Agenda
State of North Carolina
Bureau of Ocean Energy Management (BOEM)
Offshore Wind Development - Stakeholder Meeting
Thursday August 20, 2010

- Overview — Jennifer Bumgarner and Larry Shirley - NC Department of Commerce
- Offshore Wind Technology — Bob Leker - NC Department of Commerce
- BOEM Introduction — Al Pless - BOEM
- Regulatory Framework, Offshore Renewable Energy Development — Jessica Bradley – BOEM
- Environmental Review Process — Jennifer Kilanski – BOEM
- BOEM – North Carolina Renewable Energy Task Force — Al Pless
- Panel Discussion — Bob Leker

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Renewable Energy Overview

North Carolina Offshore Wind

Jessica Bradley
Jennifer Kilanski
Al Pless

Office of Renewable Energy Programs

U.S. Department of the Interior
Bureau of Ocean Energy

Philosophy

- BOEM is committed to work together with States to determine when and where to undertake OCS leasing
- This team approach will insure efficient, safe, & environmentally sound ocean energy development
- Coordinate with all stakeholders
- Apply our renewable energy regulatory framework in conjunction with interagency-led planning activities
- Encourage compatible multiple-use

Consultation and Coordination

Task Forces

- Established at Governor's request
- Include state, local, and tribal governments, and Federal agencies
- Facilitate efficient review process for renewable energy planning and leasing activities
- Inform the BOEM OCS Renewable Energy Program (e.g., environmental/technical studies)

Intergovernmental Task Forces

- **Task Force States**: Massachusetts, New Jersey, Rhode Island, Delaware, Virginia, Maryland, and Maine
- **On the Horizon**: North Carolina, New York, South Carolina, Florida

Massachusetts

- Renewable Energy Portfolio Standard
- Renewable Energy Task Force
- Cape Wind
  - On April 28th Secretary Salazar signed a record of decision
  - Cleared the way to offer a commercial lease to the developer.
  - 130 – 3.6 MW turbines – 468 MW.
- Ocean Management Plan

Rhode Island

- Renewable Portfolio Standard
- Renewable Energy Task Force
- Special Area Management Plan (SAMP)
  - Insure compatibility between offshore wind and sustainability of the offshore resource
- Potential Area for wind Farm Development Identified

New Jersey

- Renewable Portfolio Standard
  - Energy Master Plan
- Renewable Energy Task Force
- Baseline Environmental Study
- Three Interim Policy Leases
- Met Tower Reimbursement
- Offshore Renewable Energy Credit for Offshore Wind

Delaware

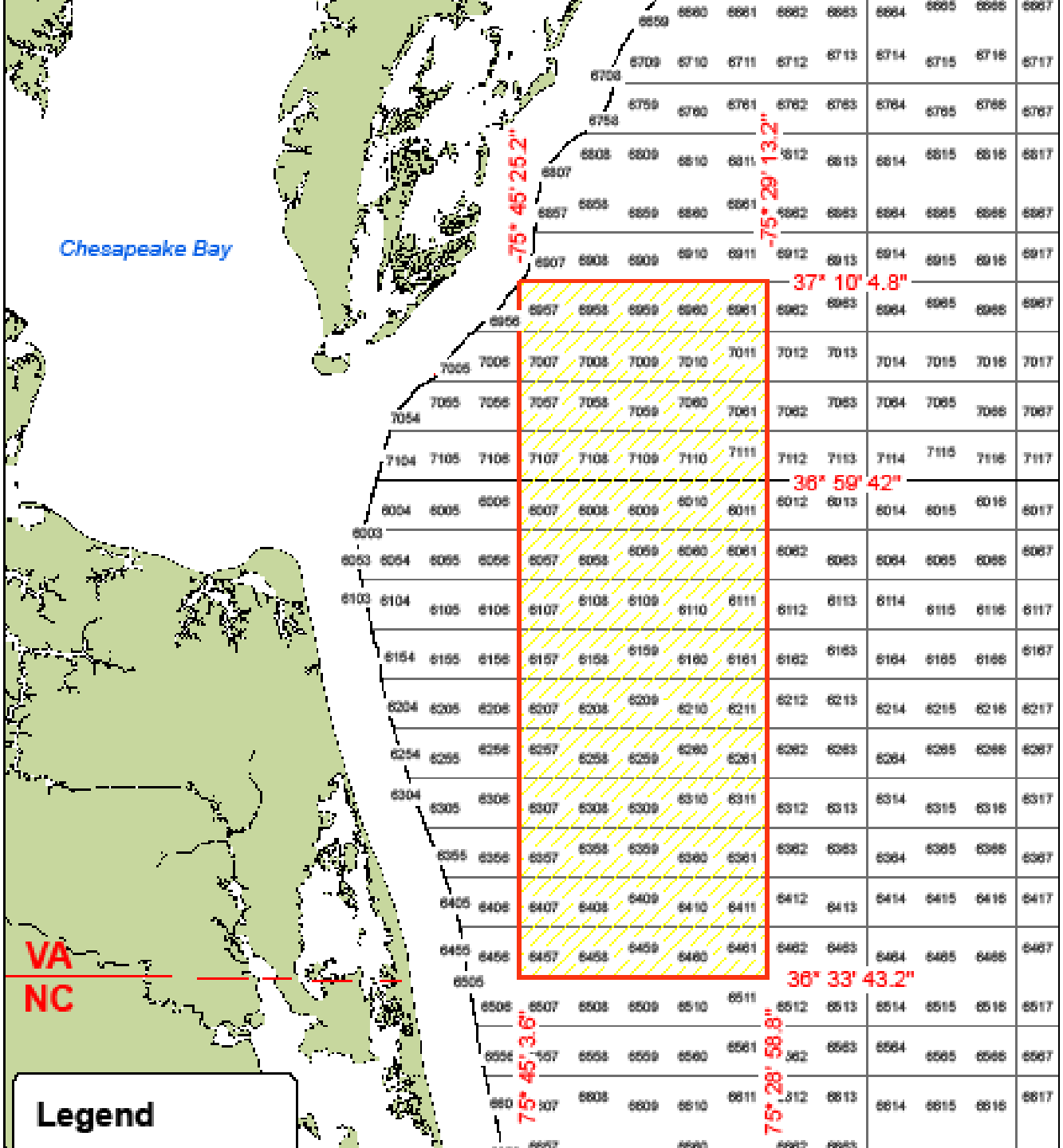
- Renewable Portfolio Standard
- Renewable Energy Task Force
- One IP Lease issued in November 2009
- Developer and Delmarva Power PPA
- Cooperative Research and Development Agreement with DOE
- Request For Interest Published this past Spring
  - Received 2 Expressions of Interest

