

# Bureau of Ocean Energy Management Fishing and Offshore Energy— Best Management Practices

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# Overview

- Stages of Development
- Purpose of Workshops
- Wind Energy Area Status
- Current Best Management Practices
- Opportunities for Input
- BOEM Environmental Studies Program

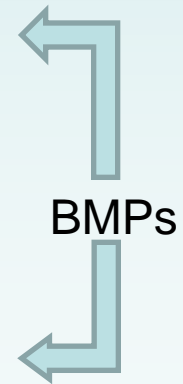
# Stages of Development

**Planning and Analysis:**  
Task Force Consultation → Public Notice & Comment → Identify Wind Energy Areas → Environmental Assessment

**Leasing:**  
Notice → Comment → Analysis → Issuance

Site Assessment Plan  
(Surveys / Met Buoys)

Construction &  
Operations Plan  
EIS



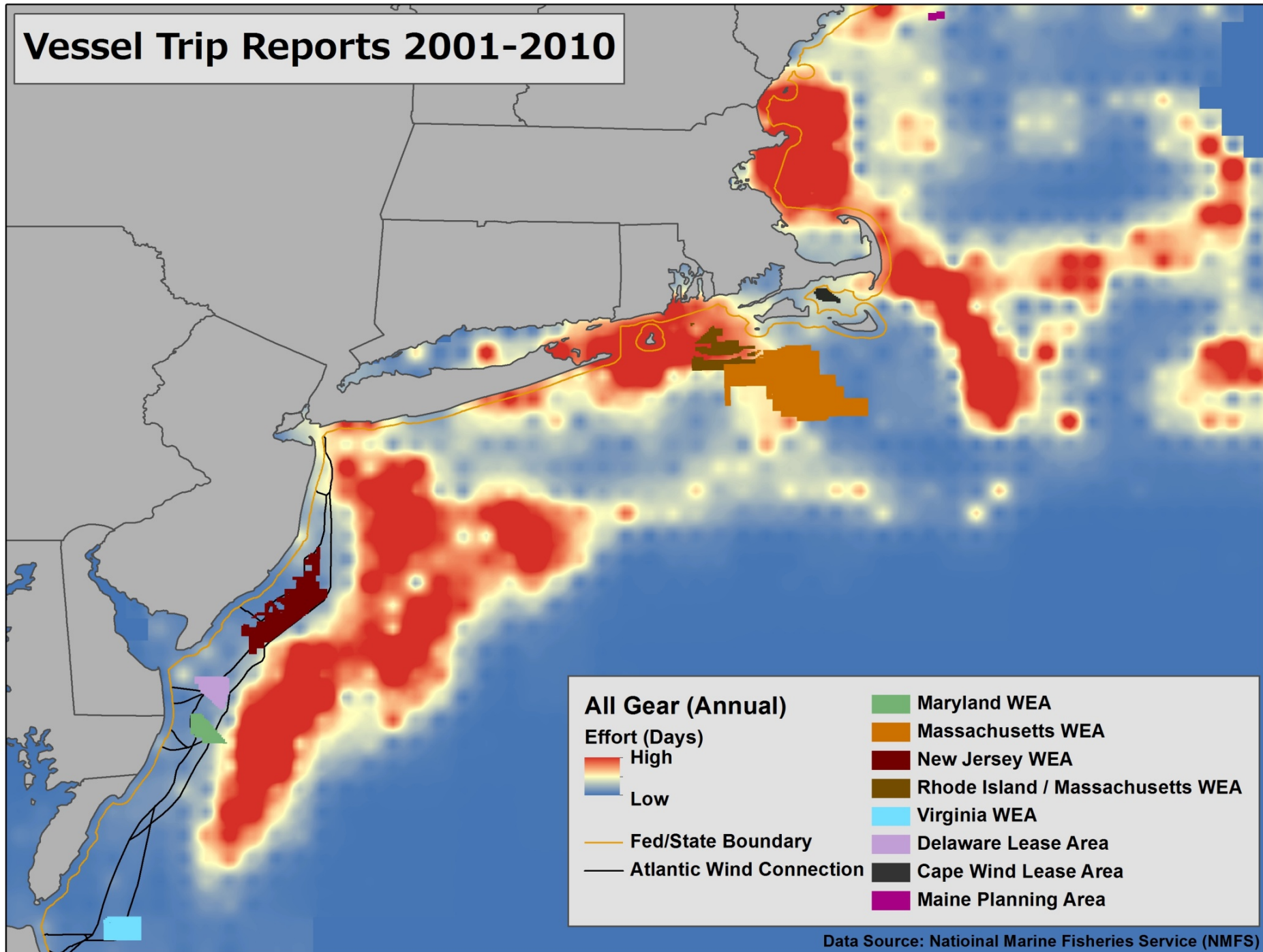
# Purpose of Workshops

- Opportunity to provide input on the construction and operational phases.
- Near term product- updated list of fishing-related best management practices (BMPs).
- Long term product – application of new fishing-related BMPs to the review of site assessment plans (SAPs), construction and operation plans (COPs), and general activity plans (GAPs).

# Workshop Development

- Identified as a need to address construction and operation concerns in 2011.
- BOEM and E&E consulted with state and Federal partners, the fishery councils and wind industry representatives.
- Invitation lists are based primarily on BOEM and FMC mailing lists for the states where the meeting is taking place.

