list not included in the U.S. Coast Light List.

NOTE

Numbers of fish have been reduced by a factor of 10 in the 1980's. See larger scale charts for details.

NOTE

There are some vessels which are not marked with changing the course to within a 10 mile radius of Cape Fear. It is the duty of all mariners to exercise due diligence in the area.

31°30'N

See chart 11500 for details of the 1980's. See larger scale charts for details.

Additional information for the use of larger scale navigation.

HR

Height in feet above

MSL

of the tide gauge. The tide gauge is located at the mouth of the river. It is not used for larger scale navigation. The tide gauge is located at the mouth of the river. The tide gauge is located at the mouth of the river. The tide gauge is located at the mouth of the river.

REMARKS

For details of the tide gauge, see chart 11500. The tide gauge is located at the mouth of the river. The tide gauge is located at the mouth of the river. The tide gauge is located at the mouth of the river. The tide gauge is located at the mouth of the river.

SOUTH CAROLINA

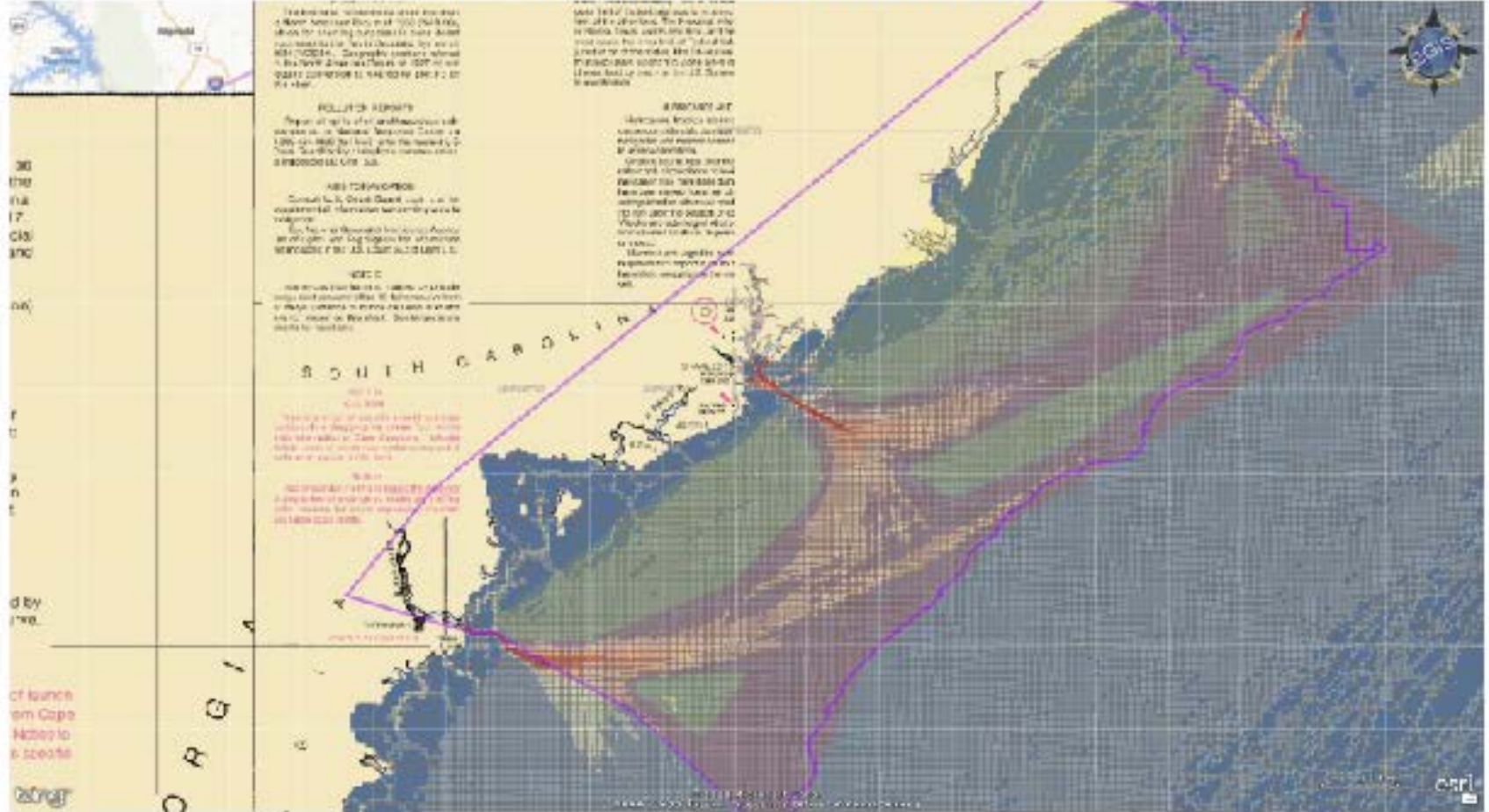
Chart 11500

Chart 11500

80°30'W

79°30'W

South Carolina Initial Navigation Assessment



Traditional navigation data includes a depth soundings map of 100 fathoms, which is the standard depth soundings map for the area. This map is based on the 1984 NOAA bathymetry survey of the area. The map is based on the 1984 NOAA bathymetry survey of the area. The map is based on the 1984 NOAA bathymetry survey of the area.

POLLUTION REPORTS
 Report of spills of oil and hazardous substances in the Atlantic Ocean from 1980 to 1984. The report is based on the data collected by the U.S. Coast Guard. The report is based on the data collected by the U.S. Coast Guard.

ASB DEVELOPMENT
 Coastal U.S. Great Lakes and U.S. Great Lakes. The report is based on the data collected by the U.S. Coast Guard. The report is based on the data collected by the U.S. Coast Guard.