Maryland

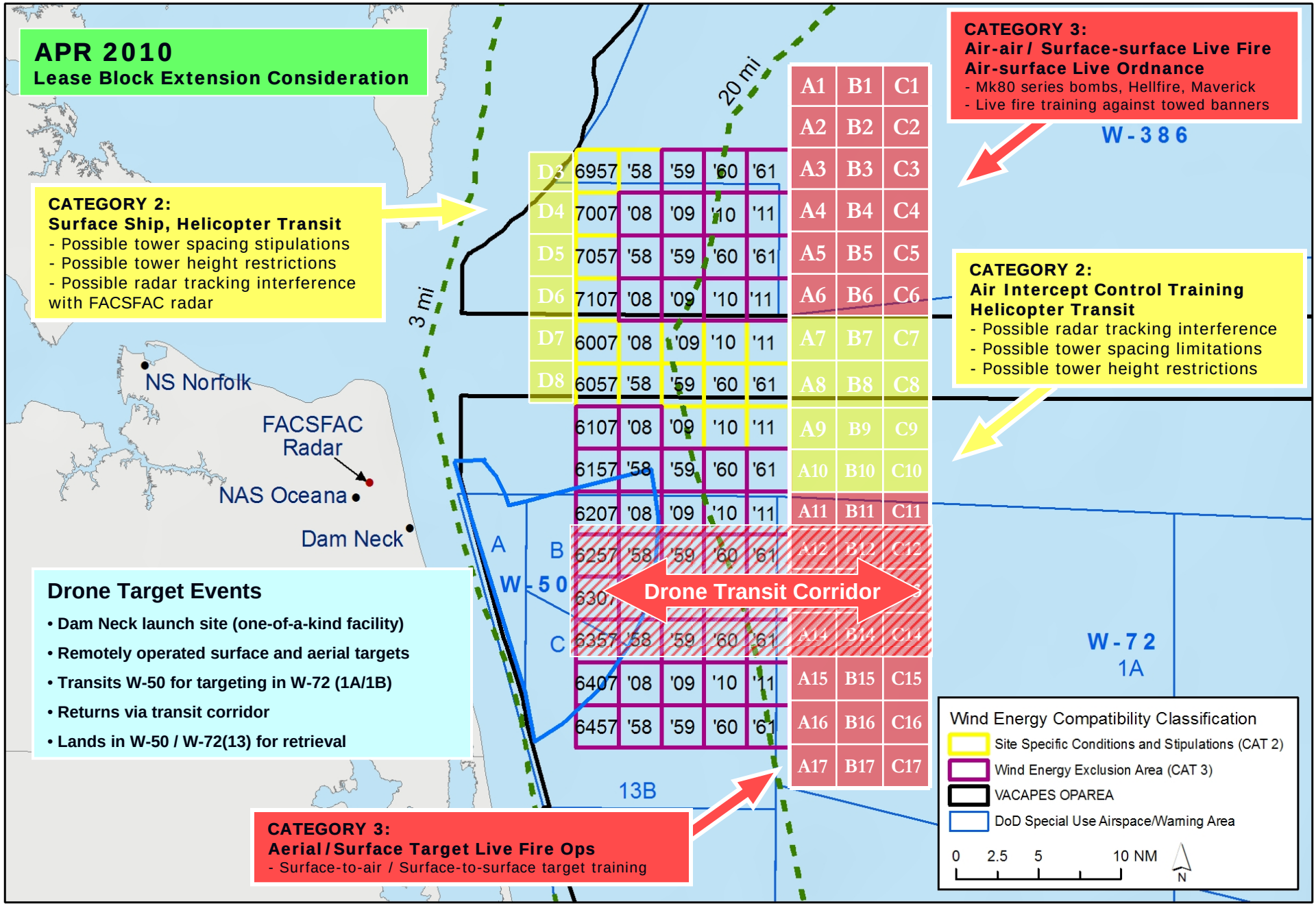
- Renewable Portfolio Standard
- Renewable Energy Task Force
- Coastal Community Stakeholder Outreach
- Potential RFI Area

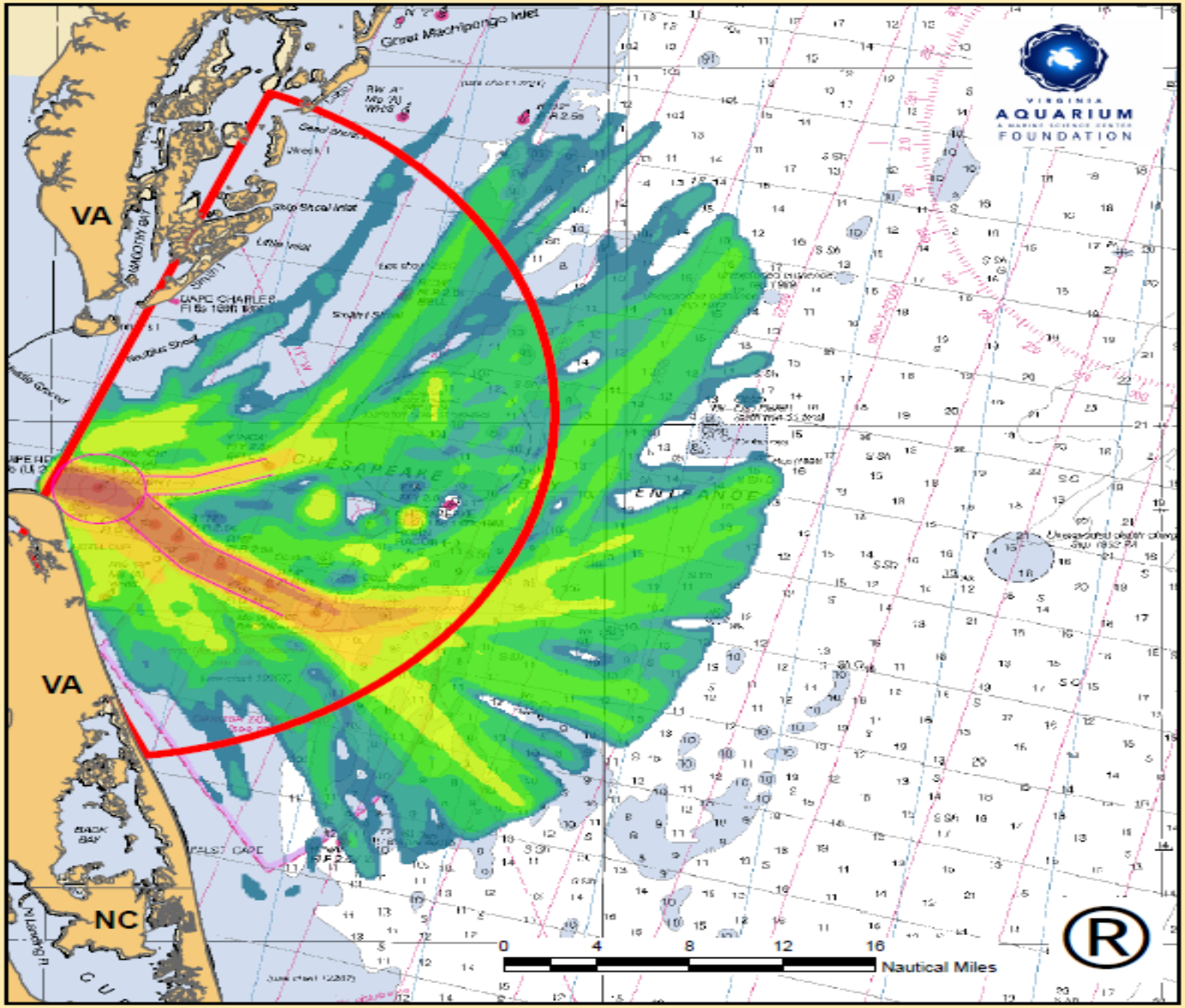
Virginia

- Renewable Energy Portfolio Goal
- Renewable Energy Task Force
- Triple Credit for Offshore Wind
- Virginia Offshore Wind Development Authority
- Virginia Offshore Wind Coalition
- Multi-University Collaborative Research


