

Speaker – Burt Hamner

- Burt Hamner and family have summer home in Chilmark for 30+ years. He is committed to helping the Island with sustainable energy development.
 - Graduated Harvard '83, Univ of WA MBA + MA Coastal Zone Mgmt '88
 - 20 years experience in marine environmental management, clean tech, international development
- He is founder and President of the Grays Harbor Ocean Energy Company LLC in Seattle, WA, and is a nationally recognized expert on marine renewable energy
 - Directed the largest tidal power study in the USA to date, and advised Edgartown on its tidal power project.
 - Already received FERC permit P-13058 for wave energy generation on wind turbine platforms at Grays Harbor in Washington
 - Recent Chair of Renewable Energy Committee of Marine Technology Society
 - Appointed international advisor to New Zealand government on marine energy

Agenda

- MA ocean energy siting plan
- Rhode Island's Special Area Management Plan for ocean energy development
- Key concerns for development
- A strategy for Cape Islands to control and direct ocean development
- Roundtable for discussion and steps forward

Summary of Key Points

- MA govt has declared west end of Dukes County as the only space in MA for offshore wind farm development
- Rhode Island is already moving ahead fast to identify a site for a large offshore wind farm
- The most likely area (I think) is about 15 miles due west of Gay Head and Nomans Island – same conclusion as MA govt
- RI has selected a private developer for the wind farm and there is no provision for sharing any revenue or benefits with MA or Dukes County, despite obvious fishing and visual impacts to the County
- One strategy to protect County interests and obtain revenue from development is for the County to join a public-private partnership to propose developing an offshore wind farm itself
- A Chilmark summer resident has developed a strategy to achieve competitive advantage, get revenue for the County, and protect local interests

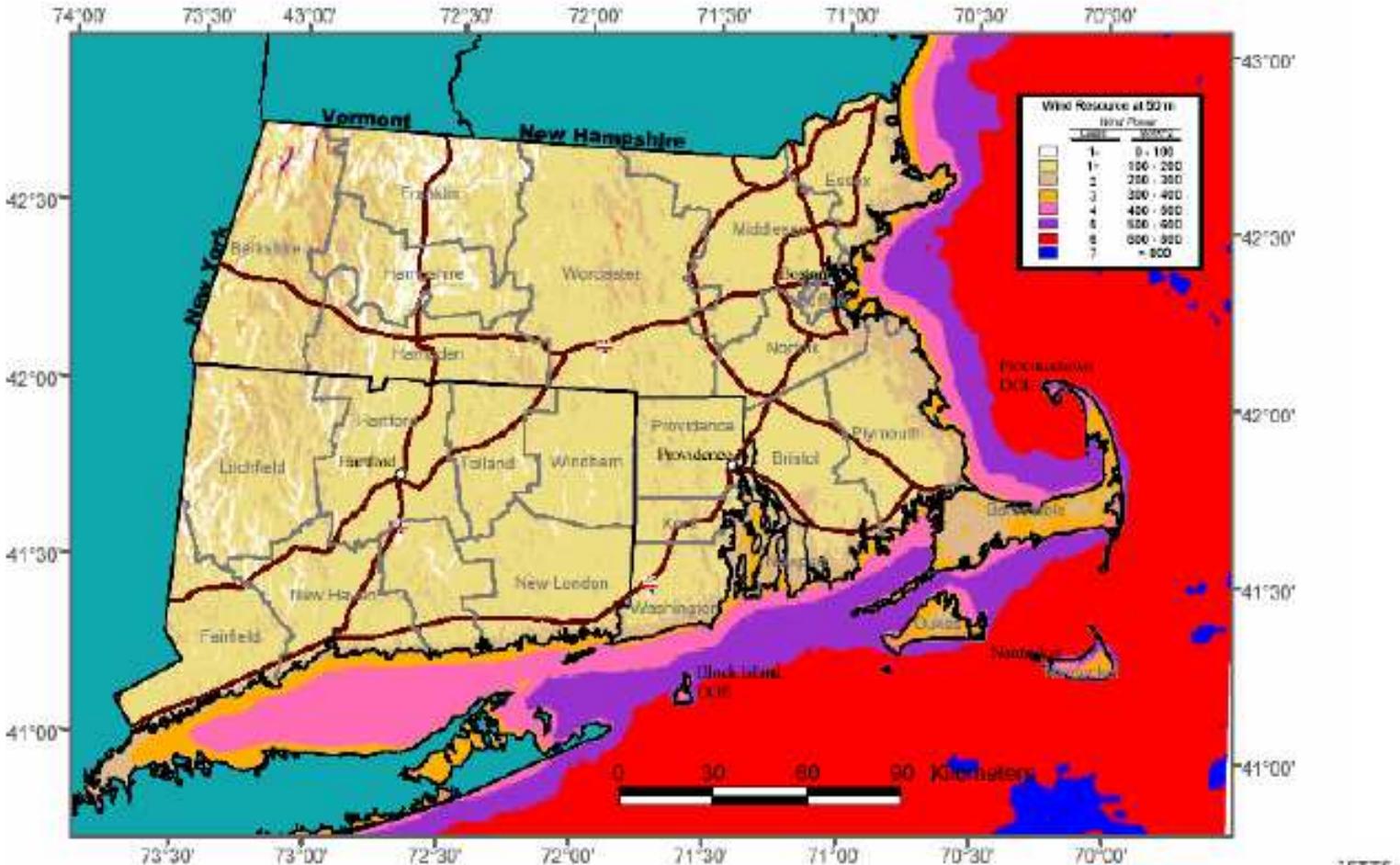
Offshore Wind in UK / Europe

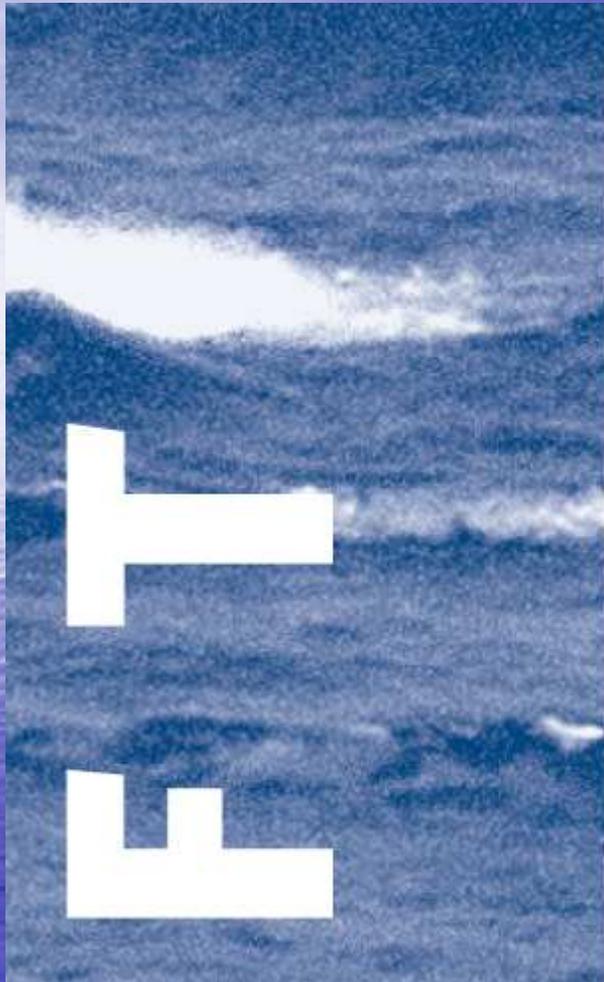
- Over 800 offshore wind turbines already installed and operating
- Another 3000 planned and permitted
- Continuous environmental monitoring – no significant impacts
- Huge amounts of data available
- No problem to visit and observe, listen



