Oregon OCS Seafloor Mapping: Selected Lease Blocks Relevant to Renewable Energy

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WHY SEAFLOOR MAPPING?

- Geohazard assessment
- Geophysical data – infrastructure design
- Siting, large and fine scale
- Baseline site characterization
  - Habitat
  - Seafloor species (fishes and invertebrates)
  - Historical/archaeological resources
- Impact assessment
LEASE BLOCKS

Seafloor mapping area of interest
The USGS Research Vessel *Parke Snavely*
Towed high-definition video and camera sled used for groundtruthing
Field operations window:
August 20 – September 11, 2014
23 days on site

Final activity allocation:
9 days of sonar mapping
3 days of video groundtruthing
8 weather days (no operations)
3 days mobilizing/demobilizing
Results: Bathymetry

Shaded relief image of all the available multibeam sonar bathymetry data

Lease aliquots outline

Original area of interest

Numbers are OCS lease blocks.

Shaded relief image of all the available multibeam sonar bathymetry data

USGS data

Applicant data

Numbers are OCS lease blocks.

RESULTS: BATHYMETRY

Shaded relief image of all the available multibeam sonar bathymetry data

Numbers are OCS lease blocks.

RESULTS: BATHYMETRY

Color scale image of all the available multibeam sonar bathymetry data
RESULTS: BATHYMETRY

Shaded relief image of all the available multibeam sonar bathymetry data
Backscatter image of all the available multibeam sonar data
RESULTS: BATHYMETRY
RESULTS: BATHYMETRY
RESULTS: BATHYMETRY
RESULTS: BATHYMETRY
GROUNDTRUTHING

MUD
MARINE MAMMALS

Observations limited to fieldwork conducted by USGS
<table>
<thead>
<tr>
<th>Common Name</th>
<th>21-Aug</th>
<th>22-Aug</th>
<th>Total</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pink-footed Shearwater</td>
<td>100</td>
<td>74</td>
<td>174</td>
<td>most moving north</td>
</tr>
<tr>
<td>Sooty Shearwater</td>
<td>58</td>
<td>94</td>
<td>152</td>
<td>most moving north</td>
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<tr>
<td>Red Phalarope</td>
<td>0</td>
<td>67</td>
<td>67</td>
<td>several flocks on current breaks and feeding on or around by-the-wind sailors</td>
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<tr>
<td>Black-footed Albatross</td>
<td>27</td>
<td>28</td>
<td>55</td>
<td></td>
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<tr>
<td>Long-tailed Jaeger</td>
<td>4</td>
<td>18</td>
<td>22</td>
<td>southbound migrants both days with more on 22 Aug</td>
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<tr>
<td>Western Gull</td>
<td>10</td>
<td>7</td>
<td>17</td>
<td></td>
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<td>Fork-tailed Storm-Petrel</td>
<td>4</td>
<td>12</td>
<td>16</td>
<td></td>
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<tr>
<td>Red-necked Phalarope</td>
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<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Rhinoceros Auklet</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Northern Fulmar</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>early in season for them</td>
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<tr>
<td>California Gull</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Cassin's Auklets</td>
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<td>1</td>
<td>3</td>
<td></td>
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<tr>
<td>Sabine's Gull</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>uncommon species</td>
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<td>rare species</td>
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<tr>
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<td>0</td>
<td>1</td>
<td>uncommon</td>
</tr>
<tr>
<td>Leach's Storm-Petrel</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ashy Storm-Petrel</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>one of very few Oregon records</td>
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<tr>
<td>South Polar Skua</td>
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<td>1</td>
<td>uncommon/rare species</td>
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<tr>
<td>Pomarine Jaeger</td>
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<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tufted Puffin</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
SEABIRDS

Pink-footed Shearwater

Black-footed Albatross

Sabine’s Gull

By-the-wind sailor, Velella velella

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STUDY PRODUCTS

• Dataset
  October 16, 2015
  A downloadable digital dataset with FGDC metadata, including multibeam data, and rasters and shapefiles of interpreted information.
  
  http://dx.doi.org/10.5066/F7V40S8V

• Maps
  March 2016
  Printable pdf-format maps illustrating
  o Bathymetry
  o Backscatter intensity
  o Seafloor character
  o Coastal and Marine Ecological Classification Standard (CMECS)
    ▪ surficial substrate
    ▪ geomorphology

• Final report and technical summary
  March 2016
  A printable pdf-format summarizing the field work, methodology, and results of the study.
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QUESTIONS?

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