Chesapeake Bay
VA
NC
-75° 45' 25.2"
-75° 29' 13.2"
37° 10' 4.8"
36° 59' 42"
36° 33' 43.2"
75° 45' 3.6"
75° 28' 58.8"
Legend

VACAPES/VCERC WIND FARM PROPOSAL – FLEET ASSESSMENT

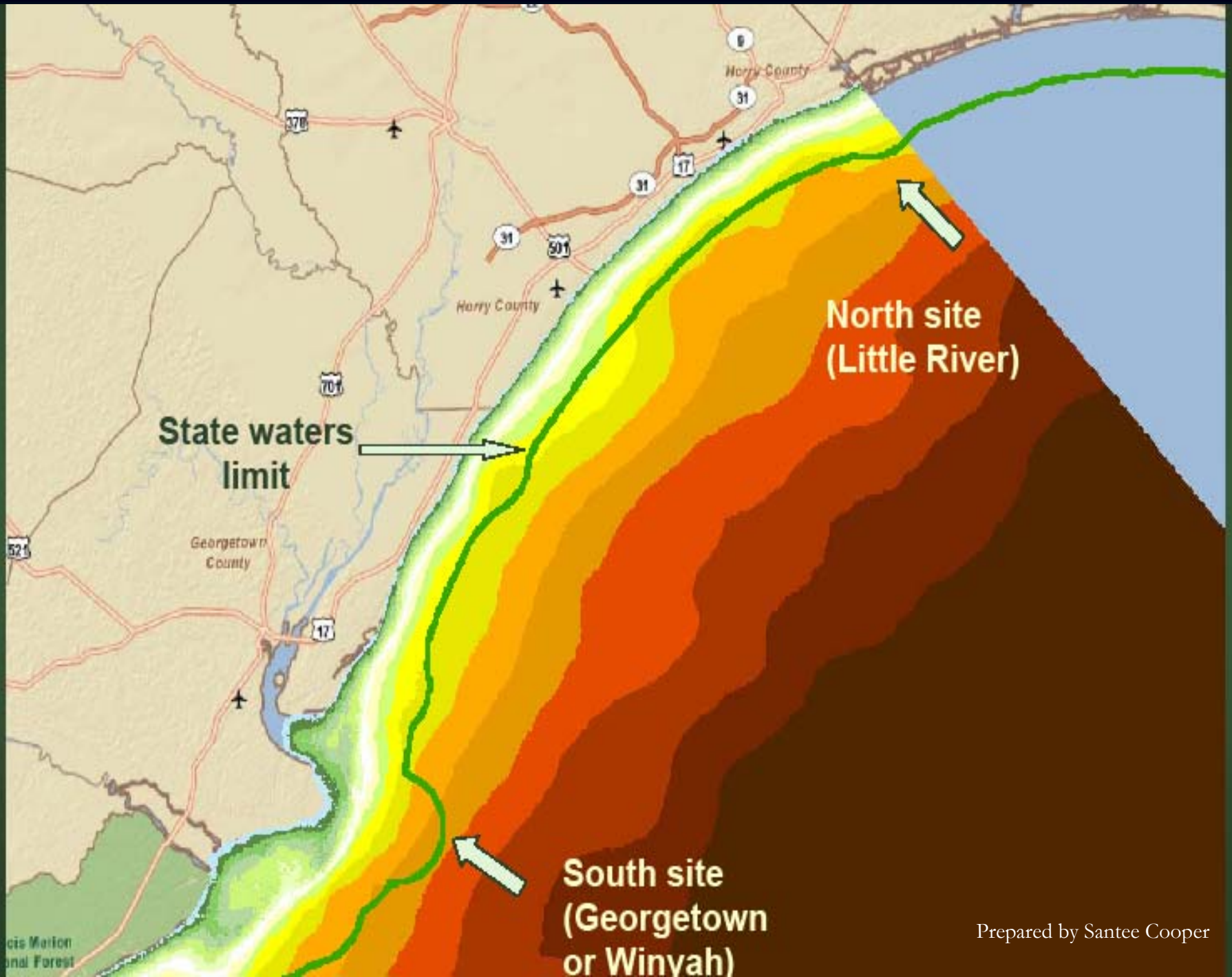




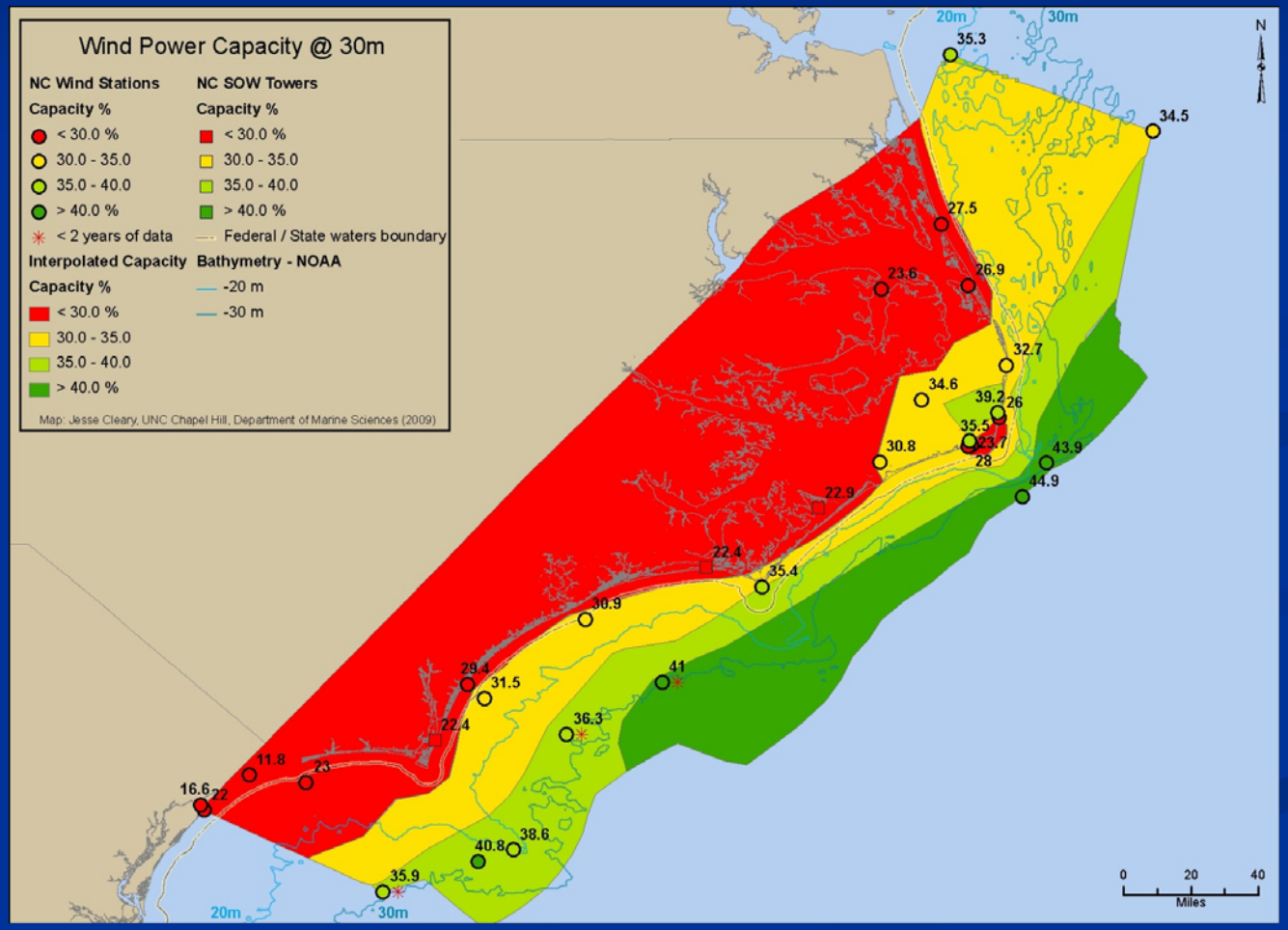
Density of AIS and RADAR Vessels (13:30-21:30 GMT) (April 2008 - March 2009)

South Carolina

- SE Regional Wind Symposium