Mass. Has Great Offshore Wind

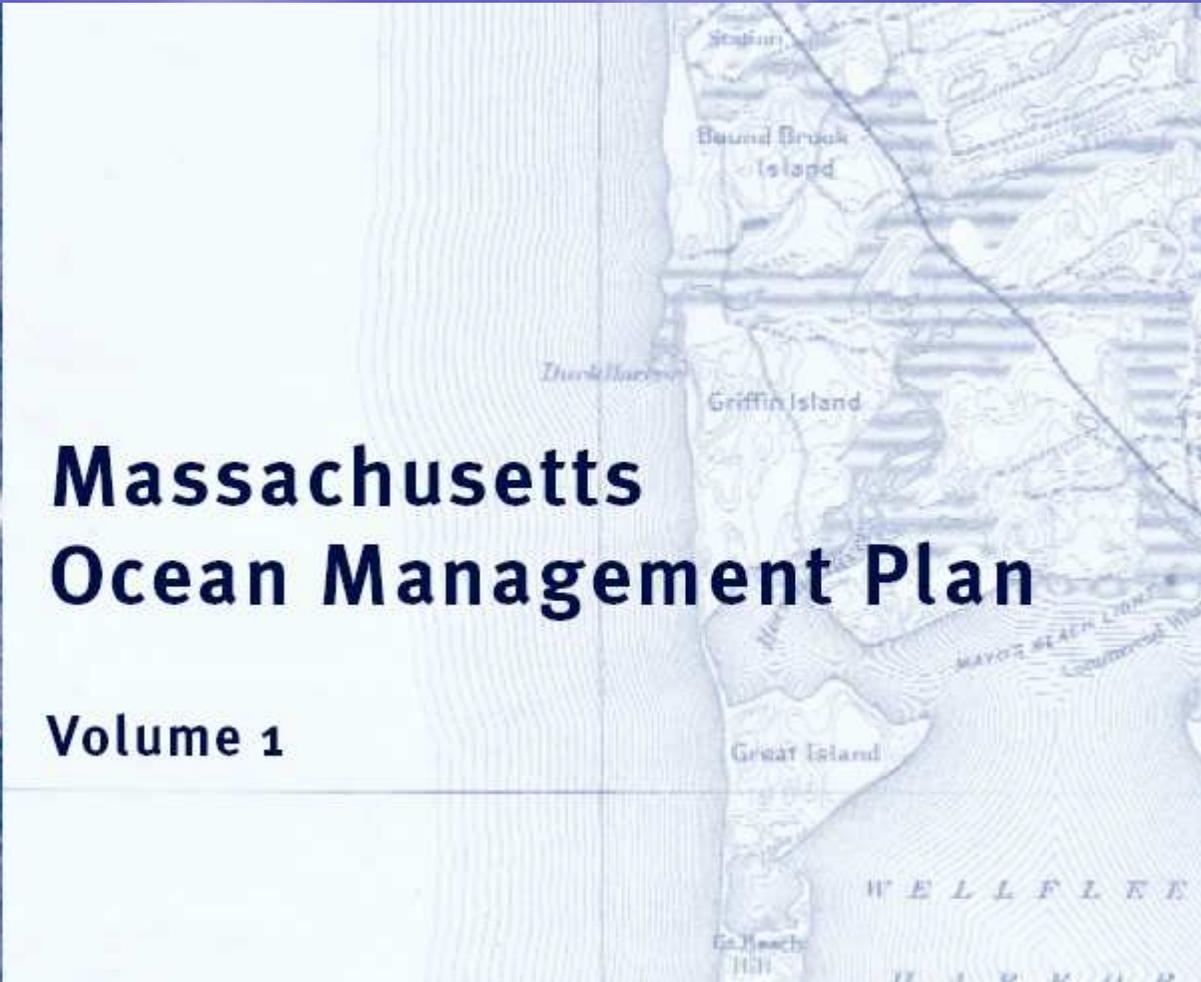
The “Saudi Arabia of Wind”

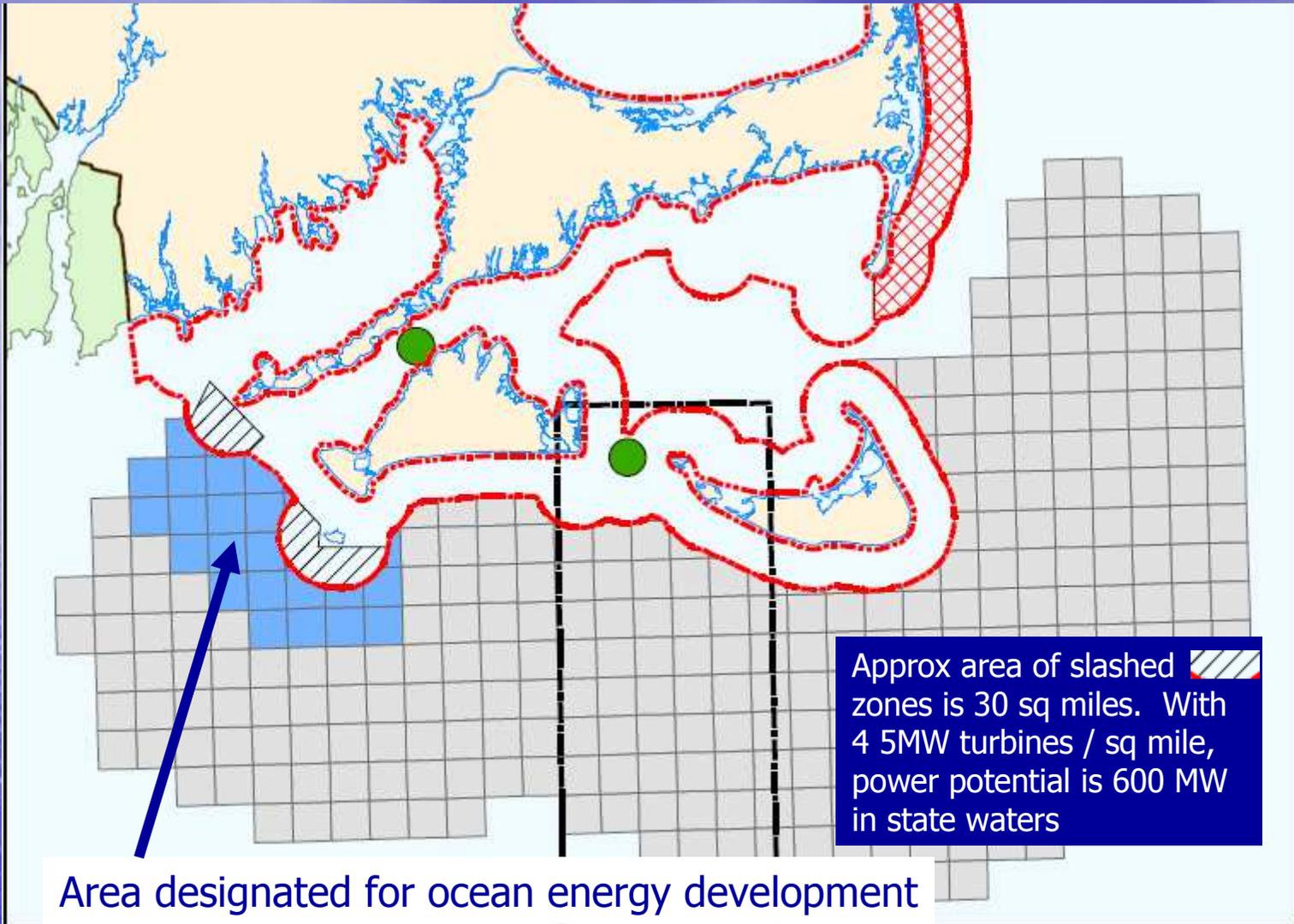




Massachusetts Ocean Management Plan

Volume 1





Rhode Island Ocean Planning

- “Special Area Management Plan” SAMP
Two years underway already
- Commitment to putting a large offshore wind farm somewhere
- Extensive mapping shows areas where RI thinks wind farms are feasible