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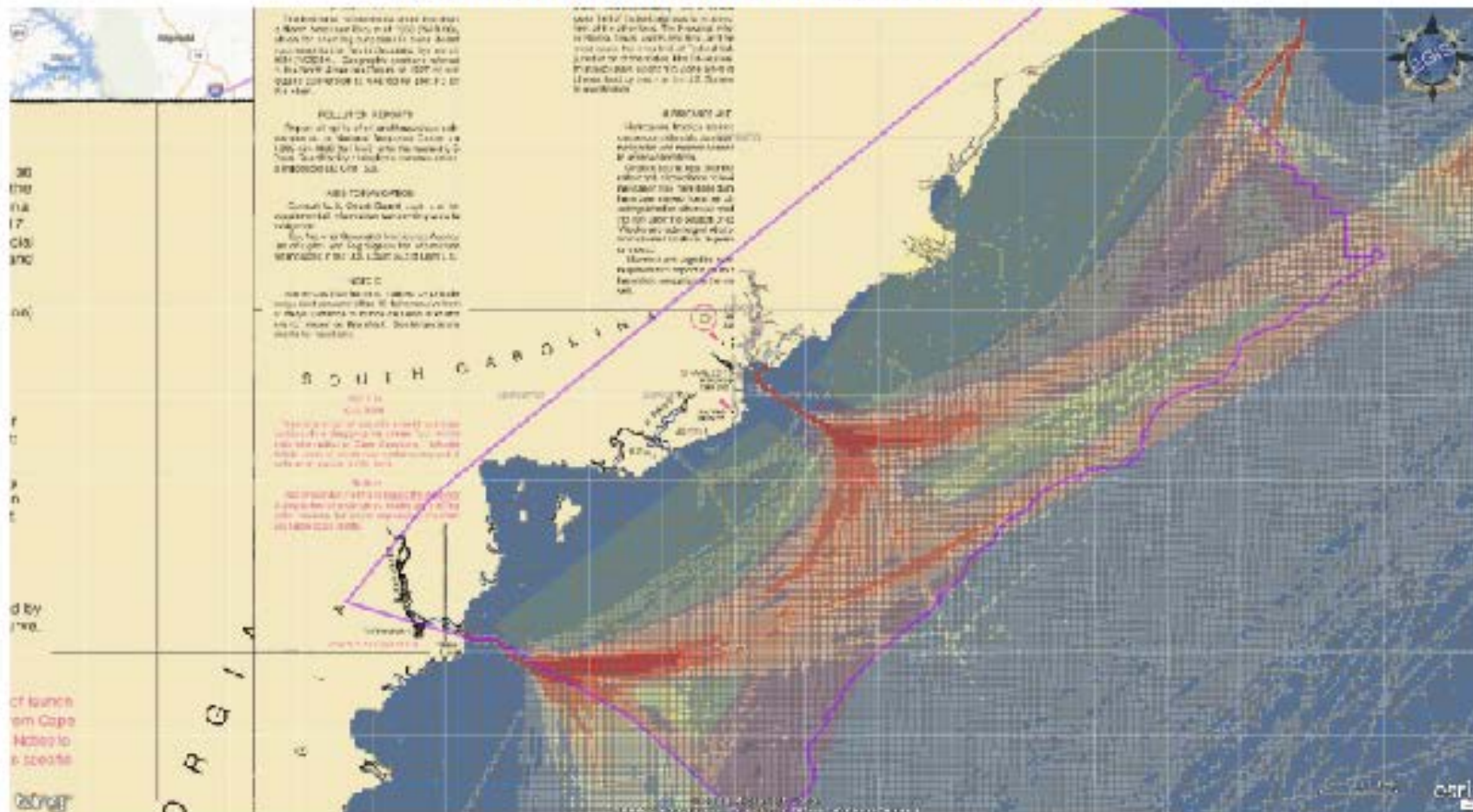
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