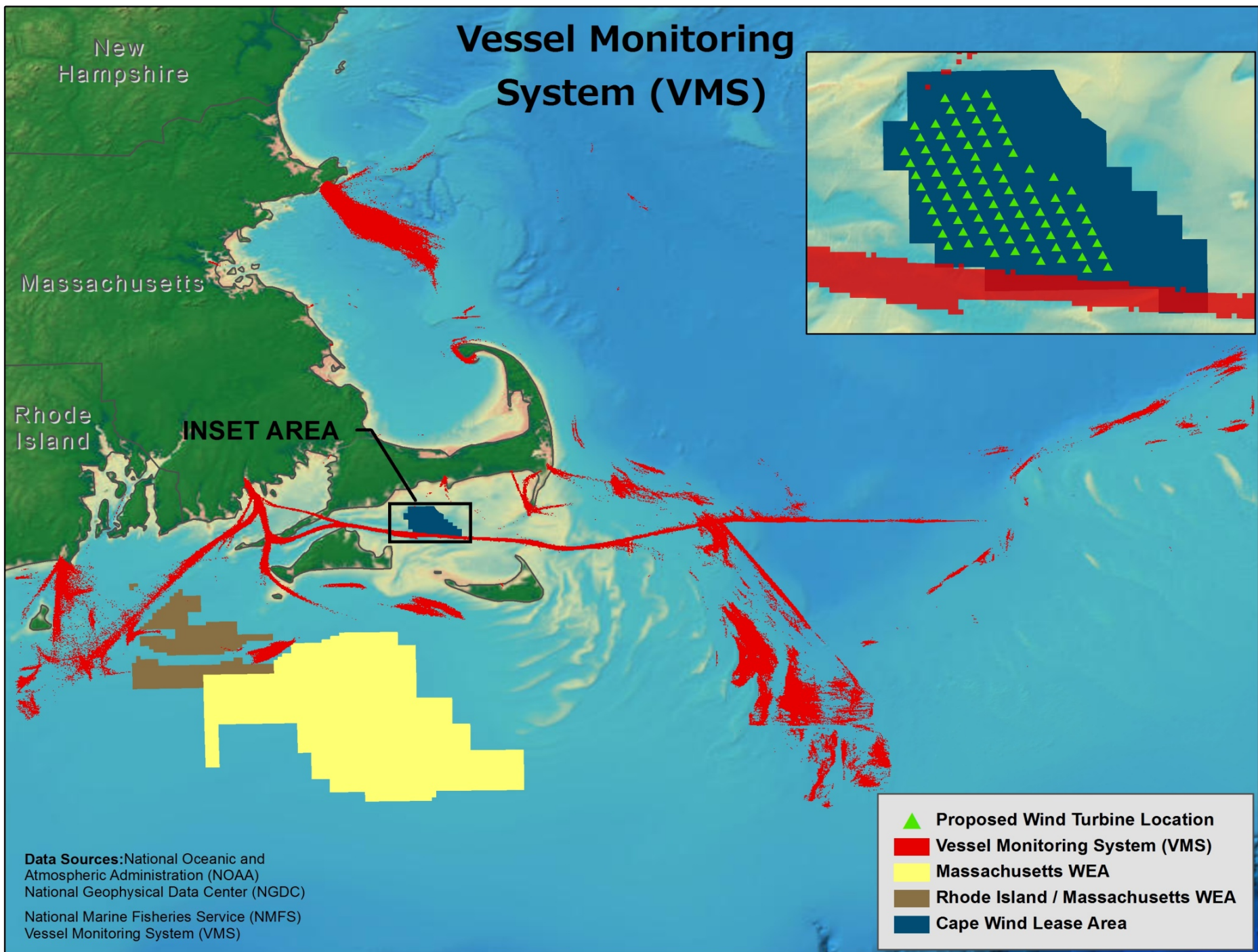
# Vessel Trip Reports 2001-2010



Data Source: National Marine Fisheries Service (NMFS)