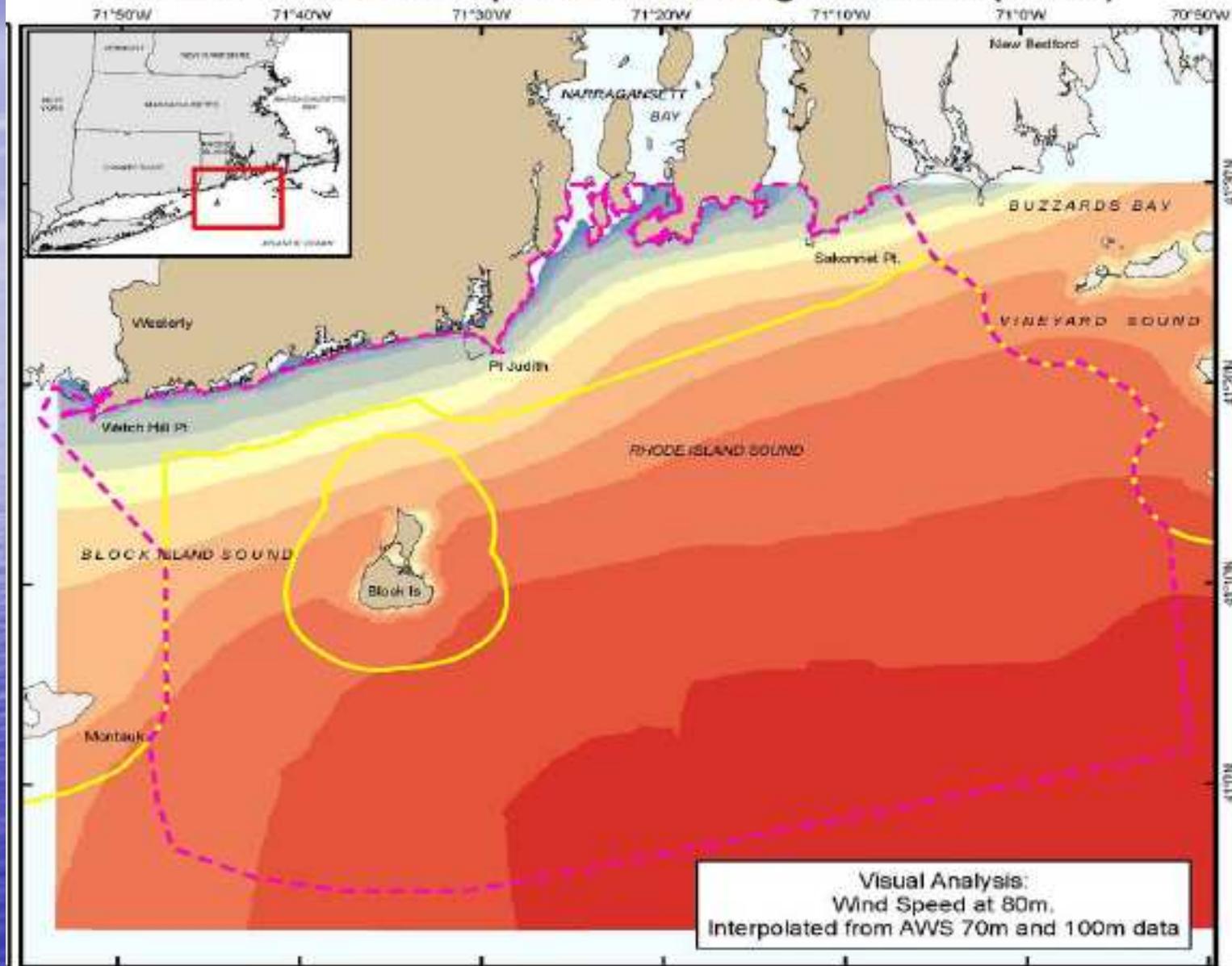
Rhode Island
**OCEAN
samp**

- Marine Spatial Planning For Renewable Energy

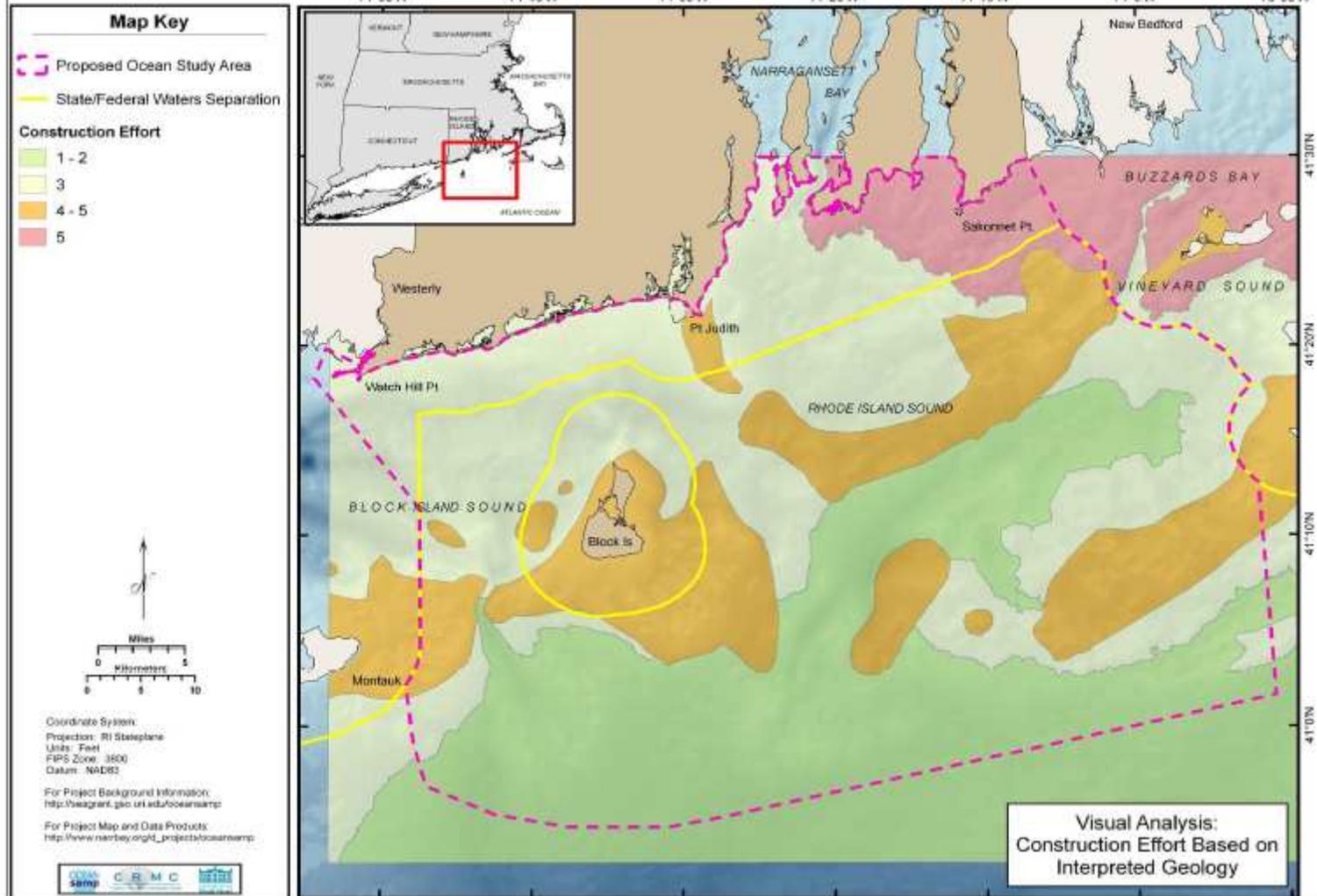
Rhode Island
**OCEAN
samp**

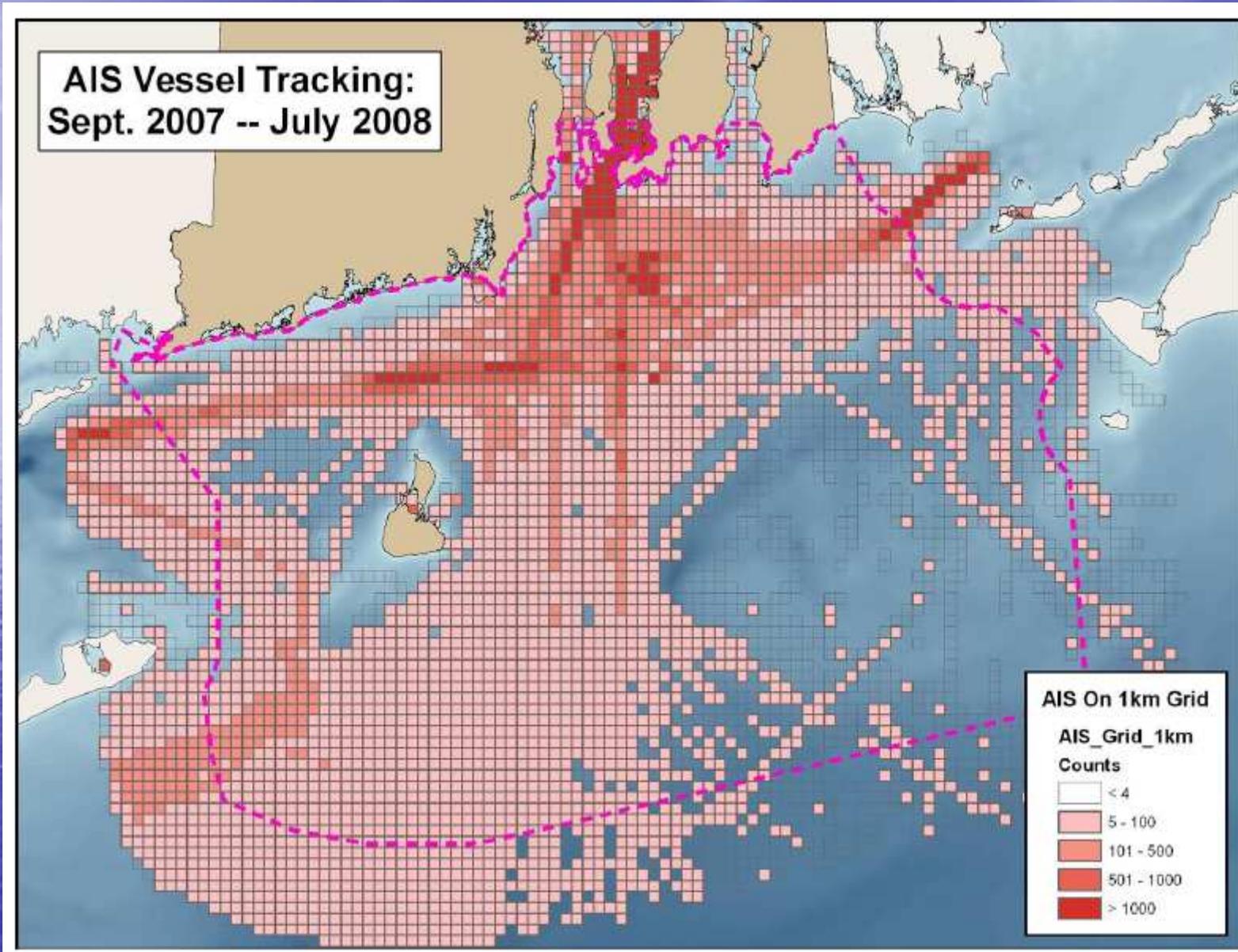


Rhode Island Ocean Special Area Management Plan (SAMP)



Rhode Island Ocean Special Area Management Plan (SAMP)

