

Revolution Wind

A Joint Venture of Ørsted and Eversource

*Benthic Habitat Mapping – Meeting with CRMC, Drs.
King and Oakley*

March 09, 2022

**Revolution
Wind**

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Meeting Objectives & Agenda

Meeting Goal: Detail Review of Habitat Mapping Approach & Exploration of Exemplar Areas in Popup Map

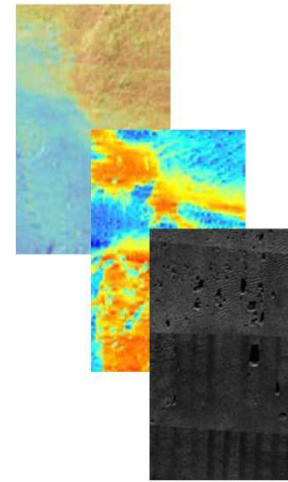
- 01 Habitat Mapping Approach**
- 02 Popup Exploration**
- 03 Next Steps & Schedule**

Habitat Mapping: Objectives & Data

Objective: Provide detailed information about the physical and biological characteristics and spatial composition of benthic habitats found within the Project Area

Geophysical Data:

- **MBES Bathymetry – 50 cm**
 - Depth; Seafloor relief
 - High positional accuracy
- **MBES Backscatter – 25 cm**
 - Relative scale; strength of acoustic return affected by sediment grain size, compaction, water content, texture and rugosity; water temp and salinity, MBES frequency and settings, depth
 - Collected as secondary to bathymetry
 - High positional accuracy
- **Side-scan sonar (SSS) – 10 cm**
 - Sediment texture and objects
 - Most useful at zoomed in scale
 - Slightly lower positional accuracy because collected from a towfish
- **Boulders**
 - Boulder fields, > 20 per 10,000m² (low/med/high)
 - Individual boulders > 0.5 m



Ground-truth Data:

- Sediment Profile Imagery, Plan View (SPI/PV) – 240 stations in RWF, 19 in RWEC-OCS, 34 in RWEC-RI
- Sediment grab samples (~200) collected during geophysical surveys
- Towed underwater video survey for submerged aquatic vegetation (SAV); High resolution aerial imagery (publicly available) – for landfall investigation



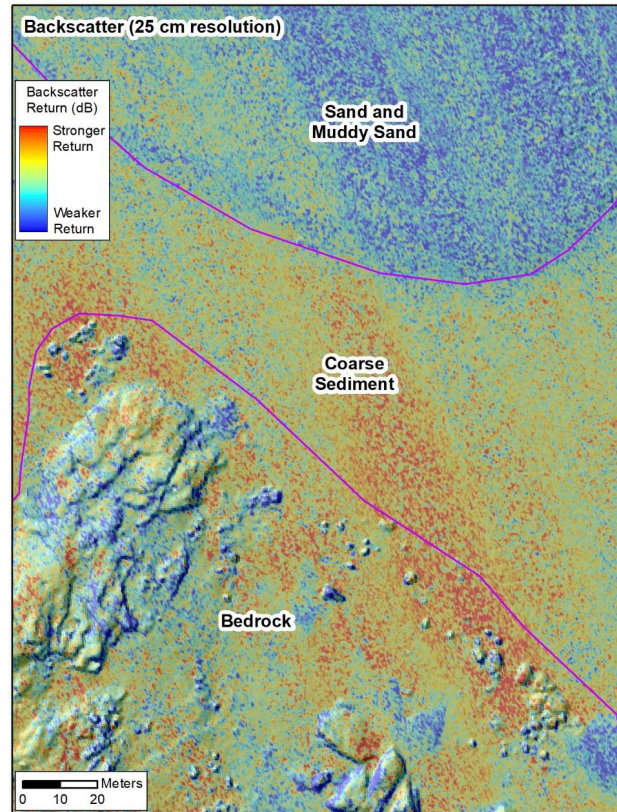
Benthic Habitat Mapping Process

Seabed Interpretation:

- Define 'facies' within MBES data with backscatter and slope changes – create
- Refine with SSS and compare to SPI/PV
- Extrapolate habitats from SPI/PV to facies (lump or split)

Habitat characterization:

- Refine characterization, add modifiers
- Capture information on bedforms
- Record information on scattered boulders and debris
- Coarse Sediment refinement variable
- Use smaller 2,000 m² minimum mapping unit



INSPIRE
Document Name: REV01_2021_RWEC_Delineation

Coordinate System: NAD 1983 UTM Zone 19N (meters)

Date: 7/27/2021

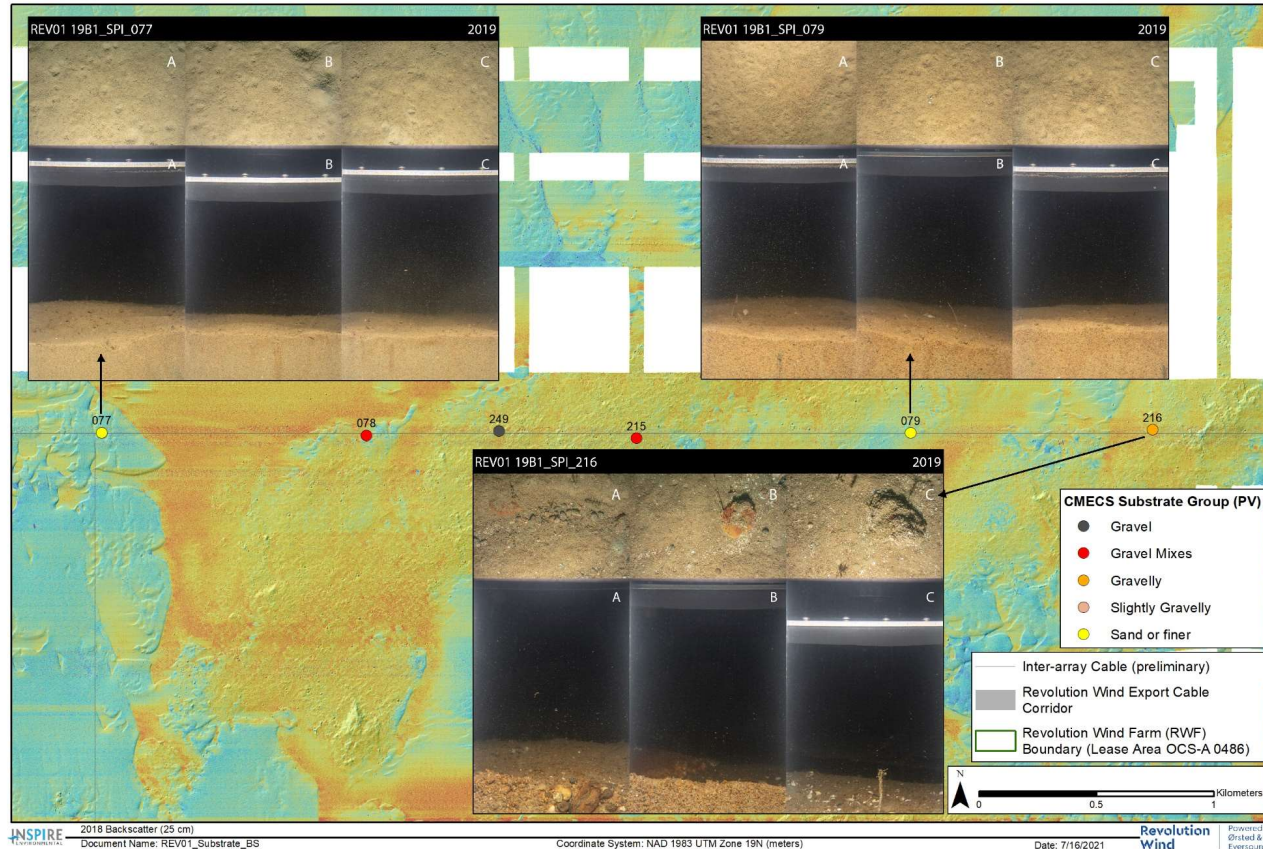
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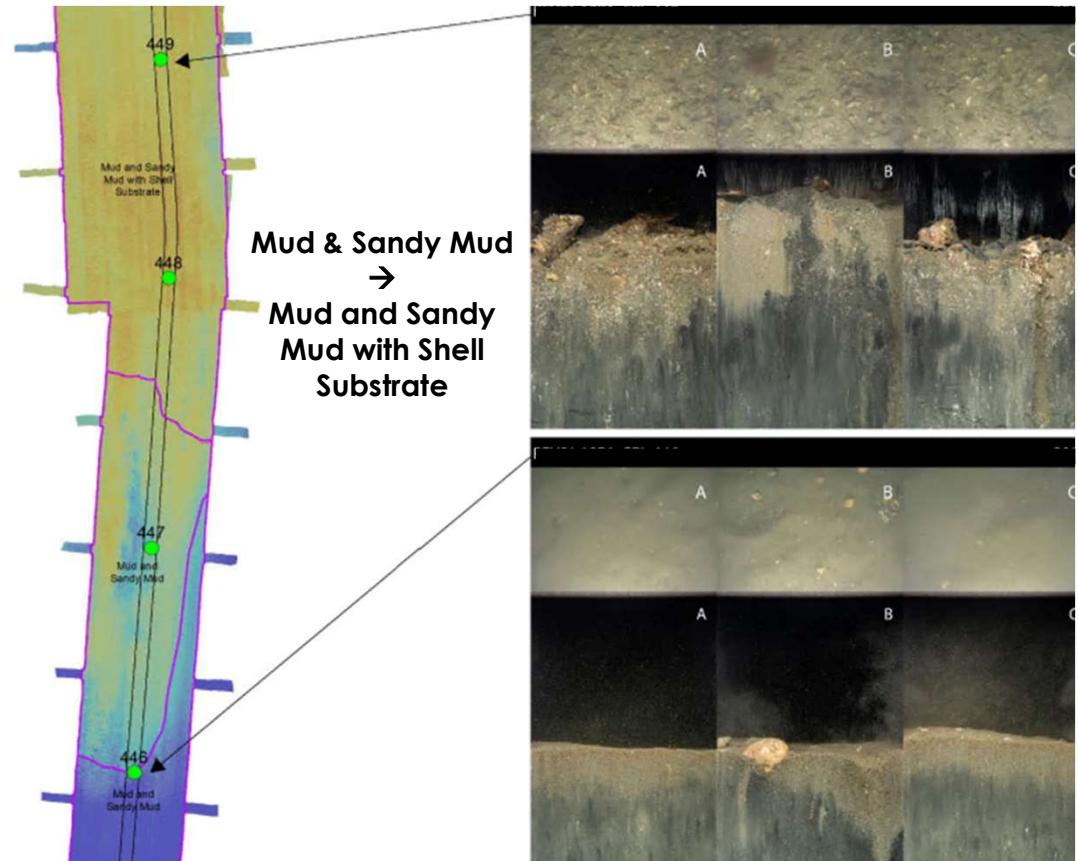
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Primary Benthic Habitat Types & Modifiers





