

# Southern New England Offshore Wind Energy Science Forum

December 12, 2017

## Habitat

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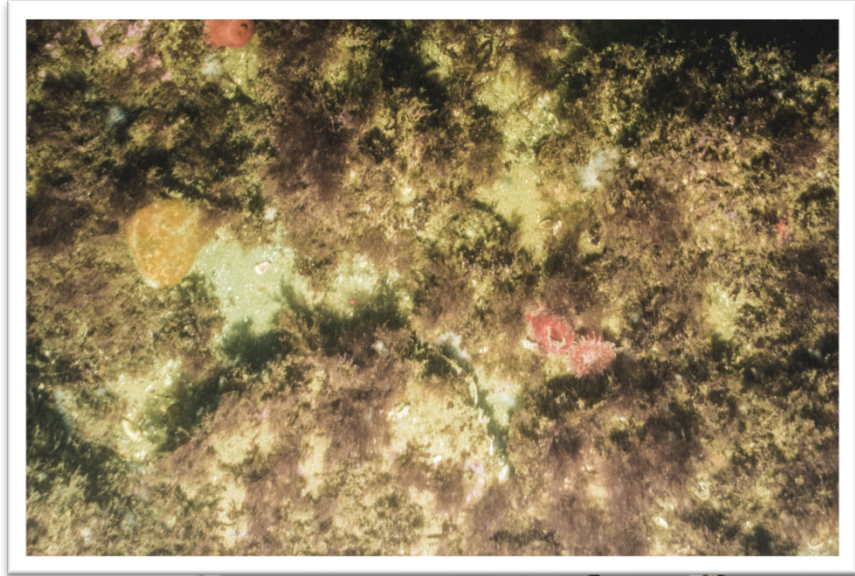


**BLOCK ISLAND**  
WIND FARM

America's First Offshore Wind Farm

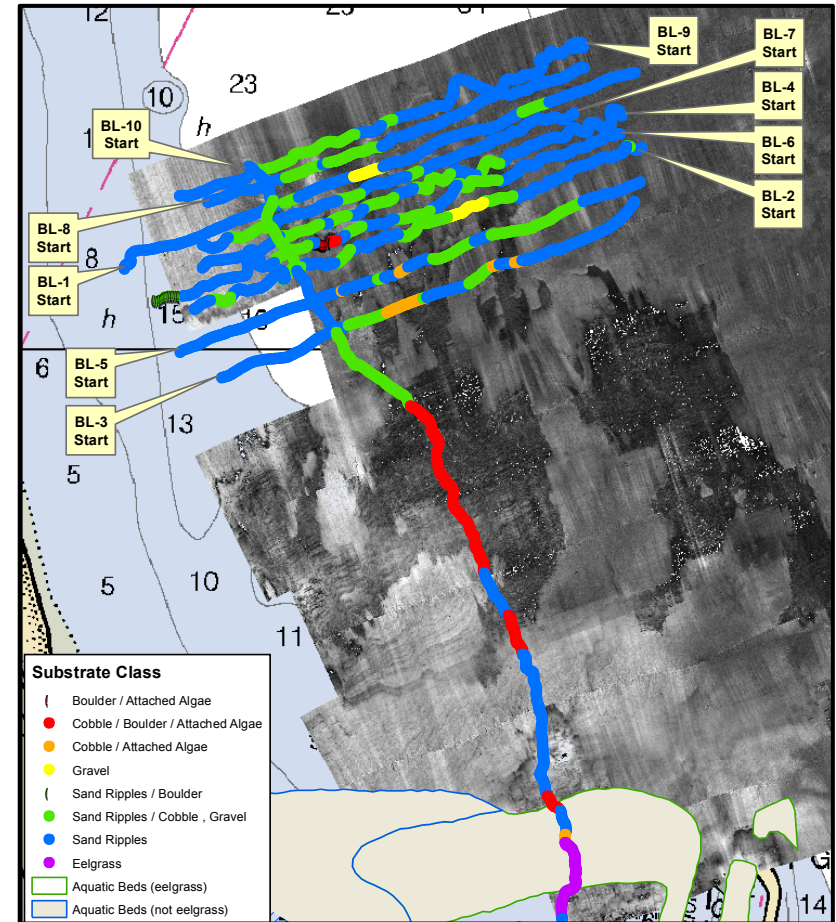
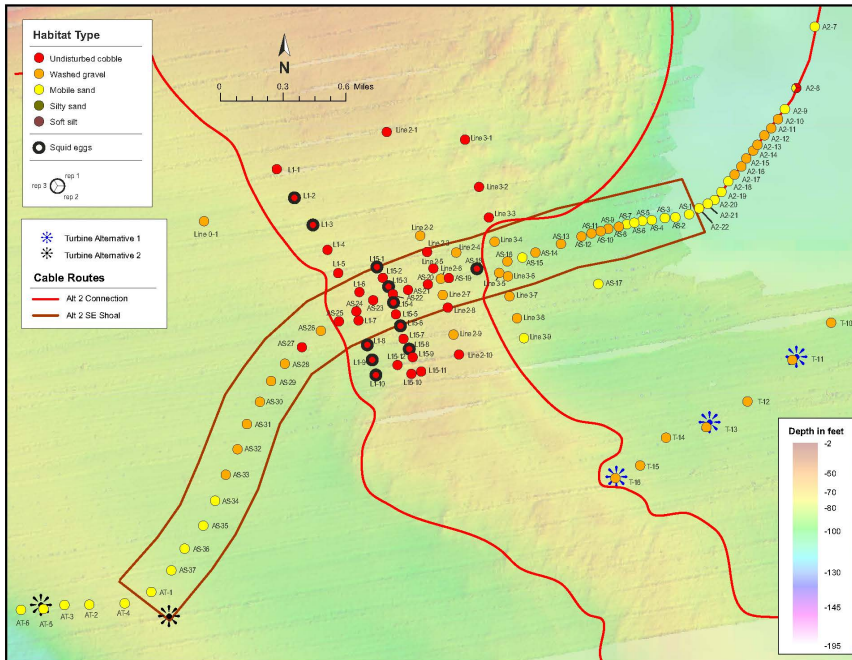