- Coastal Wind For Schools
- Palmetto Winds Research - Wind Mapping
  - DOE Grant Supplemented by Santee Cooper
  - Six buoys and two Observation Stations
- Identification of Exclusion Zones

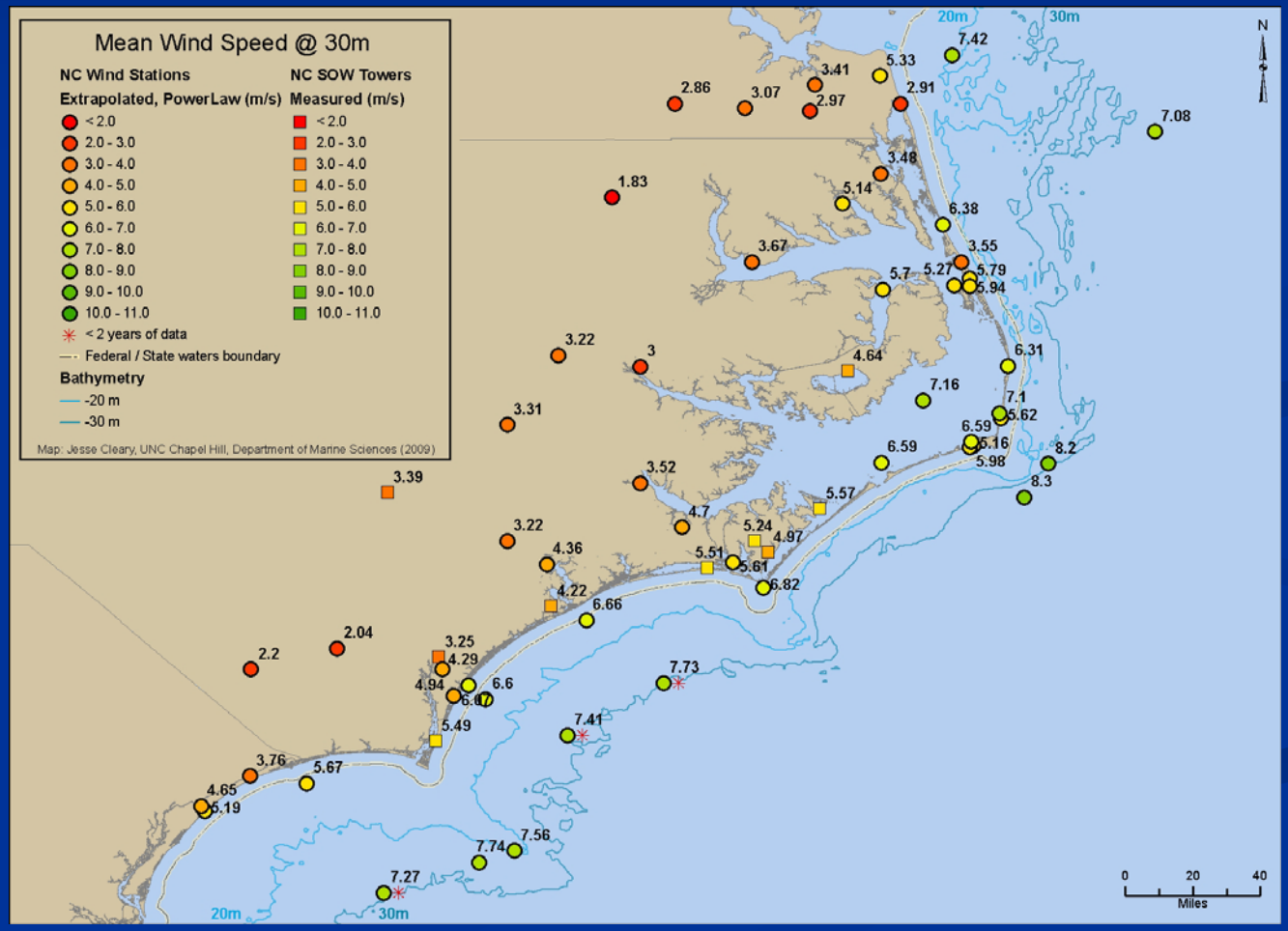

Horry County
Horry County
Georgetown County
State waters limit
North site (Little River)
South site (Georgetown or Winyah)
Prepared by Santee Cooper