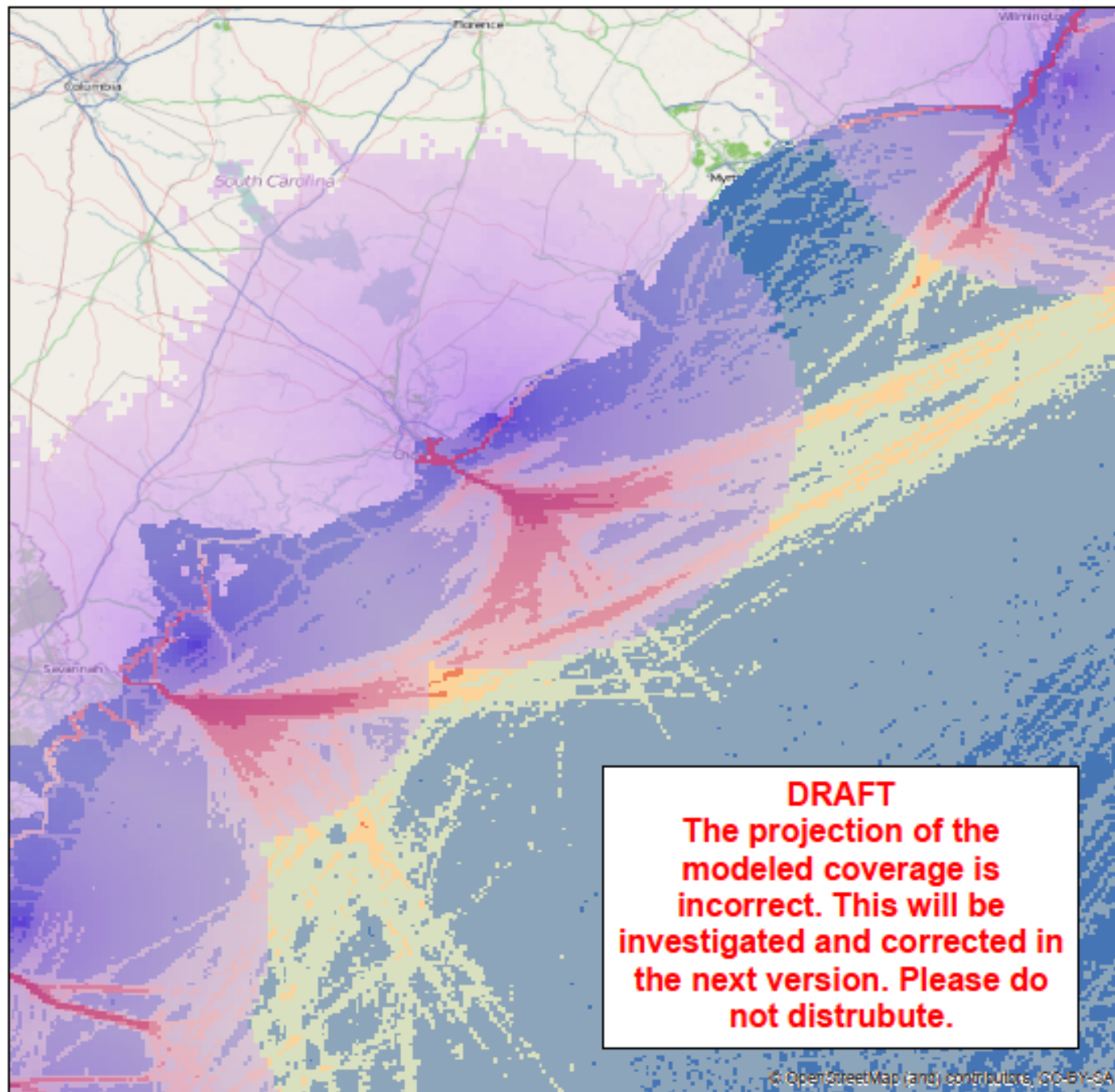
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South Carolina Initial Navigation Assessment- Cargo