Map ID: EPR-2012-1082

# Vessel Monitoring System (VMS)



New Hampshire

Massachusetts

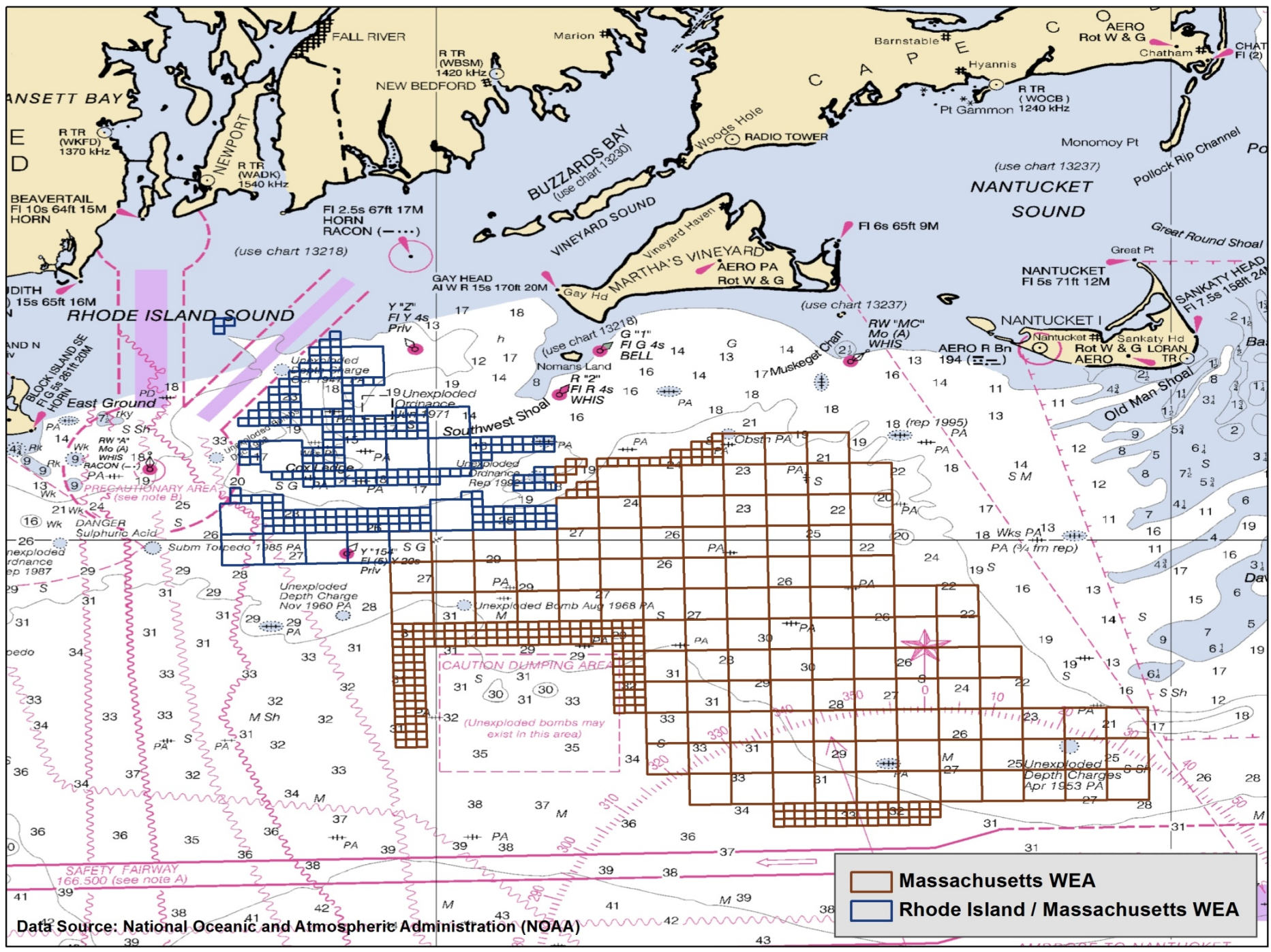
Rhode Island

INSET AREA

**Data Sources:** National Oceanic and Atmospheric Administration (NOAA)  
National Geophysical Data Center (NGDC)  
National Marine Fisheries Service (NMFS)  
Vessel Monitoring System (VMS)

**Legend:**

- ▲ Proposed Wind Turbine Location
- Vessel Monitoring System (VMS)
- Massachusetts WEA
- Rhode Island / Massachusetts WEA
- Cape Wind Lease Area



Data Source: National Oceanic and Atmospheric Administration (NOAA)

	Massachusetts WEA
