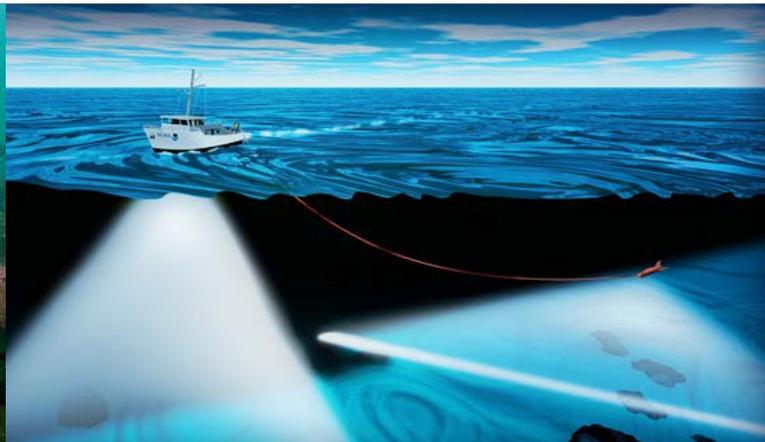




Benthic Habitats: Regulatory Approach to Surveying the Ocean Floor

Lisa Gilbane

November 2, 2016 • Davis, California

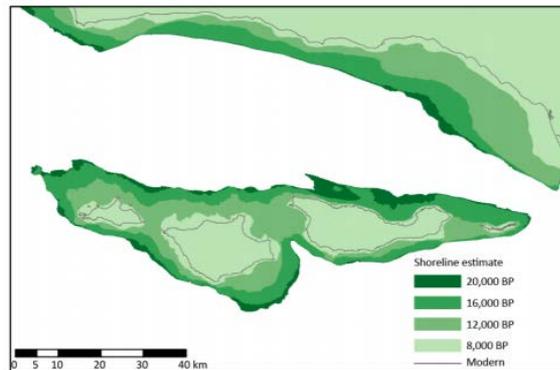
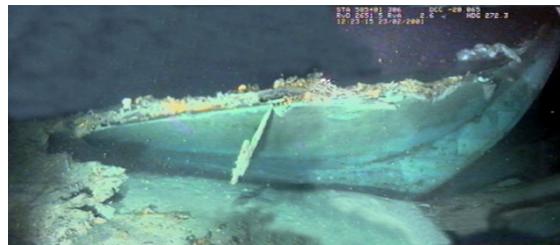


Loose Definition of Benthic Habitat

Species and Biological Groupings

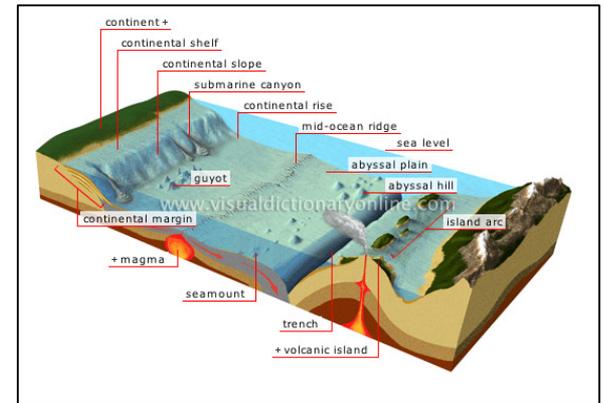


Historic Properties

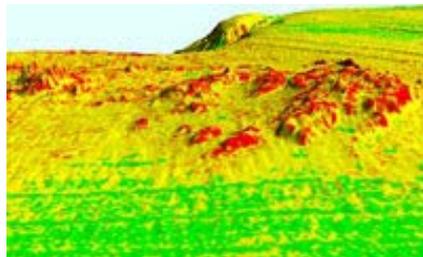


Reconstruction of shorelines of the Northern Channel Islands through time.