2010 Vessel Traffic along the South Carolina coast

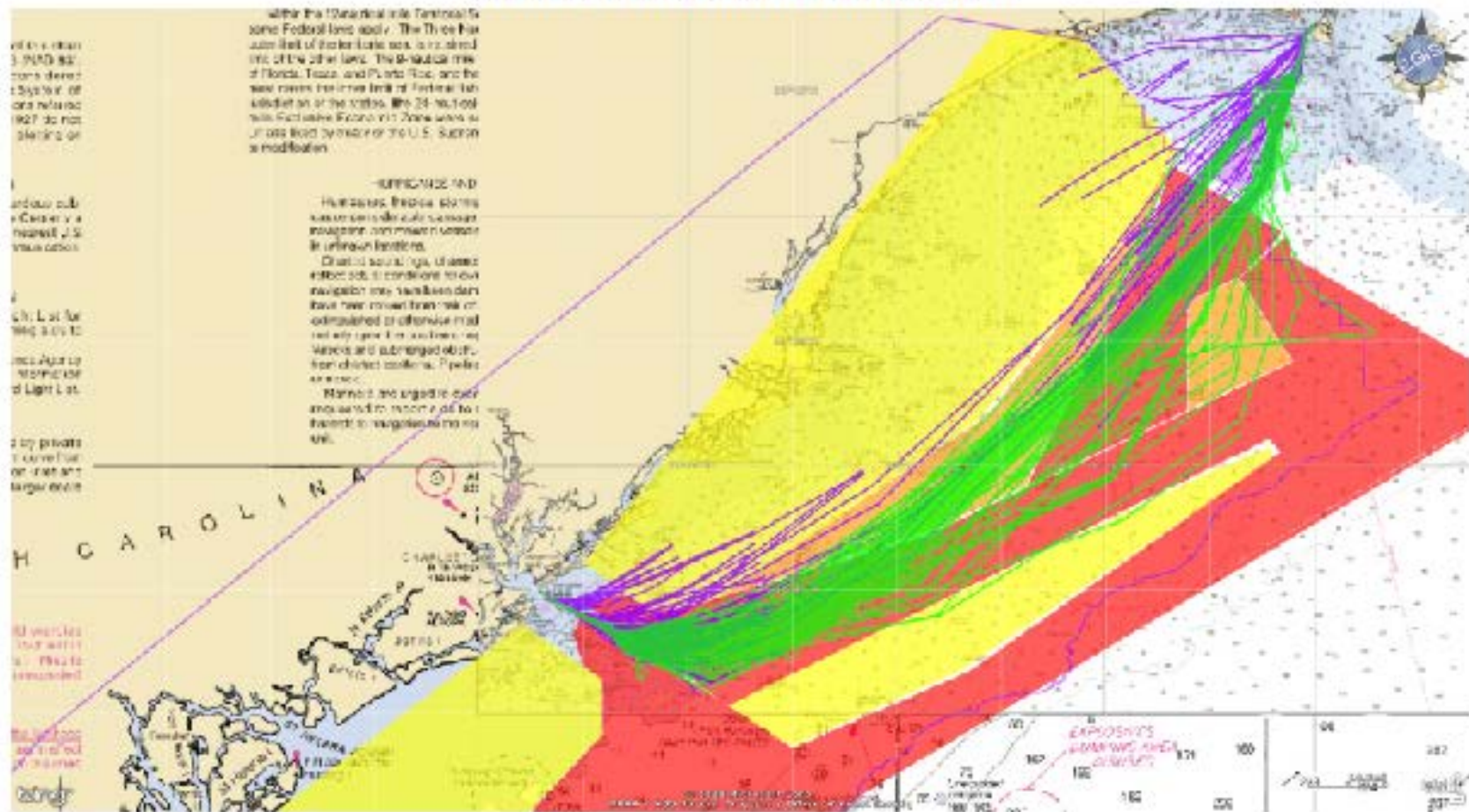


DRAFT
The projection of the modeled coverage is incorrect. This will be investigated and corrected in the next version. Please do not distribute.

The number of vessels was calculated in each aliquot (1/18th 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 vessels for the entire year.

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

Port to Port- Charleston and Wilmington



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zone Federal laws apply. The Thru line has
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of Florida, Texas, and Puerto Rico, and the
sea routes for the line of Federal law
extend all of the states. The 24-10-100
mile Exclusive Economic Zone area is
not the boundary of the U.S. State
in modification.

URGENT AND

Hazardous to the public health
and safety, and the safety of navigation
in various locations.

Obstruction of navigation, or other
interference with the navigation of vessels,
has been reported. The following
information is provided for your information
and to advise you of the location of the
obstruction. The obstruction is located
at the following location.