	Rhode Island / Massachusetts WEA



# Fishing and Wind Energy Questions

- Navigation
  - Radar performance
    - Offshore wind facilities can affect the noticeability of objects by radar.
  - Obstruction marking
    - All facilities will be appropriately marked at sea and charted in accordance with USCG regulations.

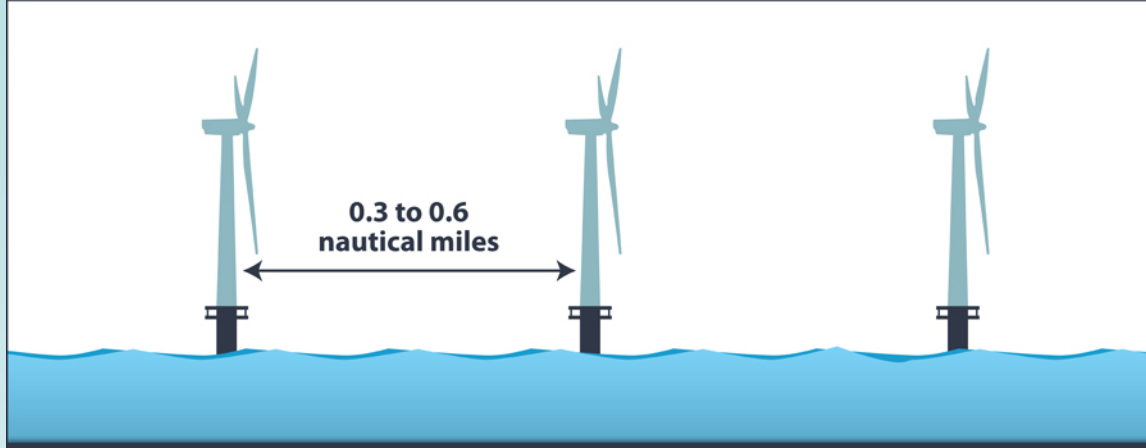
# Fishing and Wind Energy Questions

- Search and Rescue
  - USCG has indicated that search and rescue operations will not be hindered in a wind facility.
  - USCG will be able to call for an immediate shutdown when necessary.