# Block Island Wind Farm Research Benthic Habitat Surveys



# Benthic Habitats

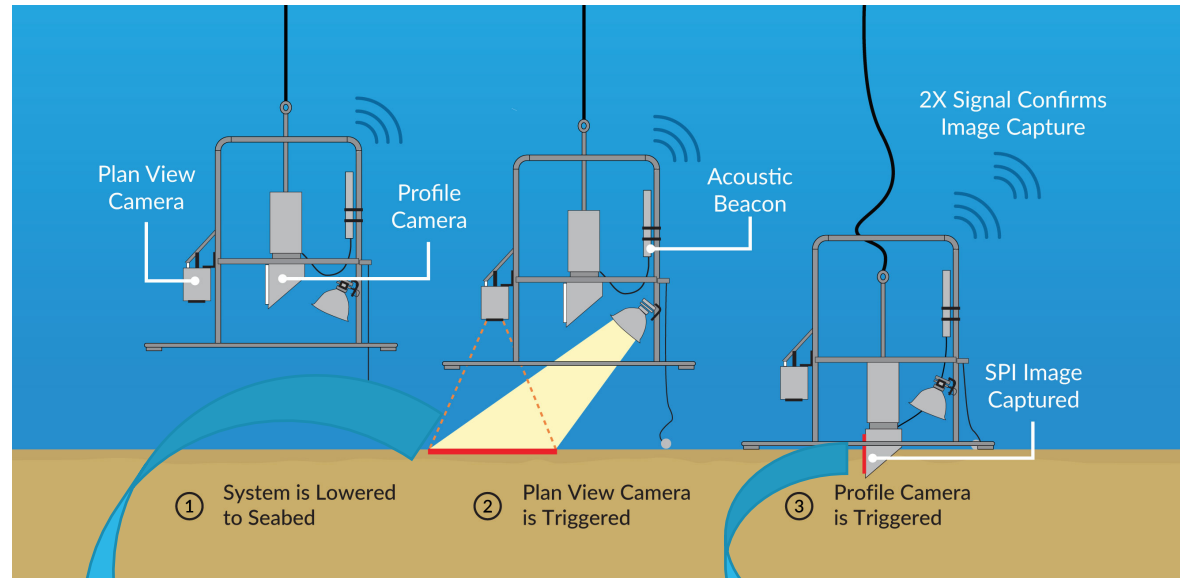
- Baseline survey before geophysical survey to improve siting of turbines and cable
- Eelgrass and shallow hazards survey to improve cable landfall
- Post-construction survey of hard bottom habitats