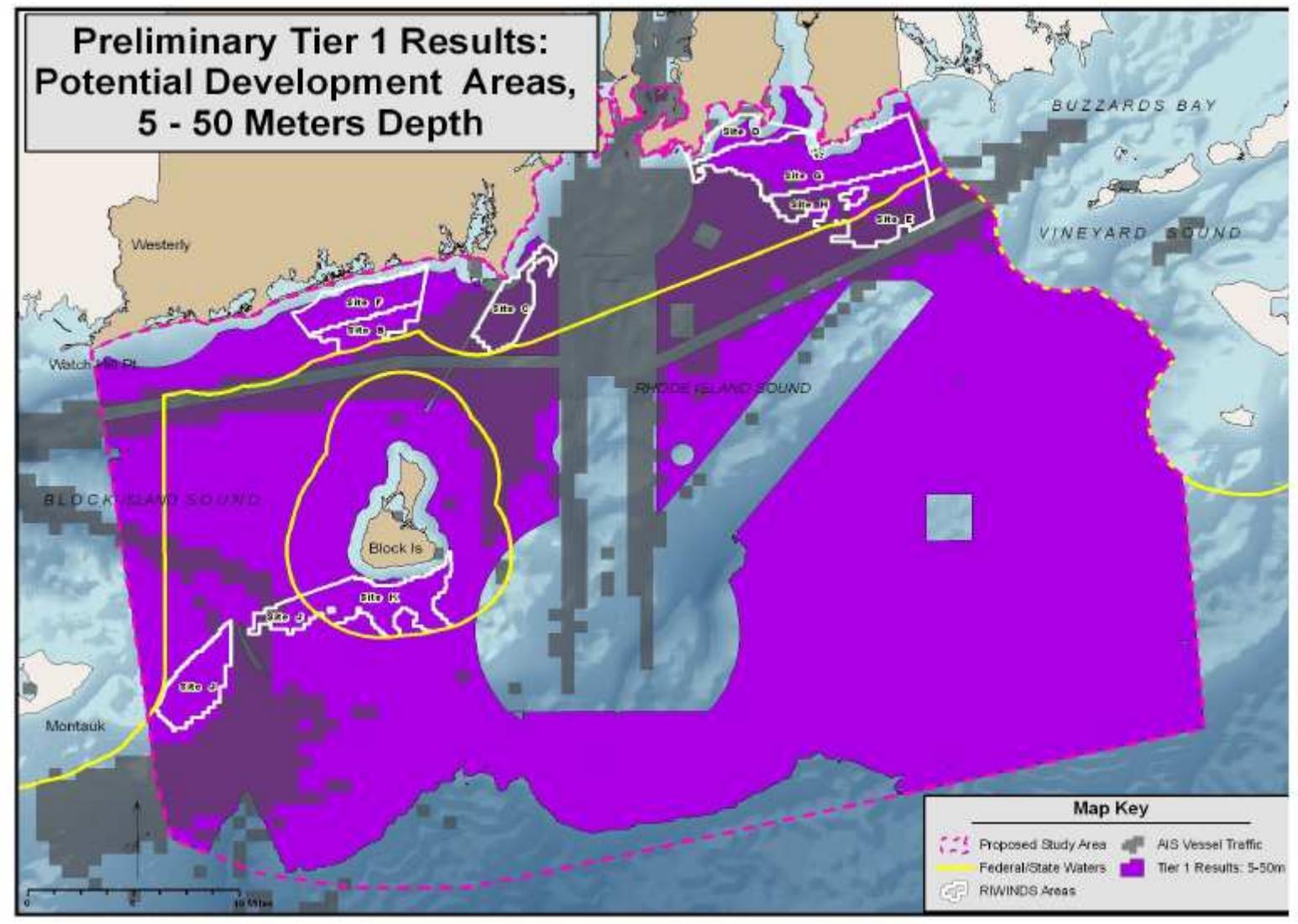




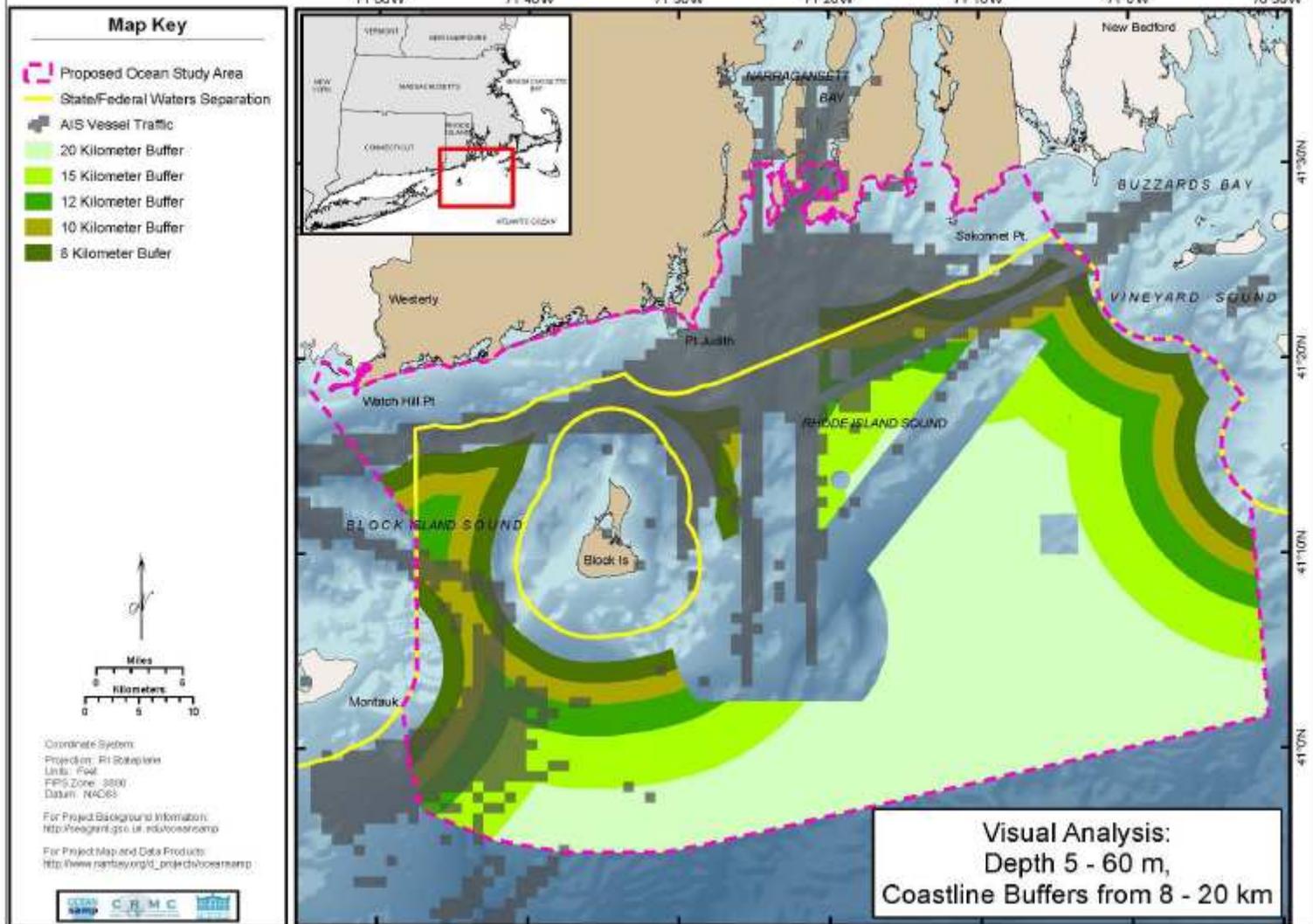
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**Preliminary Tier 1 Results:
Potential Development Areas,
5 - 50 Meters Depth**