# Fishing and Wind Energy Questions

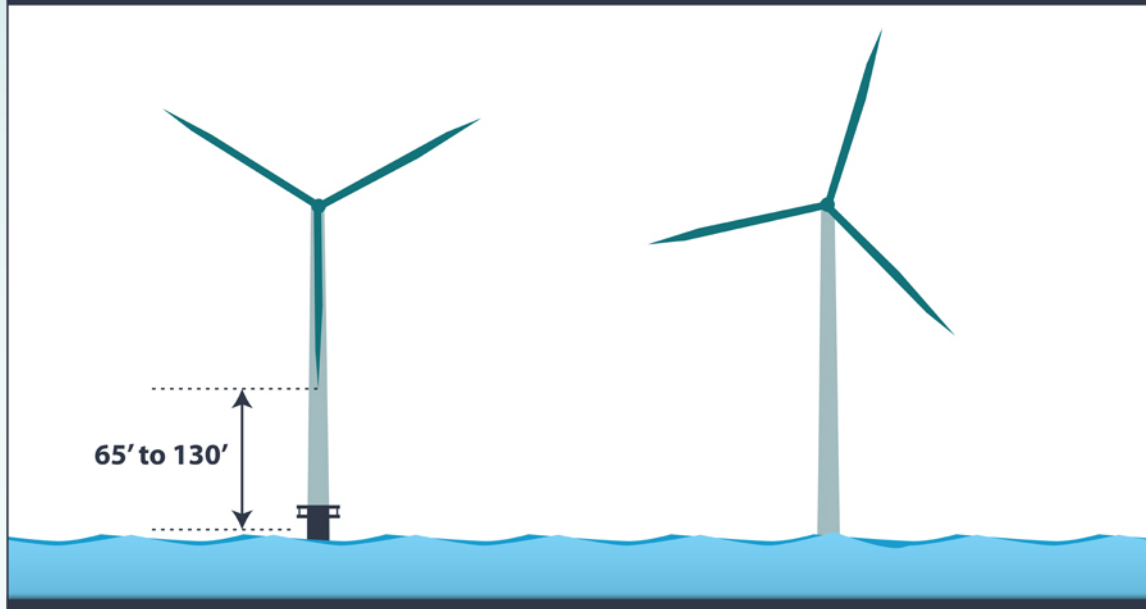
- Exclusion (Safety) Zones
  - The only existing safety zones for OCS structures (oil & gas platforms) are 500 m safety zones for vessels 100 ft or greater not engaged in towing.
  - Tie-ups would likely be the call of the lease holder.