Eelgrass Survey Block Island

# SPI/PV Survey Work

- Sediment Profile Imaging (SPI) and Plan View (PV)
- High resolution imagery of seafloor
- Grab samples for laboratory testing of grain size
- Characterize baseline ecological conditions and seafloor habitats



Deployment of SPI/PV system

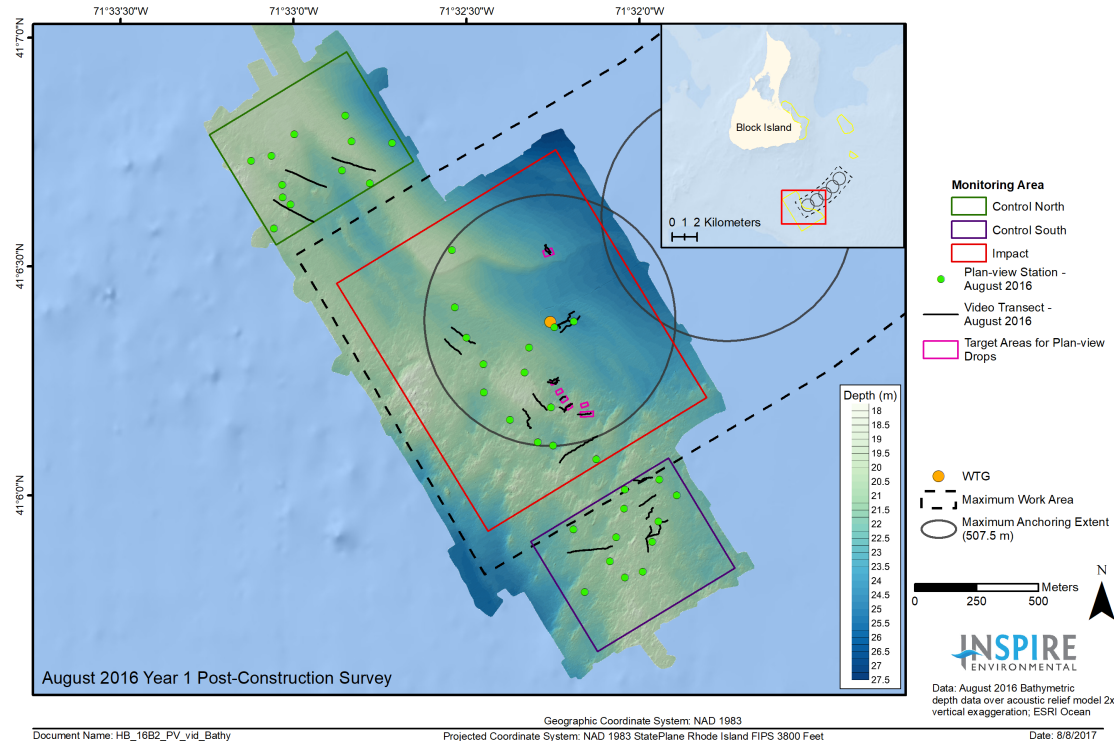


SPI/PV camera system



# Bottom Habitat Survey

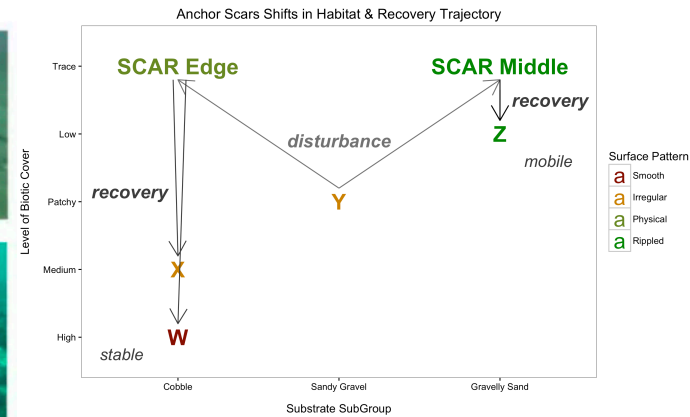
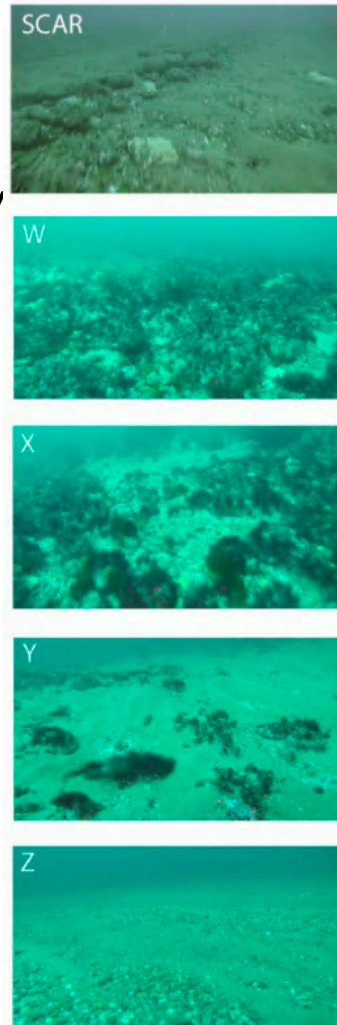
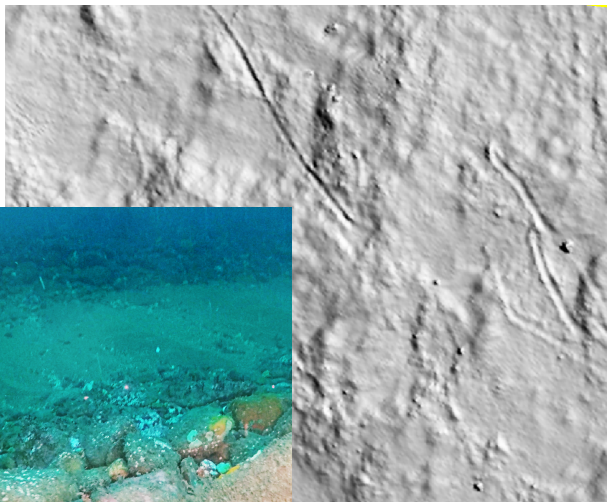
- Assessment of barge anchoring activity on valuable hard bottom habitat
  - Required as condition of construction permit
- Multi-scale data:
  - Acoustic multi-beam data
  - Towed video transects
  - Plan-view images
- 3 Monitoring Areas
  - 2 Control (North and South)
  - 1 Potential Impact
- Targeted Sampling near anchor features



- 3 Surveys near WTG #5:
  - Before construction (August 2015)
  - After construction (March 2016)
  - 1 year after construction (August 2016)

# Hard Bottom Survey: Results

- Anchoring activity avoided the most valuable habitat areas, as planned
- Anchor scars were detected in patchy moderate value hard bottom habitat using acoustic data
- Anchor scars were recorded with video in March and August 2016



- Relatively fast recolonization (<1 yr) of anchor scar edges by common local fauna (algae, sponges, etc.) was observed
- No negative effects were observed
- Due to these results, the requirement for monitoring 3 & 5 years after construction was waived by federal and state permitting agencies

# Lessons learned

- Reconnaissance of habitats can be conducted before and during geophysical surveys
- Ground-truth geophysical data and conduct benthic assessment
- High resolution habitat maps allow micro siting of wind turbines
- High value hard-bottom habitats can be avoided during construction with effective planning and monitoring

# Apply to future

- Conduct reconnaissance surveys with low cost equipment to refine site plans before G&G
- Integrate geophysical surveys with benthic assessments
- Regional data necessary to interpret site-specific data
- Regional funding and cooperation would leverage efforts