North Carolina Capacity Factor Map



Prepared by H. Seim

North Carolina Power Law Data Estimates Higher Offshore Wind



Prepared by H. Seim

Foundation Suitability Based on Geology and Geologic Dynamics

Federal / State waters boundary

Bathymetry - NOAA

-20 m

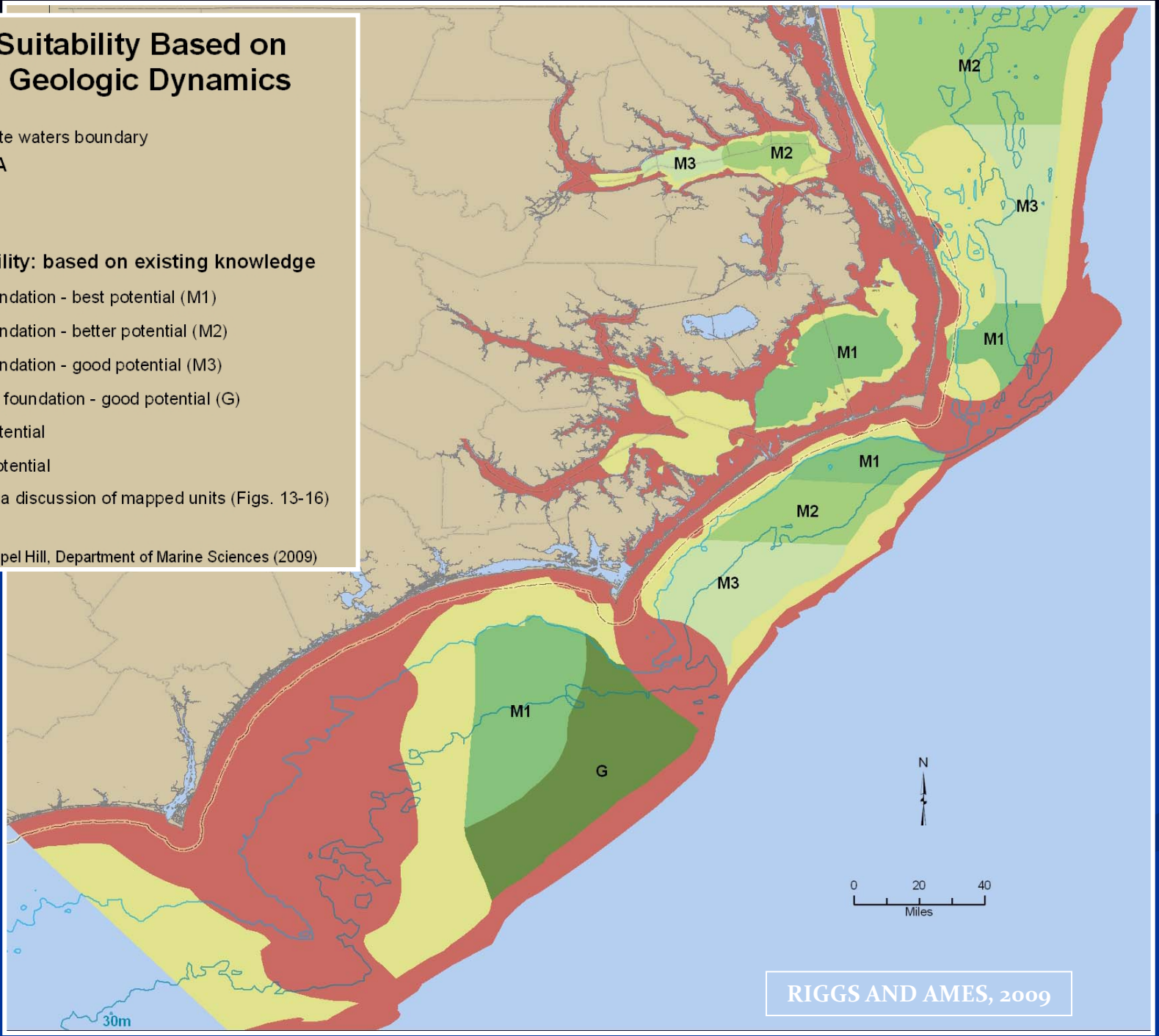
-30 m

Foundation Suitability: based on existing knowledge

- M1 — Monopile foundation - best potential (M1)
- M2 — Monopile foundation - better potential (M2)
- M3 — Monopile foundation - good potential (M3)
- G — Gravity Base foundation - good potential (G)
- Moderate Potential
- No to Low Potential

See Chapter 4 text for a discussion of mapped units (Figs. 13-16)

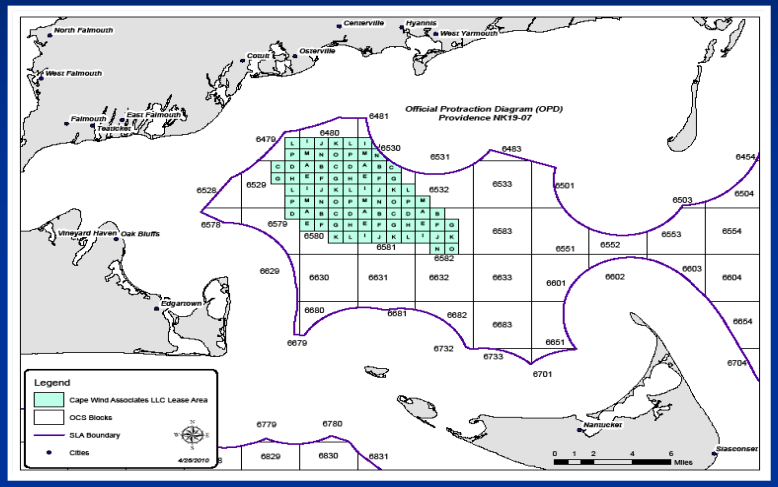
Map: Jesse Cleary, UNC Chapel Hill, Department of Marine Sciences (2009)