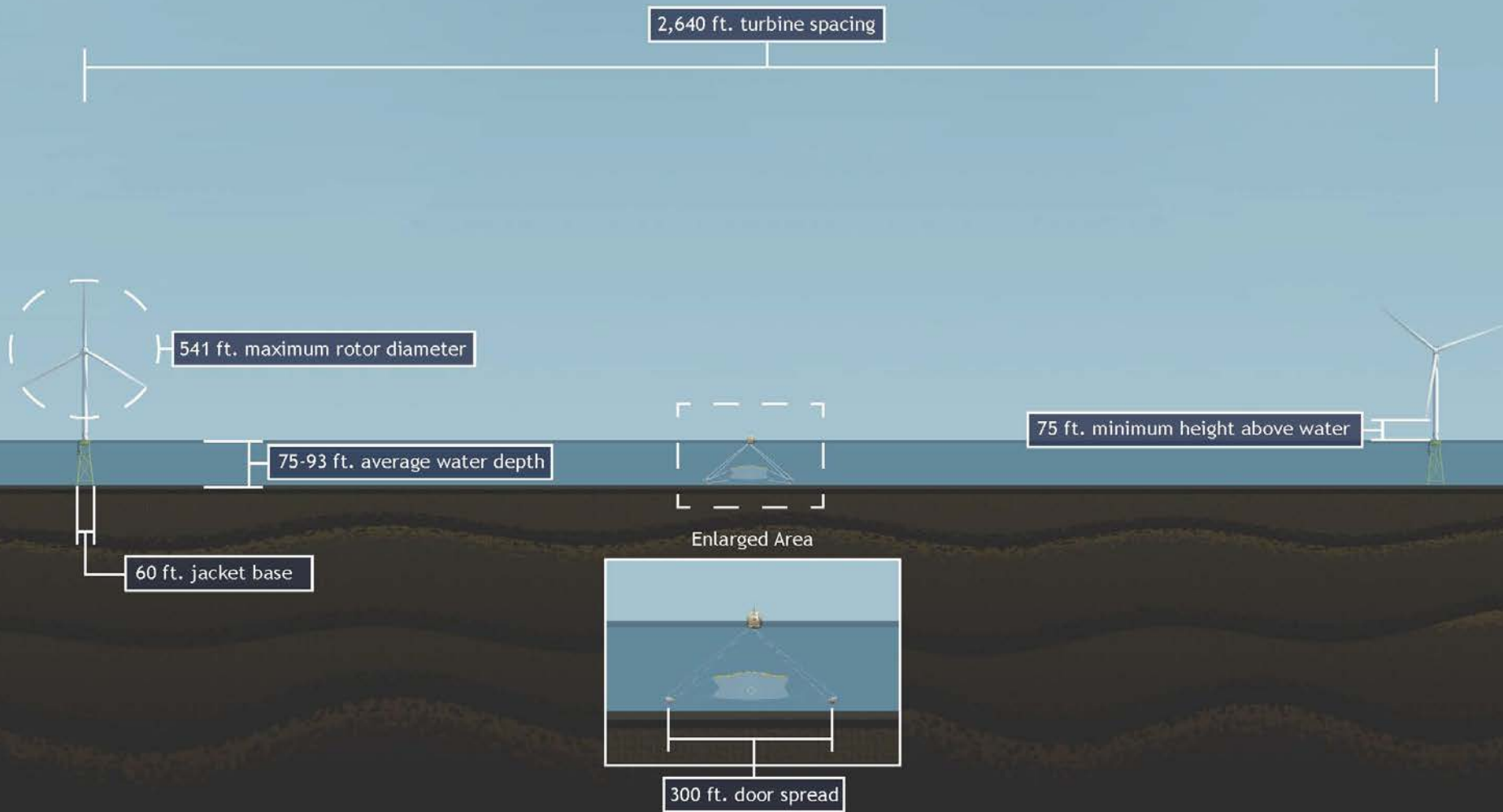
## Average Separation Distance Between Turbines



## Turbine Blade Average Height Above Sea Level

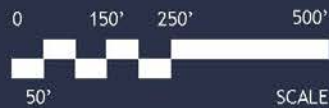
\*Utilizing Current Technology and Assuming Calm Seas\*