1. **Glacial Moraine A**
2. **Glacial Moraine B**
3. **Mixed-Size Gravel in Muddy Sand**
4. **Coarse Sediment**
(5-80% gravel)
5. **Sand and Muddy Sand**
6. **Mud and Sandy Mud**
7. **Bedrock**

[Anthropogenic Features also mapped]

Benthic Habitat Classification (with Modifiers)

-  Glacial Moraine B
-  Glacial Moraine A
-  Mixed - Size Gravel in Muddy Sand
-  Coarse Sediment
-  Coarse Sediment - Mobile
-  Sand and Muddy Sand - Delta
-  Sand and Muddy Sand
-  Sand and Muddy Sand - Mobile
-  Mud and Sandy Mud
-  Mud and Sandy Mud - Mobile
-  Bedrock
-  Anthropogenic

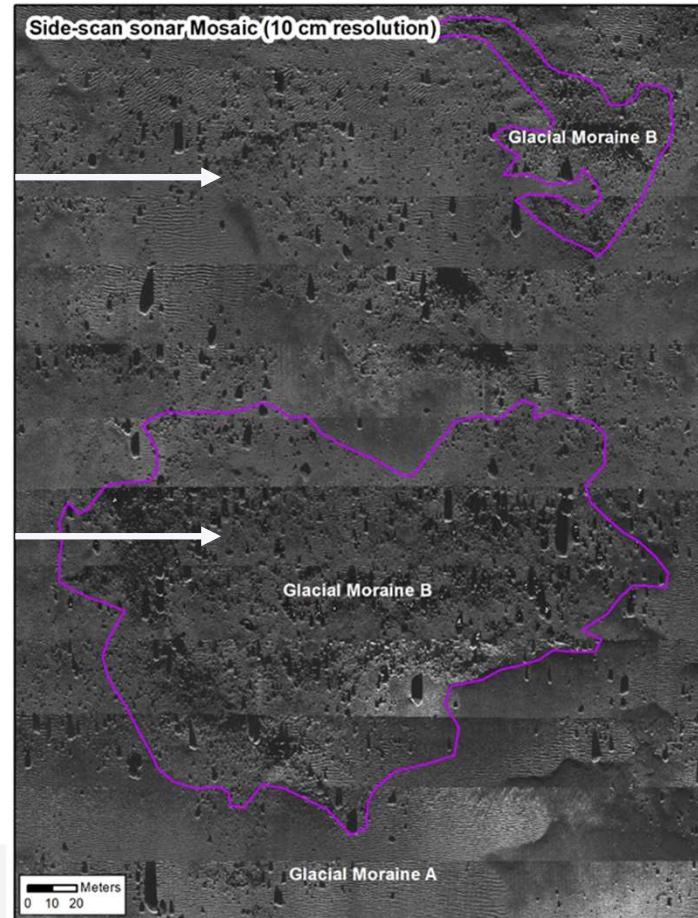
Modifiers within Habitat Polygons

-  Low Density Boulder Field
-  Medium Density Boulder Field
-  SAV
-  Shell Substrate

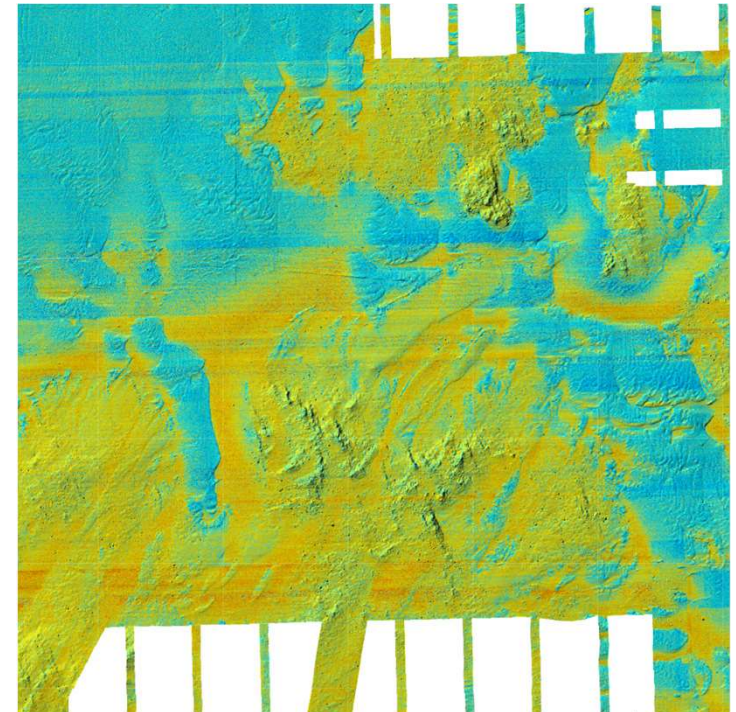
Glacial Moraine as Habitat

Glacial Moraine A -
unconsolidated glacial
moraine deposits

Glacial Moraine B -
consolidated moraine
habitats with high structural
complexity and structural
permanence



The portion of glacial moraine deposits that is exposed on the surface forms habitat important to fish and other marine animals because of their *relative structural permanence and structural complexity*.



Popup Exploration

Next Steps and Schedule

~~1. King/Oakley Data Review Kick off~~

~~2. King/Oakley complete initial review for detailed discussion – Feb to early March~~

3. King/Oakley continued review – March-April

- o Meeting to review data in more detail/discuss micro siting – early-mid April

4. King/Oakley complete review/issue comments – end of April/early May