Rhode Island Ocean Special Area Management Plan (SAMP)



Visualization of MV Project

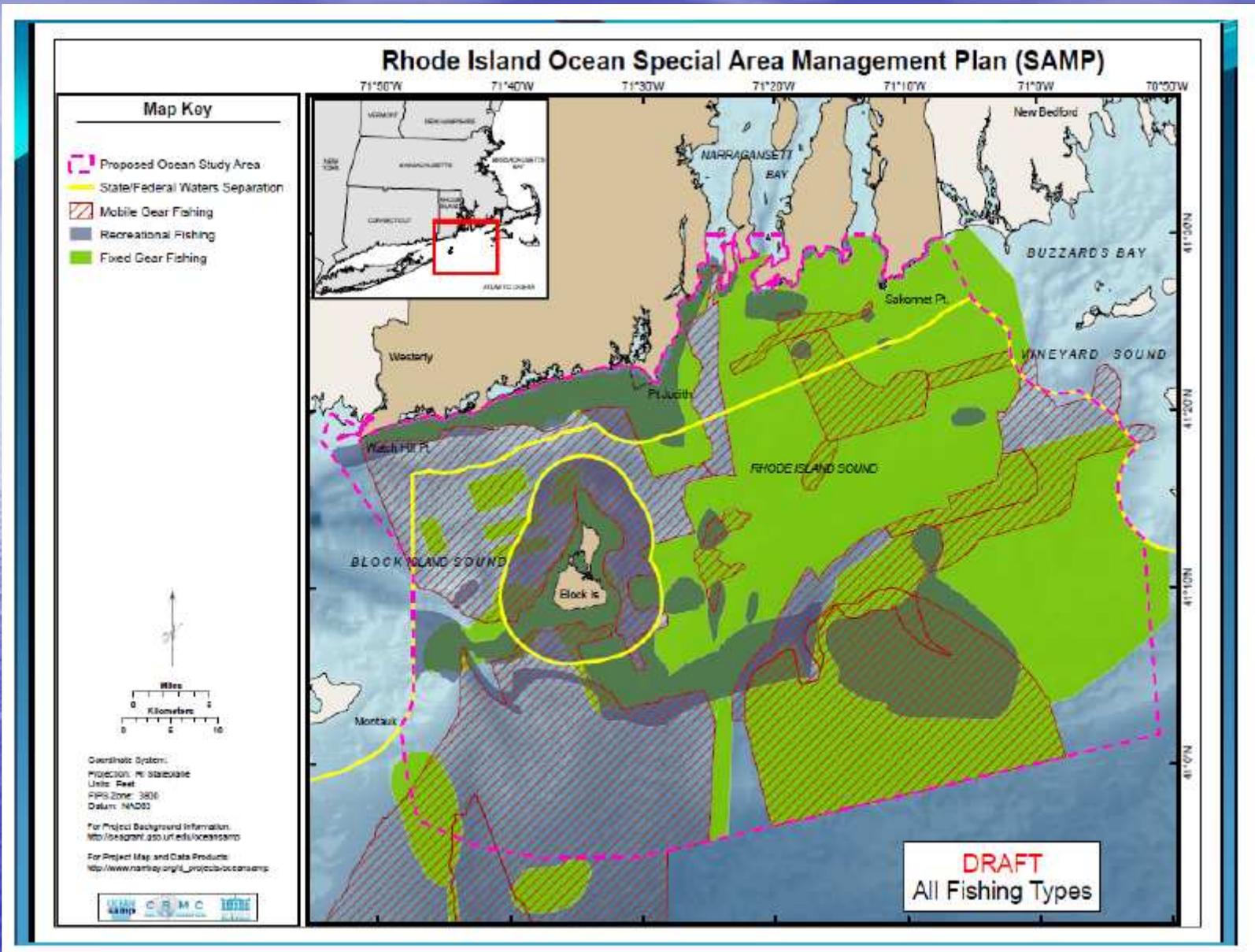
PROPOSED VIEW

"Cape Wind" Project Visualization – 12 miles offshore
MV project may look similar