# Block Island Wind Farm

October 9, 2012



Prepared by



Prepared for





# Block Island Wind Farm

October 9, 2012

Prepared by



Prepared for

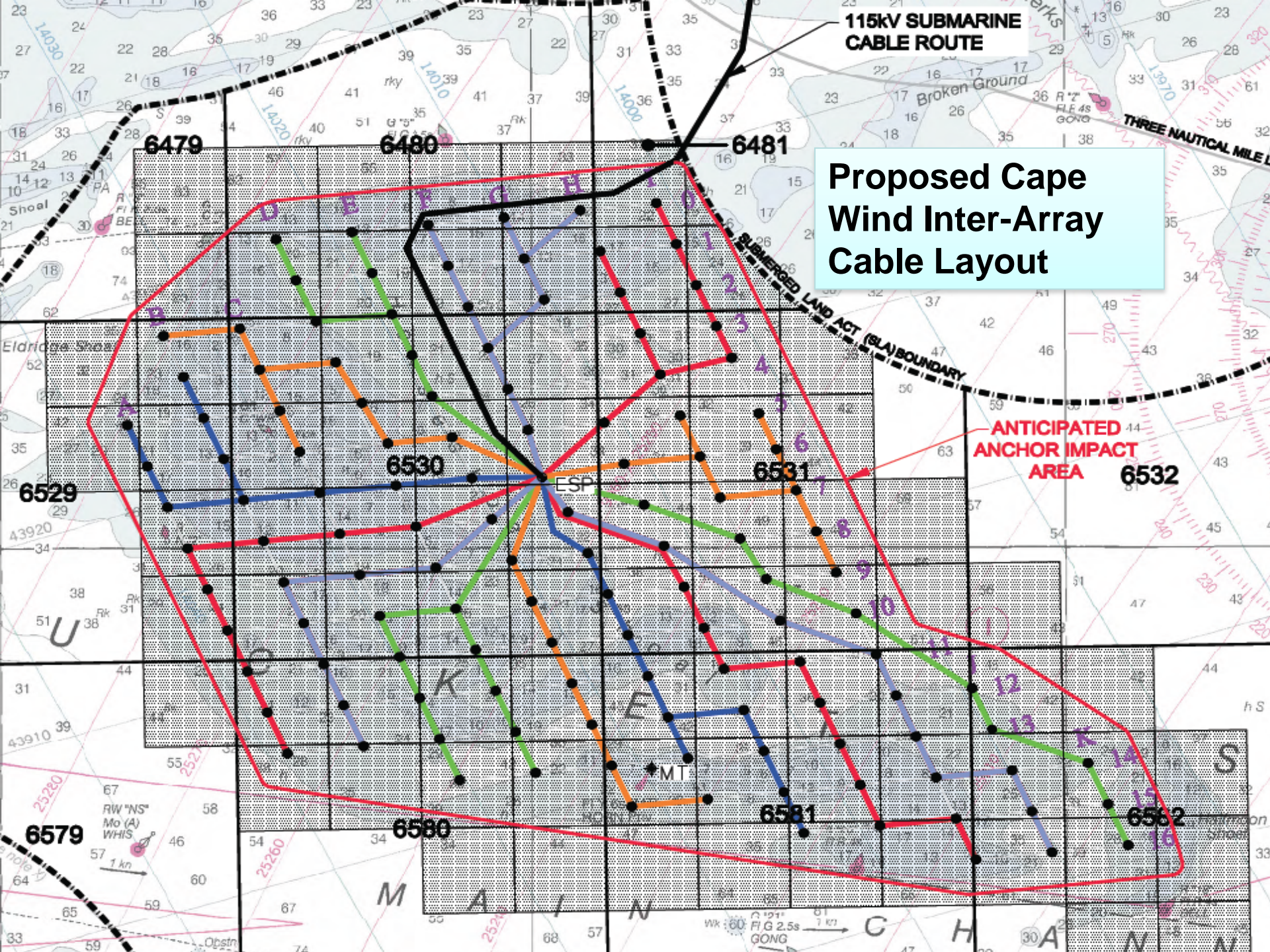


# Fishing and Wind Energy Questions

- Electromagnetic Fields (EMF)
  - Several studies have concluded and several are ongoing (lab-based and in-situ).
  - There is consensus that some species are more electro-sensitive or magneto-sensitive than other species.
  - Some lab-based studies have shown some slower development of larvae with very high levels of EMF exposure.

115KV SUBMARINE  
CABLE ROUTE

# Proposed Cape Wind Inter-Array Cable Layout



6479

6480

6481

6529

6530

6531

6532

6579

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6582

ESP

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ANCHOR IMPACT  
AREA

115KV SUBMARINE  
CABLE ROUTE

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# Fishing and Wind Energy Questions

- Financial Compensation
  - Did the Energy and Policy act of 2005 give BOEM the authority to have Fishermen's Contingency Fund for Offshore Renewable Energy? – No.
- Damage Liability

# Current Fishing Best Management Practices

- BMPs are planning measures, construction techniques, and operational procedures to reduce adverse impacts.
- Mitigation measures are project-specific preventative, corrective, and/or compensatory actions to reduce or offset adverse impacts.
- Best management practices were identified and adopted in the 2007 Environmental Impact Statement for the Renewable Energy Program. Mitigation measures will be applied on a project-by-project basis.
- BOEM's regulations (30 CFR 585 Subpart F) state that lessee's plans must demonstrate uses of best management practices.