Hazardous to the public health
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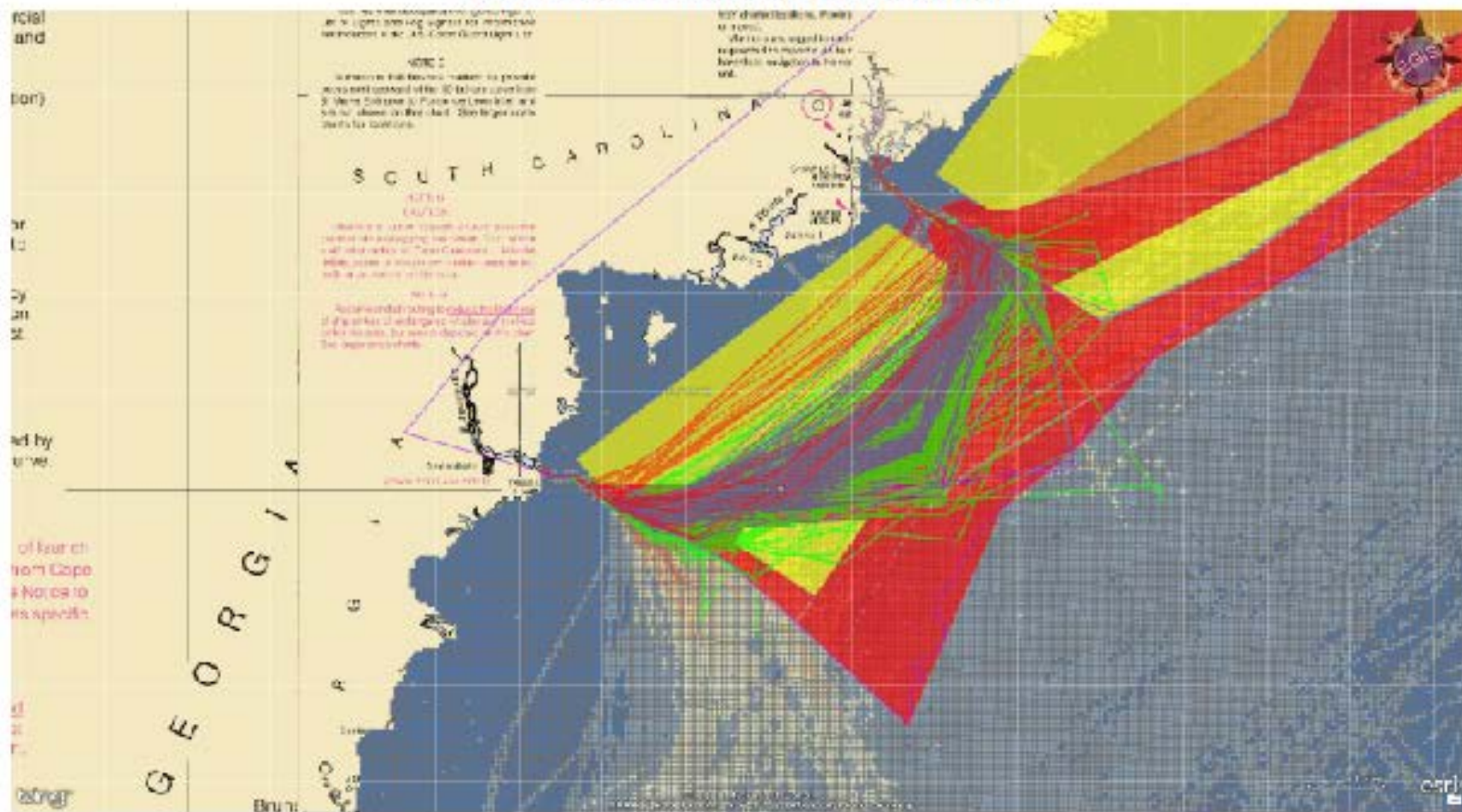
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Port to Port- Charleston and Savannah