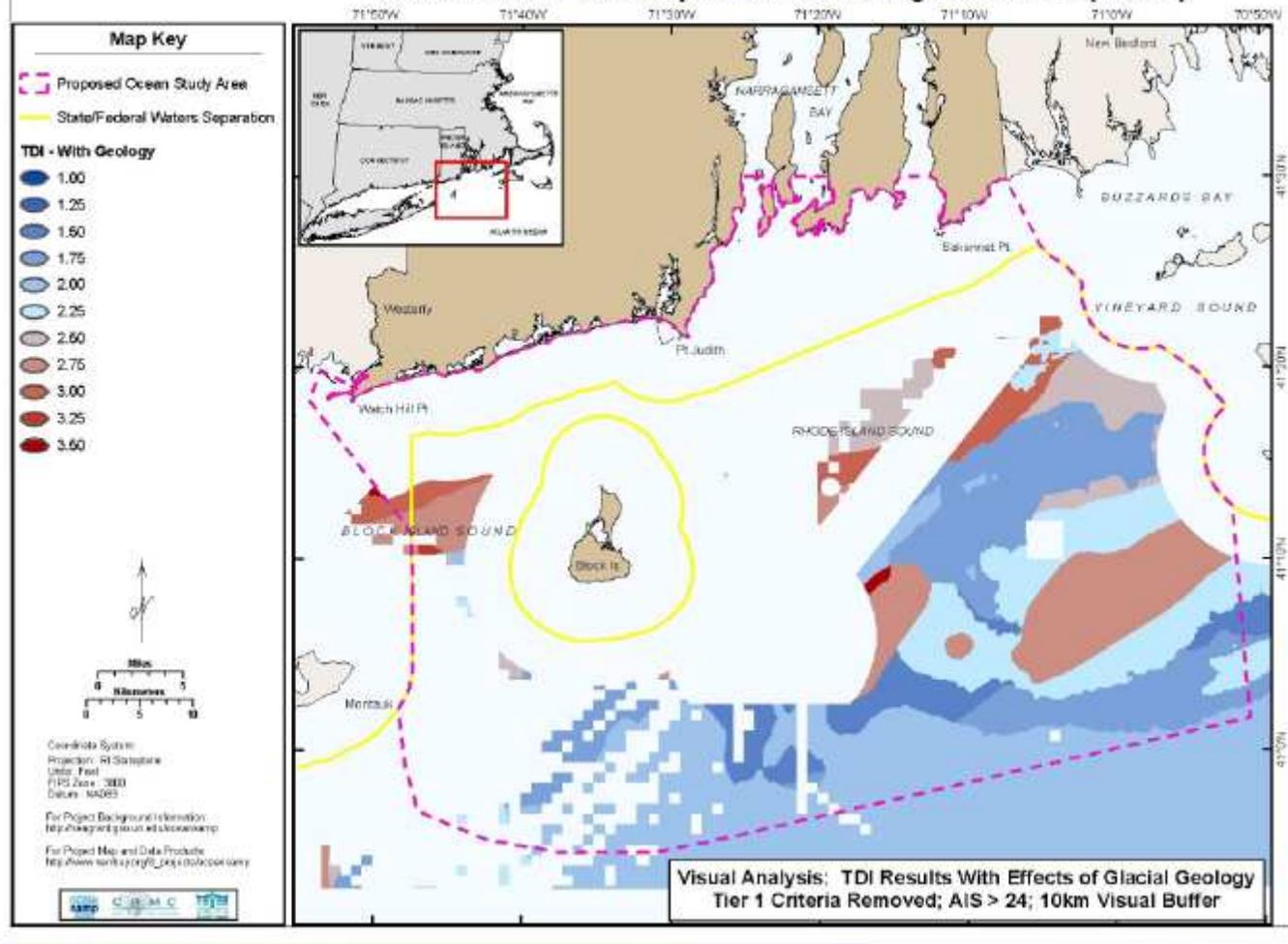


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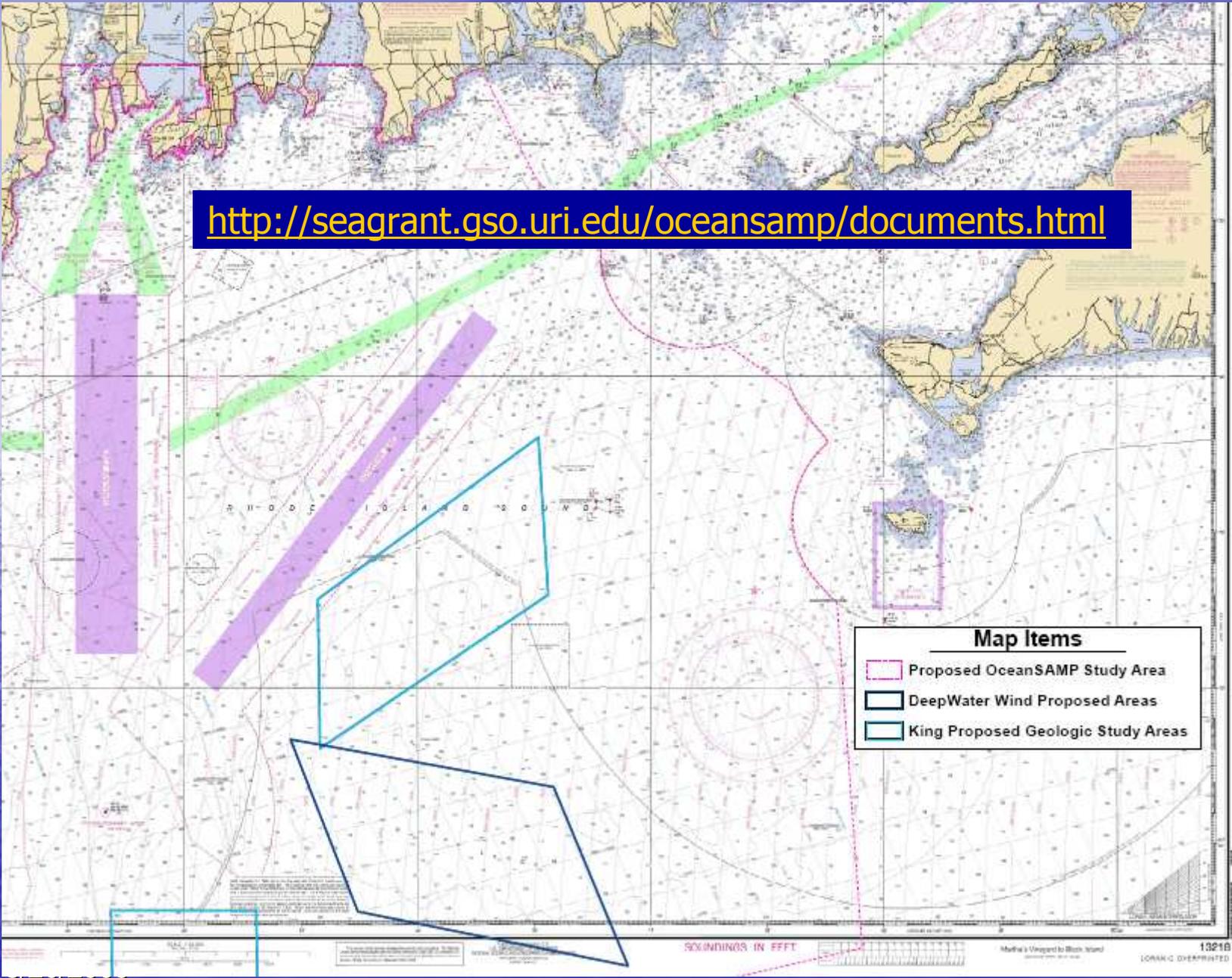
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Rhode Island Ocean Special Area Management Plan (SAMP)



<http://seagrant.gso.uri.edu/oceansamp/documents.html>



Rhode Island SAMP Implications

- A large offshore wind farm serving RI seems likely to be sited closer to MV than to RI
- From Gay Head it would be clearly visible
- Wampanoag Tribe will have a lot of opinions about it
- There has been no participation by Dukes County stakeholders in the RI SAMP that we know about