# Current Fishing BMPs

- Require cooperation with fishing interests to reduce conflict.
- Require notification of planned activities prior execution.
- Require marine debris reduction measures.
- Require proper marking/lighting of facilities.
- Require cable burial and inspection (where practicable)

# Mitigation Strategies

- Conflict avoidance
- Communication and engagement
- Coastal and marine spatial planning
- Environmental assessments
- Mitigation funds
- Stock enhancement
- Research
- Navigation research
- Facilities improvement
- Fishing effort increases
- Fishing area re-opening
- Exclusive access
- Safety fairways
- Buffer zones around fishing grounds
- Guard ships
- Charting
- Cable burial

# Studies: Biological

- EMF impact studies are continuing:
  - EMF model-based assessment and literature review is completed.
  - EMF *in situ* study kicking off this year in the Pacific.
  - Dept. of Energy funded EMF laboratory-based study is continuing.
- Fish acoustic impacts:
  - Workshop held in March.
  - Effects of Pile Driving Sounds on Auditory and Non-Auditory Tissues of Fish is ongoing.

# Studies:

## Socioeconomic

- These 8 Workshops - “Development of Mitigation Measures to Address Potential Use Conflicts Between the Wind and Commercial Fishing Industries.”
- Inter-Agency Agreement with NMFS to evaluate the socio-economic impact to fishing from offshore wind energy development was signed in September.
- Identification of Outer Continental Shelf Renewable Energy Space-Use Conflicts and Analysis of Potential Mitigation Measures

# Opportunities for Input: Formal

- BOEM conducts formal notice and comment periods via the *Federal Register* for items such as:
  - requests for interest in an area,
  - calls for information about an area for which there is interest, and
  - notices of intent to prepare an environmental assessment document for an area under consideration for leasing.

# Opportunities for Input: Informal

- Communication with representatives on the BOEM intergovernmental renewable energy task forces.
- BOEM and other agencies may meet with public stakeholder groups to address their comments and concerns (e.g. Massachusetts Habitat and Fisheries Working Groups and the Rhode Island Fishery and Habitat Advisory Boards).
- BOEM has previously, and will continue to regularly engage with the Regional Fishery Management Councils.



Thank You for  
Participating!

# Fishing BMPs - 1

Lessees and grantees shall work cooperatively with commercial and recreational fishing entities and interests to ensure that the construction and operation of a project will minimize potential conflicts with commercial and recreational fishing interests.

# Fishing BMPs - 2

Lessees and grantees shall review planned activities with potentially affected fishing organizations and port authorities to prevent unreasonable fishing gear conflicts. Lessees and grantees shall minimize conflict with fishing activity and gear by notifying state and Federal regional fishery management organizations and local fishing groups of the location and time frame of the project construction activities well in advance of mobilization with updates throughout the construction period.

# Fishing BMPs - 3

- Lessees and grantees shall use practices and operating procedures that reduce the likelihood of vessel accidents and fuel spills.
- Lessees and grantees shall avoid or minimize impacts to the commercial fishing industry by marking applicable structures (e.g., wind turbines, wave generation structures) with USCG-approved measures (such as lighting) to ensure safe vessel operation.

# Fishing BMPs - 4

Lessees and grantees shall avoid or minimize impacts to the commercial fishing industry by burying cables, where practicable, to avoid conflict with fishing vessels and gear operation. If cables are buried, lessees and grantees shall inspect cable burial depth periodically during project operation to ensure that adequate coverage is maintained to avoid interference with fishing gear/activity.