Future Considerations

Marine Highways

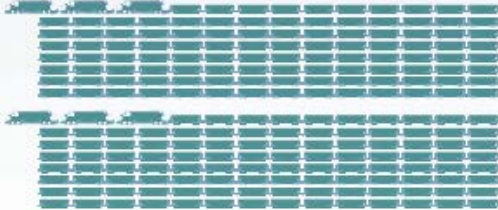


Maritime = Safer, More Efficient, Greener

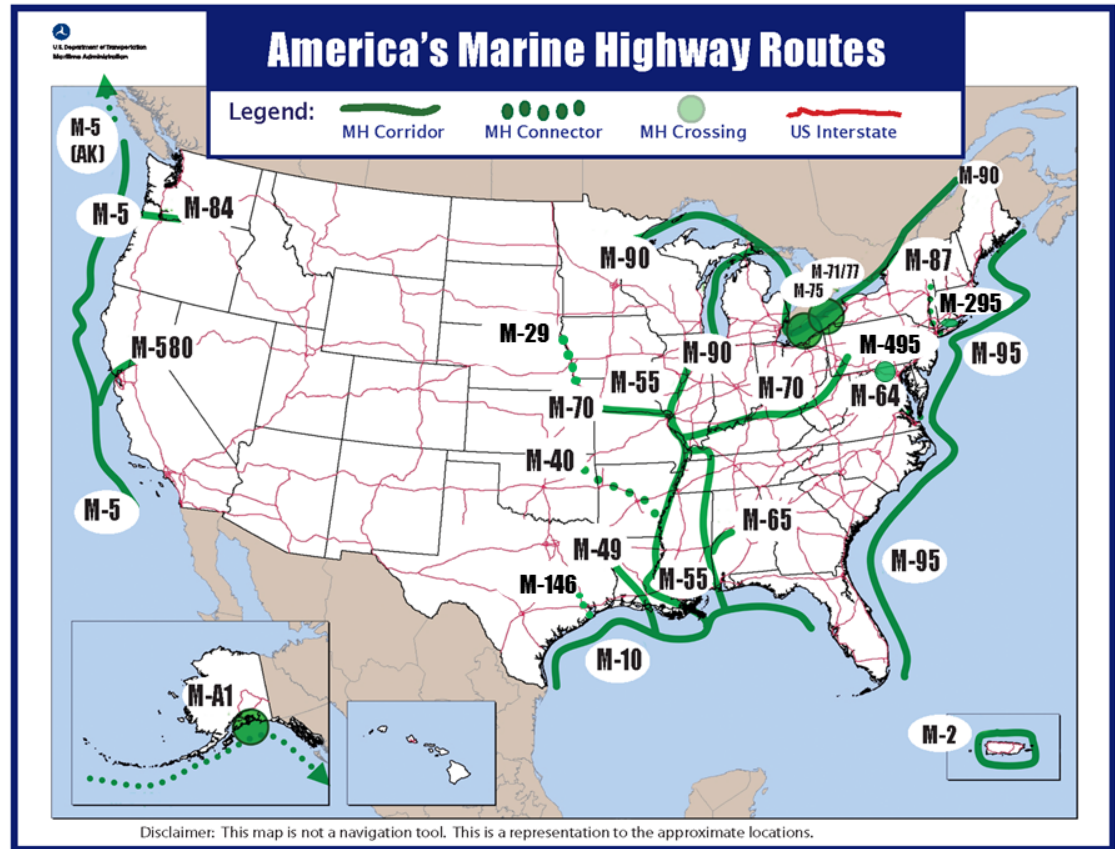
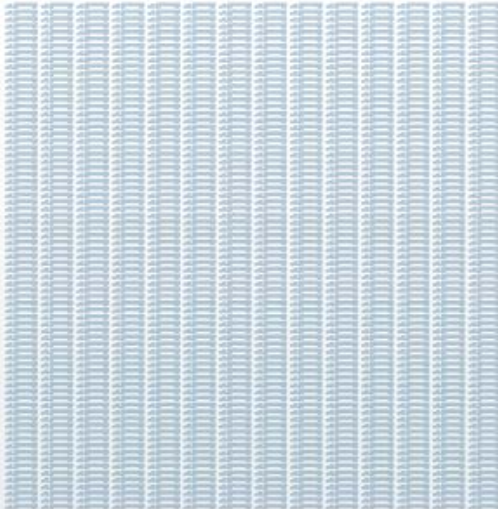
One 15-Barge Tow