Federal Management

- Minerals Management Service MMS has to issue lease for wind farm
- They can either announce lease sales or accept unsolicited lease requests
- If only one applicant asks for a lease area the applicant has to pay MMS to do a federal EIS
- If more than one applicant competes for the lease area MMS has to do the EIS itself then hold an auction
- The states and counties can NOT stop development if they have already declared that offshore wind is compatible with coastal zone mgmt plans
- So a private developer can propose a wind farm just 4 miles off MV for example, and if no competitors contest the proposal, the lease will be issued if the EIS and other studies find no "significant" reasons to block it

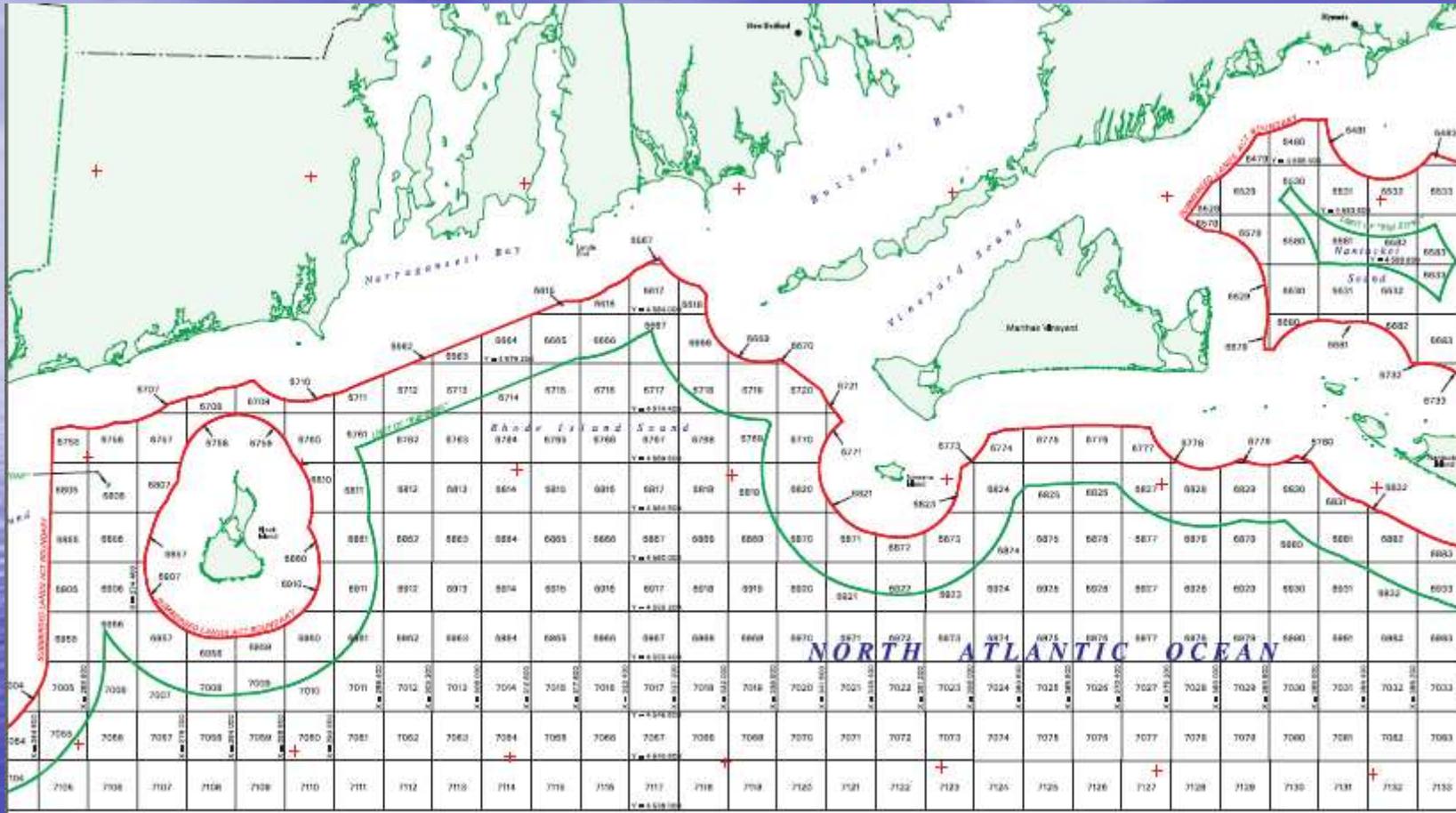
Who Gets the Money?

- MMS charges rent for ocean space (\$3/acre/yr) and royalties based on energy sales
- There is no provision to give any of this money to the nearby state or county (unless project is within 6 miles of coast, then state gets some percentage)
- Developers have no obligation to share profits with the state or county

How Much Money?

- Offshore wind farms in UK cost about \$5M per megawatt, so a 500 MW wind farm could cost \$2.5 Billion
- 500 MW wind farm would generate revenue of \$350M per year
 - (based on a variety of assumptions)
- Jobs: At least 500 in New Bedford for construction, another 200 in region for maintenance, monitoring, studies, etc.

MMS Lease Blocks



Blocks are 3x3 miles; each block can hold 30 to 50 turbines depending on their size. 30 5 MW turbines = 150 MW; a BIG project of 1000 MW would need about 6 blocks.

What Options for Dukes County?

- Be passive, let some outsider develop ocean for Rhode Island
- Be pro-active, go after something for the County
- How: Form some kind of public-private organization and make lease request for site

For Example:

- Create a new co-op for development
 - County, Tribe, private partners, others
- Submit unsolicited lease application for a block in likely area (cost about \$1,250)
- MMS asks for competitive interest – RI will almost certainly compete
- MMS then has to do a NEPA EIS for the block AND surrounding ocean
- Meanwhile co-op continues organizing and planning, and raises private and grant money

Phased Development to Minimize Public Fears

- In state waters off Cuttyhunk, install and demonstrate a SINGLE *mobile* wind turbine
- Meanwhile ask MMS for a Testing Lease in the desired block – no competition or extra cost needed, it's covered by EIS process
- After Cuttyhunk demo, move unit out to the block and demo again
- When (if) lease is granted, build a SMALL project to provide enough power just for MV

MV's Power Needs

- MV current average electric consumption is ~ 21 MW. Peak is ~ 55 MW in August.
- About 10 5MW windmills running at about 40% capacity would be needed to provide average power for the island
- Need about 2 square miles or $\frac{1}{4}$ block
- Power from mainland would still be necessary for times with no wind

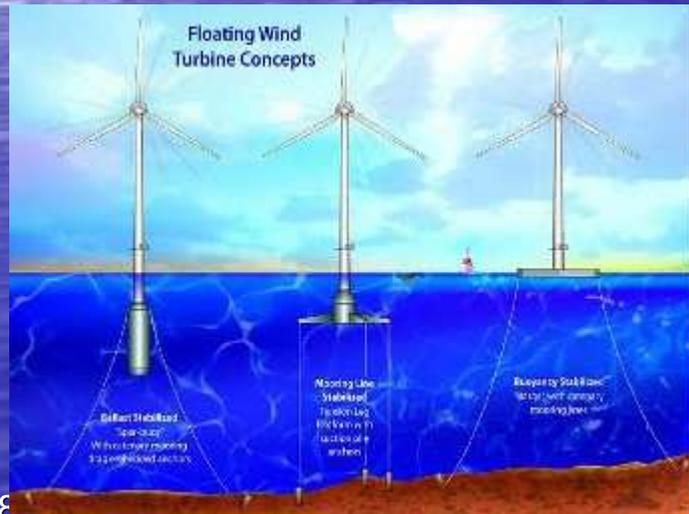
New Offshore Wind Turbine Platforms



- Current technology of monopole foundations is limited to about 80 ft depth



- Offshore oil drilling tech has been adapted for foundations at 250 ft depth

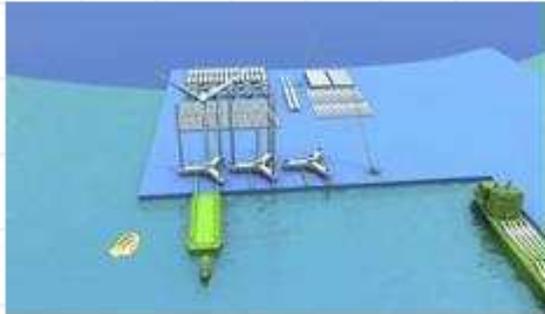


- Floating foundations will enable sites 250 – 1000 ft+ depth.
- LOTS of R&D globally and several demos already underway to prove deepwater wind platforms