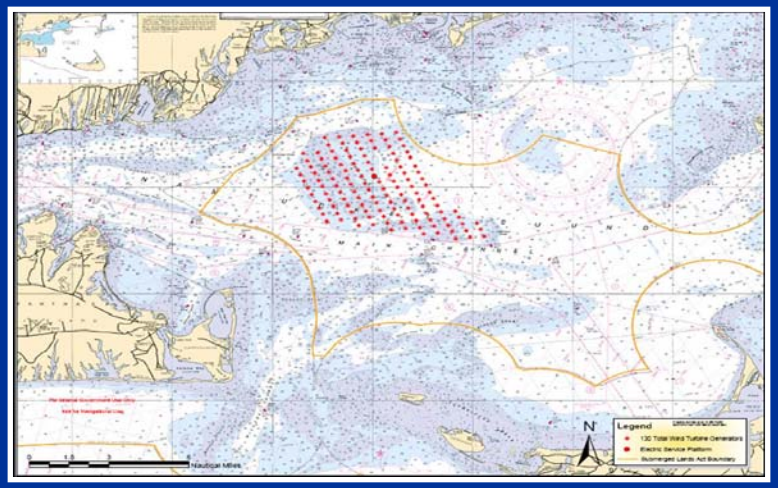


Department of Geological Sciences

RIGGS AND AMES, 2009

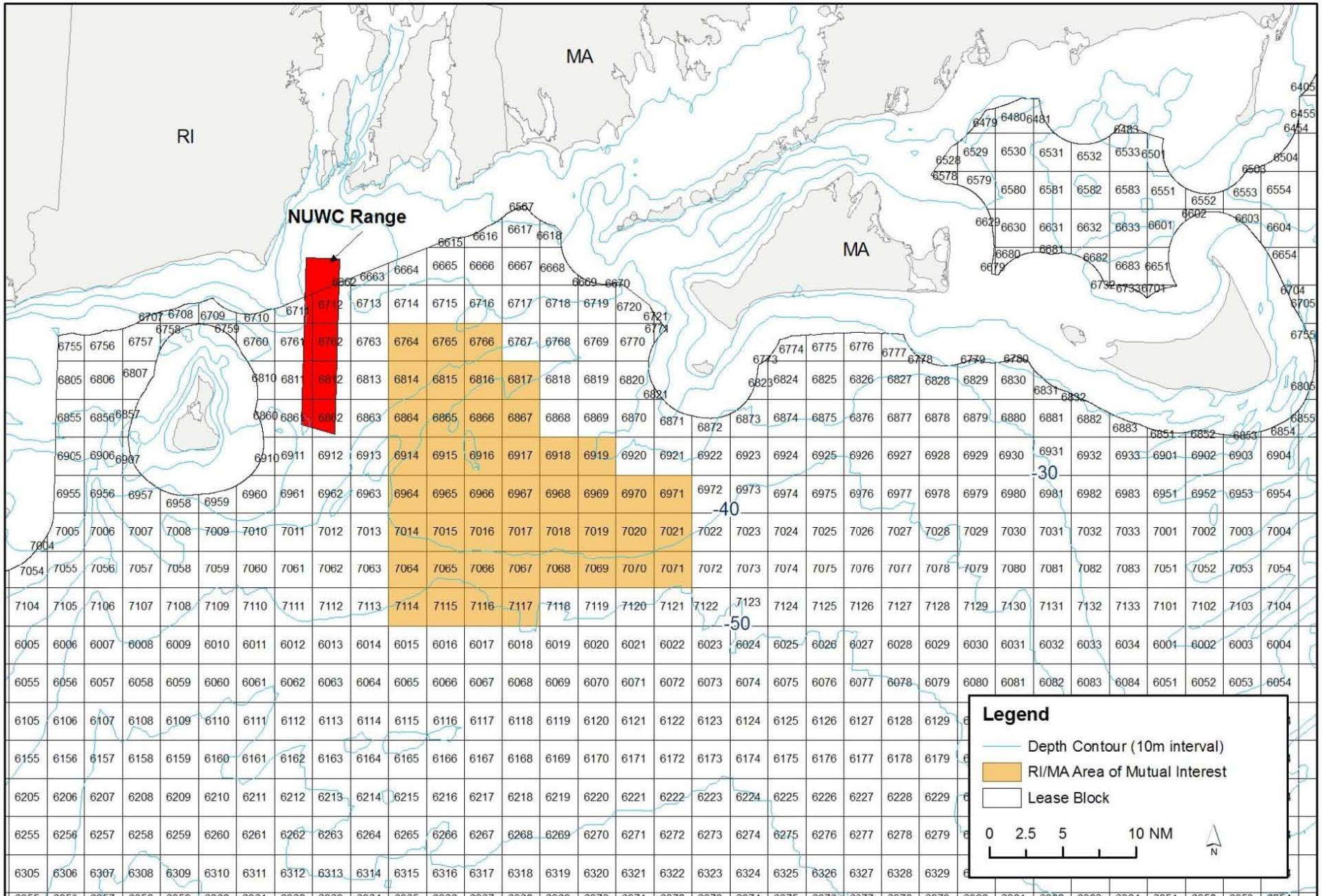
Cape Wind Energy Project

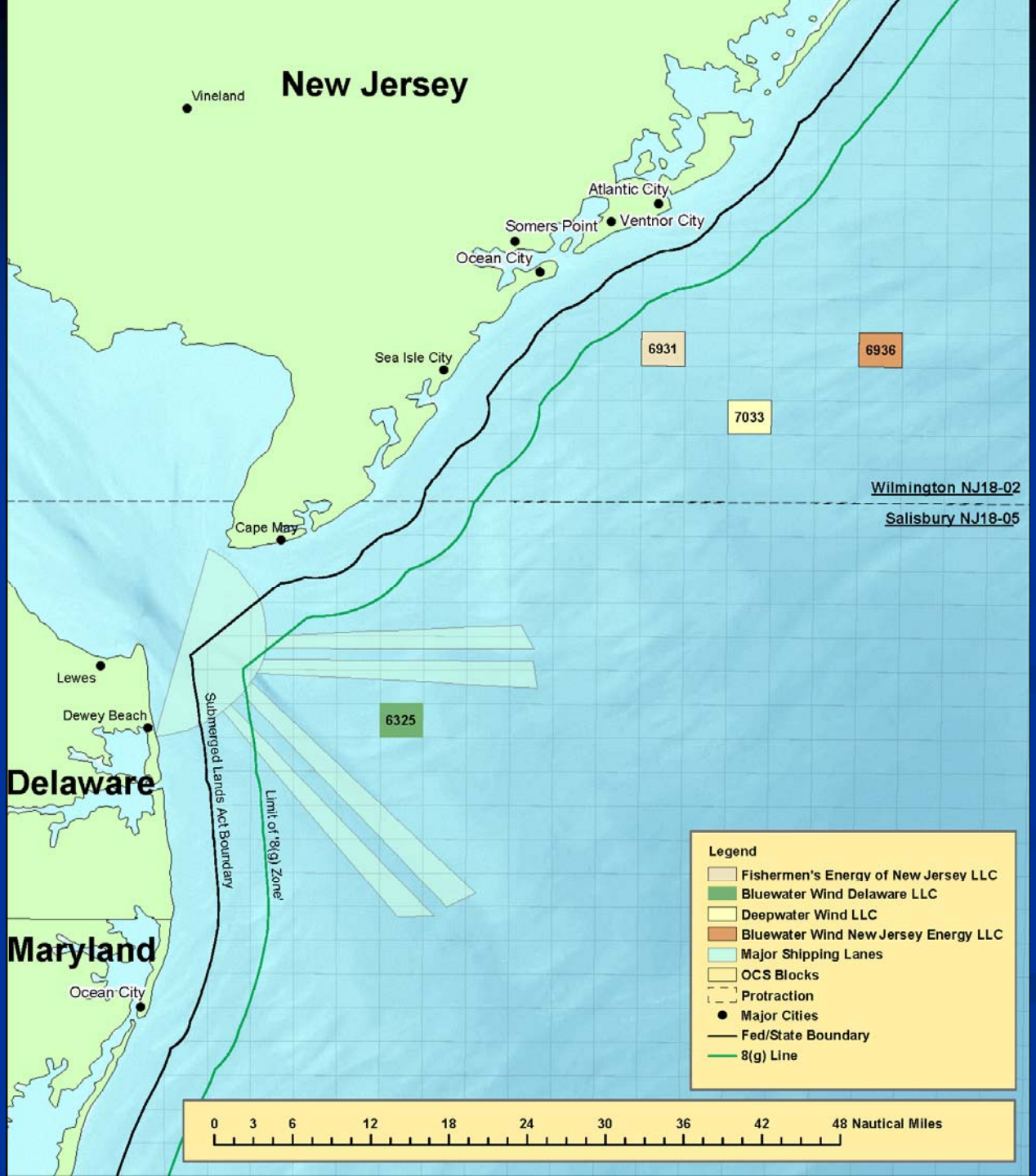


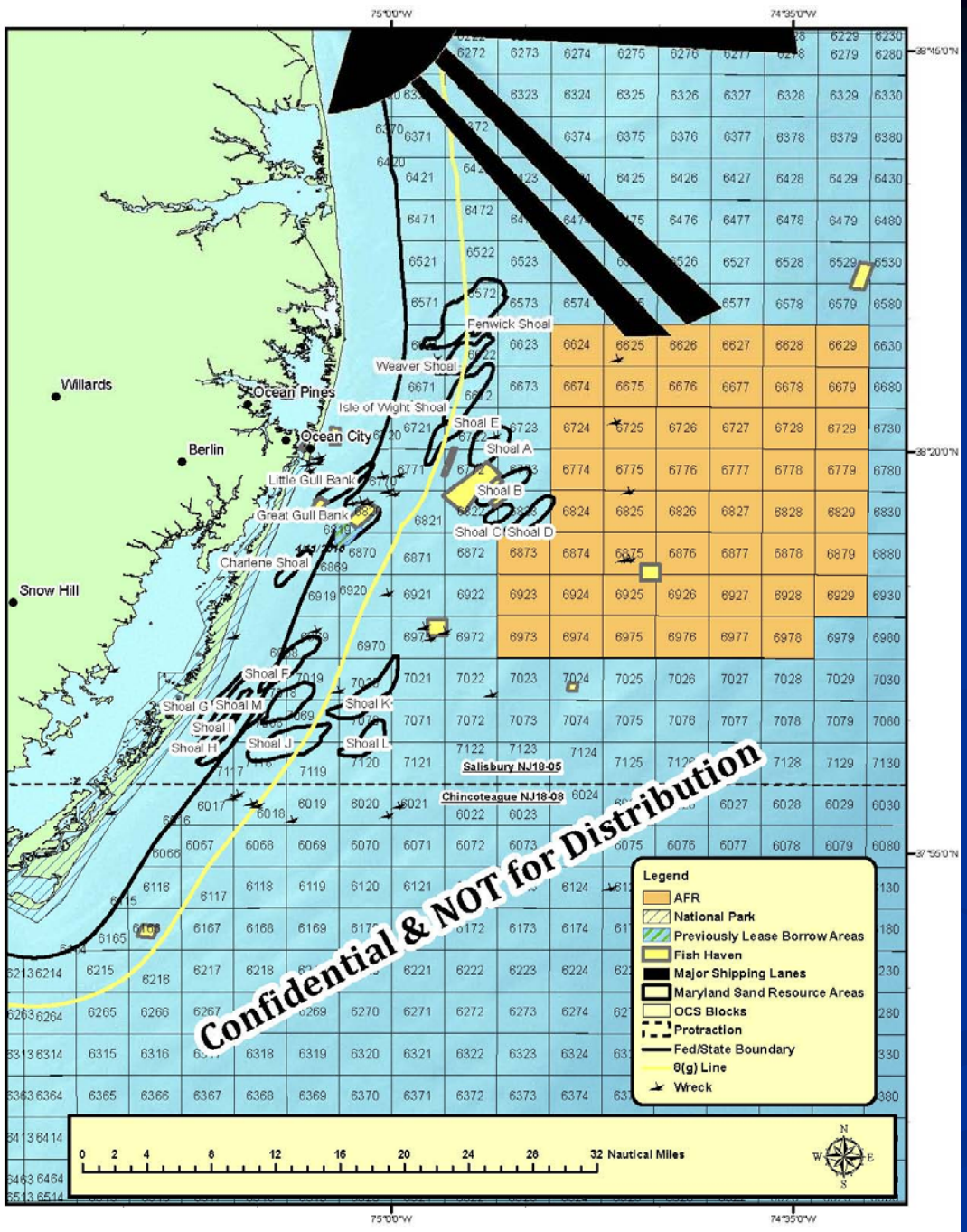


- Propose to construct 130, 3.6 MW wind turbine generators offshore Massachusetts
- Final Environmental Impact Statement (FEIS) published in **January 2009**
- Record of Decision issued in **April 2010**

Potential Offshore Wind RFI: MA & RI and the Narragansett Bay Shallow Water Test Facility