216 Rail Cars + 6 Locomotives

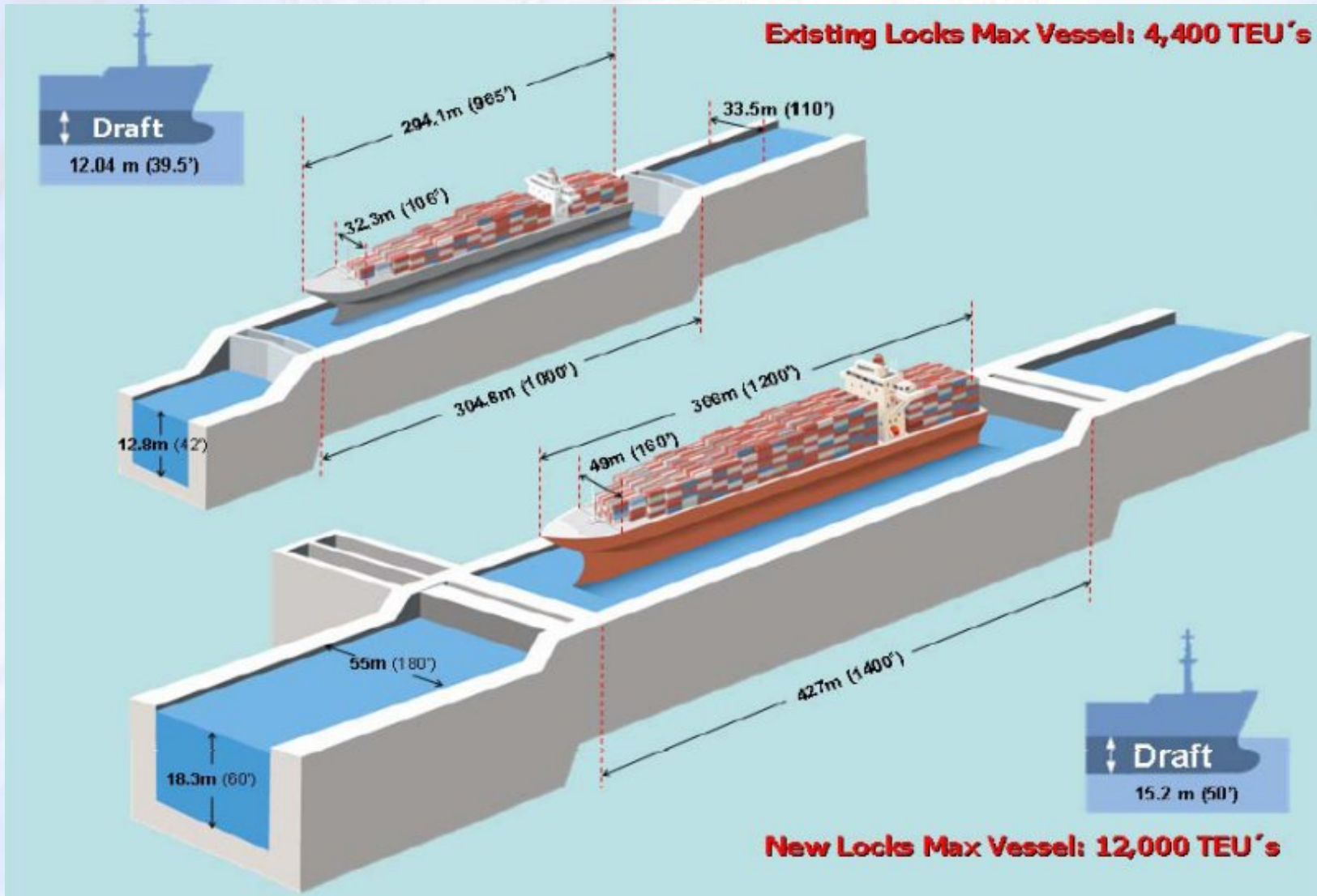


1,050 Large Semi Tractor-Trailers





Future Considerations Panama Canal Expansion





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<http://www.uscg.mil/lantarea/ACPARS/>

Proceedings Magazine

<http://www.uscg.mil/proceedings/>

DoD and USCG Assessments