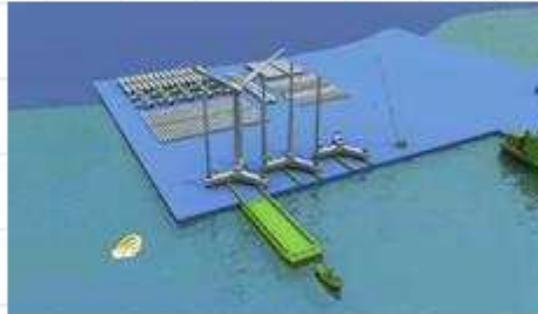
“Titan” Mobile Jack-Up Wind Turbine Platform

- Adapted from offshore oil platform tech
- Enables complete construction onshore – special offshore installation ships not needed – fast in and out of the water
- Latest design passes initial review:
3.6 MW turbine for 160 ft water and
Cat. 5 storm

Construct Turbines and Jackup Platforms



Platform Prefab Components



Assemble Platform in Local Yard



Skid to Launch Barge



Ballast Down Launch Barge



ABS lift Test at Assy. Area



Tow to Site

Turbine Installation



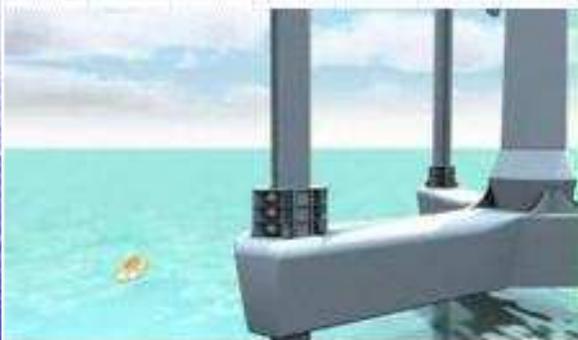
Ballast Water "Pre-Load"



Legs Touch Sea Floor



Legs Penetrate Sea Floor



Remove Ballast Water



Raise the Platform



Installed Power Ready

Who Could Provide Help

Monday, April 21, 2008

UMass Dartmouth launching an ocean power center with MTC, federal funding

By Efrain Viscarolasaga



Sandie Allen

John Miller, the acting director of the new Marine Renewable Energy Center, is ready to set sail.

Related News

[Maine firm, partners make moveable fish farm for deep-ocean aquaculture](#) [August 15, 2008]

[Cape Cod's RTDC, Marine Biological Lab have plans for share of Patrick's \\$1B](#) [June 17, 2008]

[MTC puts mothballed wind turbines on auction](#)

In the quest for sources of alternative energy, New England may have the technological know-how, but it will never have the open space for large solar or wind farms, nor the agricultural infrastructure for large biofuel production plants. But it does have coastline -- and a near-infinite amount of untapped energy in the undulation of the waves and the daily flow of the tides.

To take advantage of that resource, the [Massachusetts Technology Collaborative](#) has awarded the [University of Massachusetts Dartmouth's Advanced Technology Manufacturing Center](#) (ATMC) \$250,000 to launch a [Marine Renewable Energy Center](#) at the ATMC campus in Fall River.

Besides its focus on tidal, wave and offshore wind power research, the new center is hoping to create in-water testing facilities for marine energy

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UMass Dartmouth la...

Local Disk (D:)

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More Possible Support

Offshore Wind Energy Collaborative

Windfarm Design & Siting

- Electrical collector & transmission systems, grid impacts
- Optimization of project economics, Turbine siting

Environmental & Geophysical

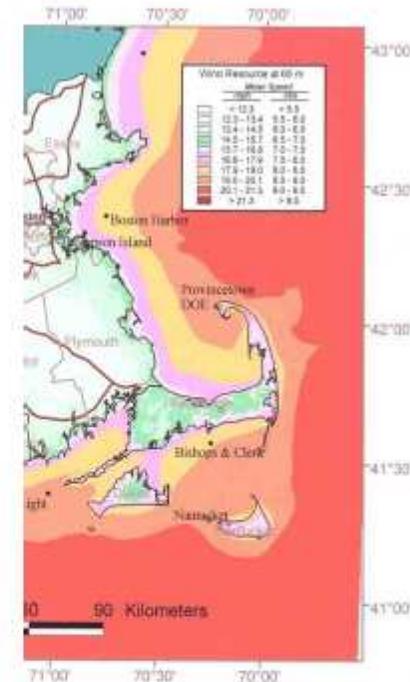
- Meteorology & Hydrodynamics
- Characterization of wind & wave environments
- Effects on Marine & Avian Life

Regulatory, Policy, Socio-Economic, & Education

- Development of international standards, gov't policies

Offshore Operations

- Construction Methods & Equipment
- Civil Infrastructure, Foundations & Towers
- Service Technology, Logistics



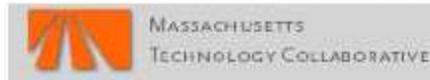
Excellent Wind Resources Close to Major Population/Load Centers



MIT Massachusetts Institute of Technology



Woods Hole Oceanographic Institution



More Possible Support

MMS	Offshore Energy & Minerals Management				U.S. Department of the Interior	
	Alaska	Atlantic	Gulf of Mexico	Pacific		
Program Overview						
Projects	Alternative Energy Programs					
Studies	Projects: Cape Wind Energy Project					
Fact Sheets	<p>The MMS has received a request from Cape Wind Associates, LLC (CWA) for a lease, easement or right-of-way to construct and operate a wind park located in Federal waters 4.7 miles offshore Cape Cod, Massachusetts. Landfall for the transmission cable would be in Barnstable County.</p>					
Information Center	<p>The proposal consists of 130, 3.6 megawatt wind turbine generators covering 24 square miles in Federal waters of Nantucket Sound off Massachusetts with the capacity to produce about 468 megawatts. The average expected production from the proposed wind farm could provide about 75 percent of the electricity demand for Cape Cod and the Islands of Martha's Vineyard and Nantucket. At average expected production, Cape Wind could produce enough energy to power more than 200,000 homes in Massachusetts.</p>					
Regulatory Information						
Staff Directory	Federal Register Notices					
Stakeholders	<ul style="list-style-type: none"> Notice of Extension of Public Comment Period (49 KB) Notice of Availability of the Draft Environmental Impact Statement (DEIS) and Public Hearings (33 KB) 					
Calendar of Events						
In the News						
Education						
Web Mapping Viewer						
Alternative Energy						
5-Year Leasing Program						
Moratoria						
Past 5-Year Programs						
CIAP						
Public Comment System						
Jobs						
						

Content:

8/20/2009

Cape Wind Environmental Impact Statement has been completed and is free for review

Who is Grays Harbor Ocean Energy Company LLC?

- Founded to develop offshore ocean energy in Washington State – already two years of studies and planning
- Already received FERC permit P-13058 for wave energy generation on wind turbine platforms at Grays Harbor site
- Founder has summer home on Martha's Vineyard and 30+ years connection to the community and is committed to helping the Island with sustainable energy development. He has advised Edgartown on its tidal power project.

Now What?

- Discussion with county and tribe leaders
 - Form a working group?
- More education about issues and options
- Evaluate organization approach – Co-Op?
Partnerships? Other?

Contact

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