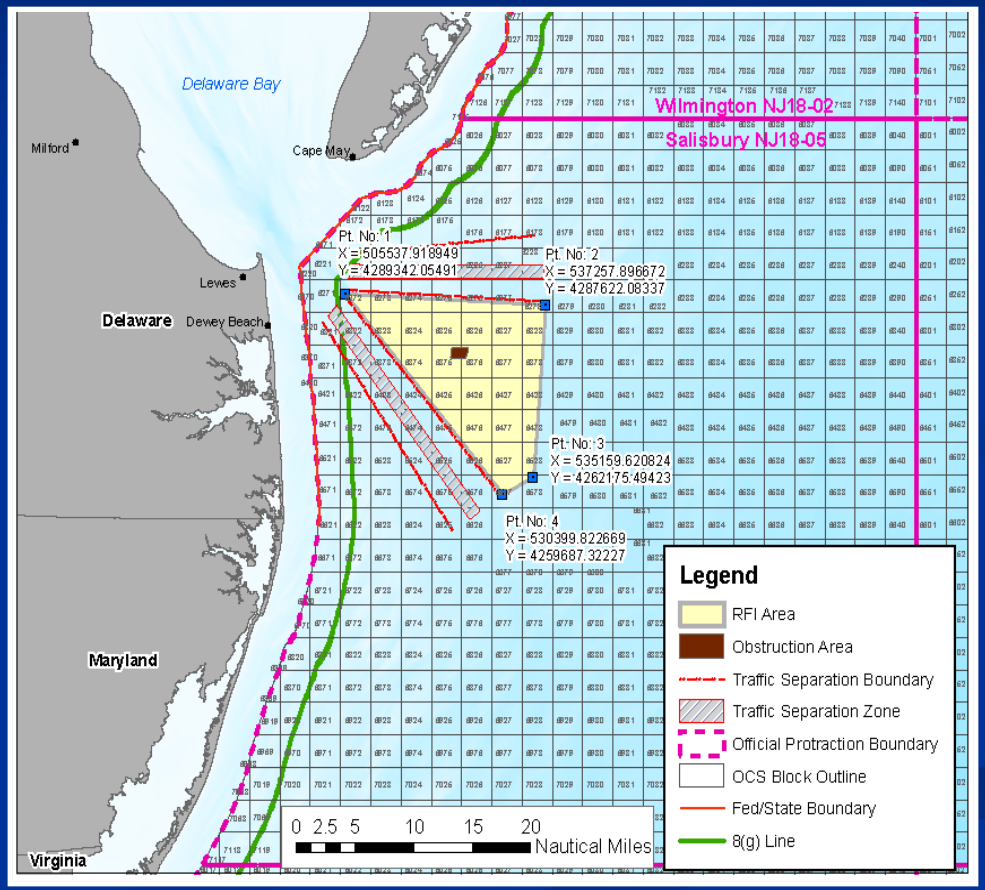



New Jersey
Vineland
Atlantic City
Somers Point
Ventnor City
Ocean City
Sea Isle City
6931
6936
7033
Wilmington NJ18-02
Salisbury NJ18-05
Cape May
Lewes
Dewey Beach
6325
Delaware
Maryland
Ocean City
Submerged Lands Act Boundary
Limit of '8(g) Zone'
Legend
Fishermen's Energy of New Jersey LLC
Bluewater Wind Delaware LLC
Deepwater Wind LLC
Bluewater Wind New Jersey Energy LLC
Major Shipping Lanes
OCS Blocks
Protraction
Major Cities
Fed/State Boundary
8(g) Line
0 3 6 12 18 24 30 36 42 48 Nautical Miles


75°00'W
74°35'0"W
38°45'0"N
38°20'0"N
37°55'0"N
Willards
Ocean Pines
Ocean City
Berlin
Snow Hill
Fenwick Shoal
Weaver Shoal
Isle of Wight Shoal
Shoal E
Shoal A
Shoal B
Shoal C
Shoal D
Little Gull Bank
Great Gull Bank
Charlene Shoal
Shoal F
Shoal G
Shoal M
Shoal K
Shoal I
Shoal H
Shoal J
Shoal L
Salisbury NJ18-05
Chincoteague NJ18-08
Confidential & NOT for Distribution
Legend
AFR
National Park
Previously Lease Borrow Areas
Fish Haven
Major Shipping Lanes
Maryland Sand Resource Areas
OCS Blocks
Protraction
Fed/State Boundary
8(g) Line
Wreck
0 2 4 8 12 16 20 24 28 32 Nautical Miles
N
W
E
S

Potential Commercial Projects

- **Delaware**
- Published an RFI to **determine interest in commercial wind** development in an area offshore
  - 8 responses received
  - 2 commercial nominations



Wind Study Work

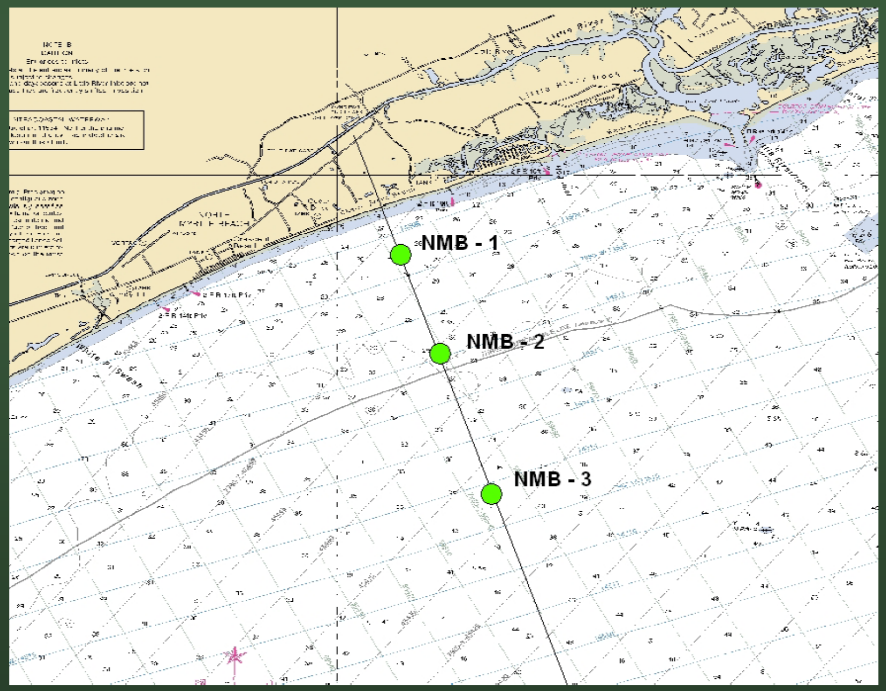
- Wind Mapping
- SE Regional Off-shore Wind Symposium
- 50 meter Anemometer Stations
- SODAR development for offshore use
- Coastal Wind for Schools Program
  - 4 educational sites in progress
- Extensive Study of Offshore Wind Feasibility
  - Two Grants from DOE
  - Exclusion Zones

PALMETTO RESEARCH PROJECT WIND

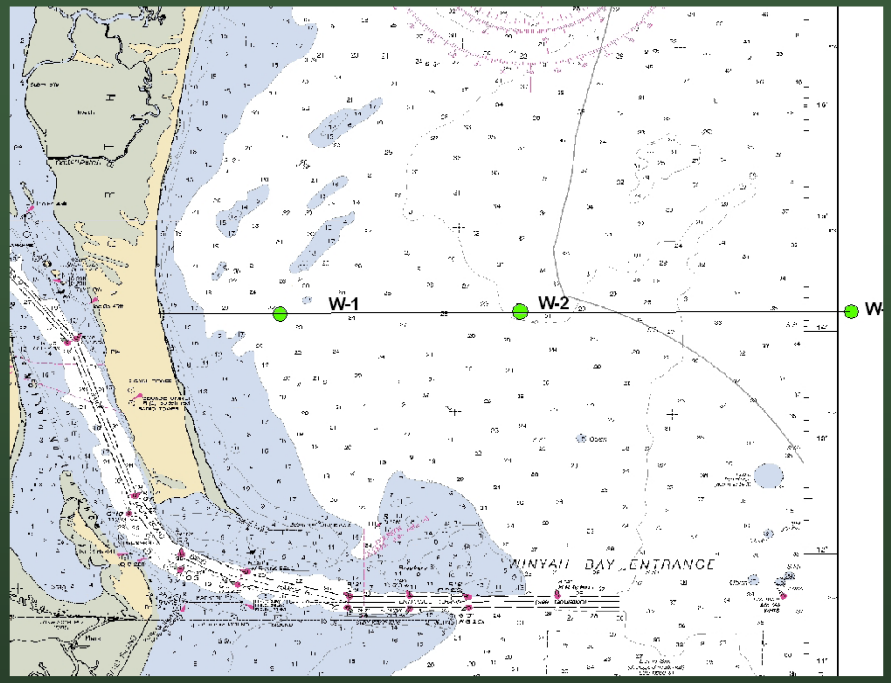
Palmetto Winds Research Project

santee cooper

- DOE Grant provides partial funding, Santee Cooper provided funding to extend study to one year
- 6 instrumentation buoys, 2 shore-based observation stations



North Myrtle Beach



Winyah