Geological Features



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



- **Outer Continental Shelf Lands Act**
(as amended by the Energy Policy Act of 2005)
- **National Environmental Policy Act**
- **Magnuson-Stevens Fishery Conservation and Management Act: Essential Fish Habitat**
- **National Historic Preservation Act**
- **Coastal Zone Management Act**



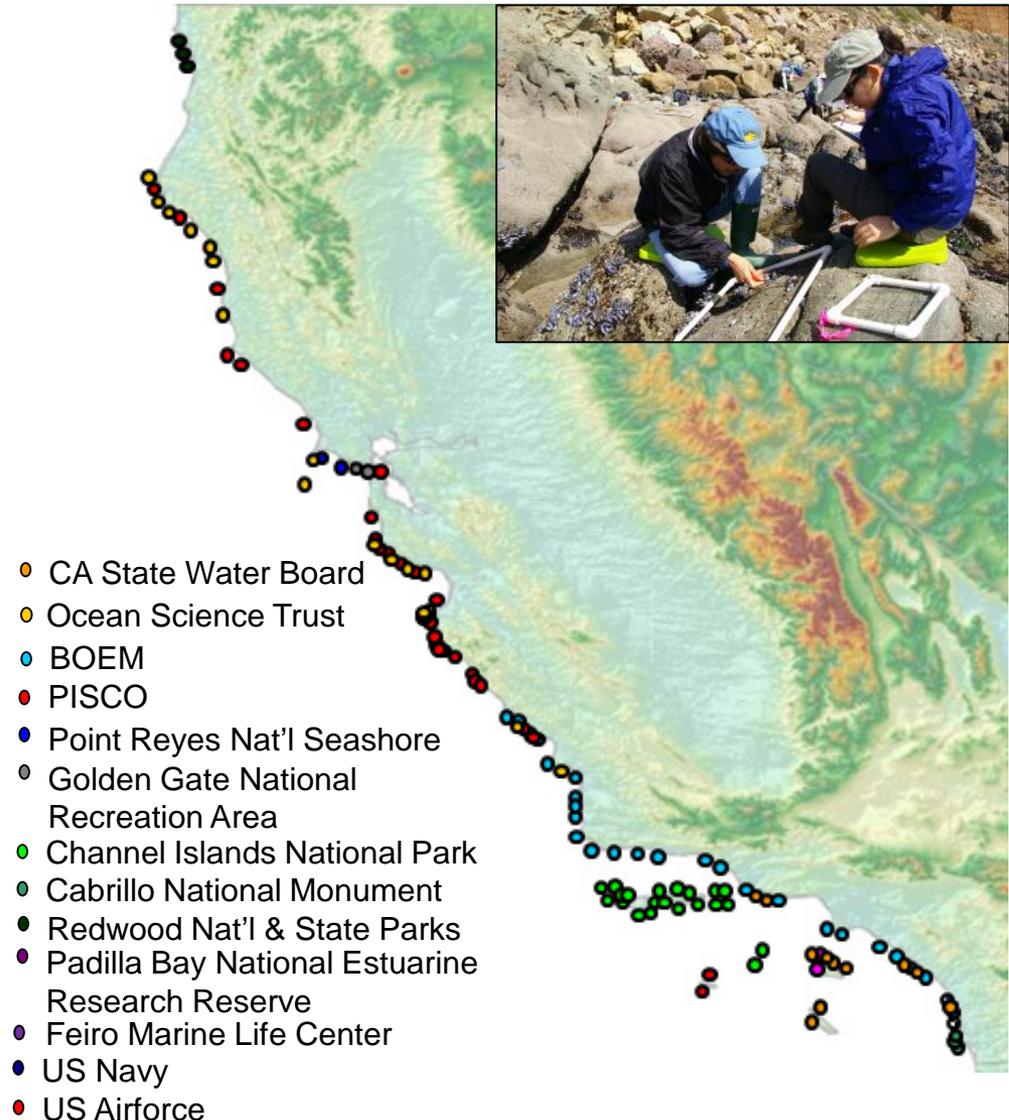
Existing Information

Surveys Completed by
Developers

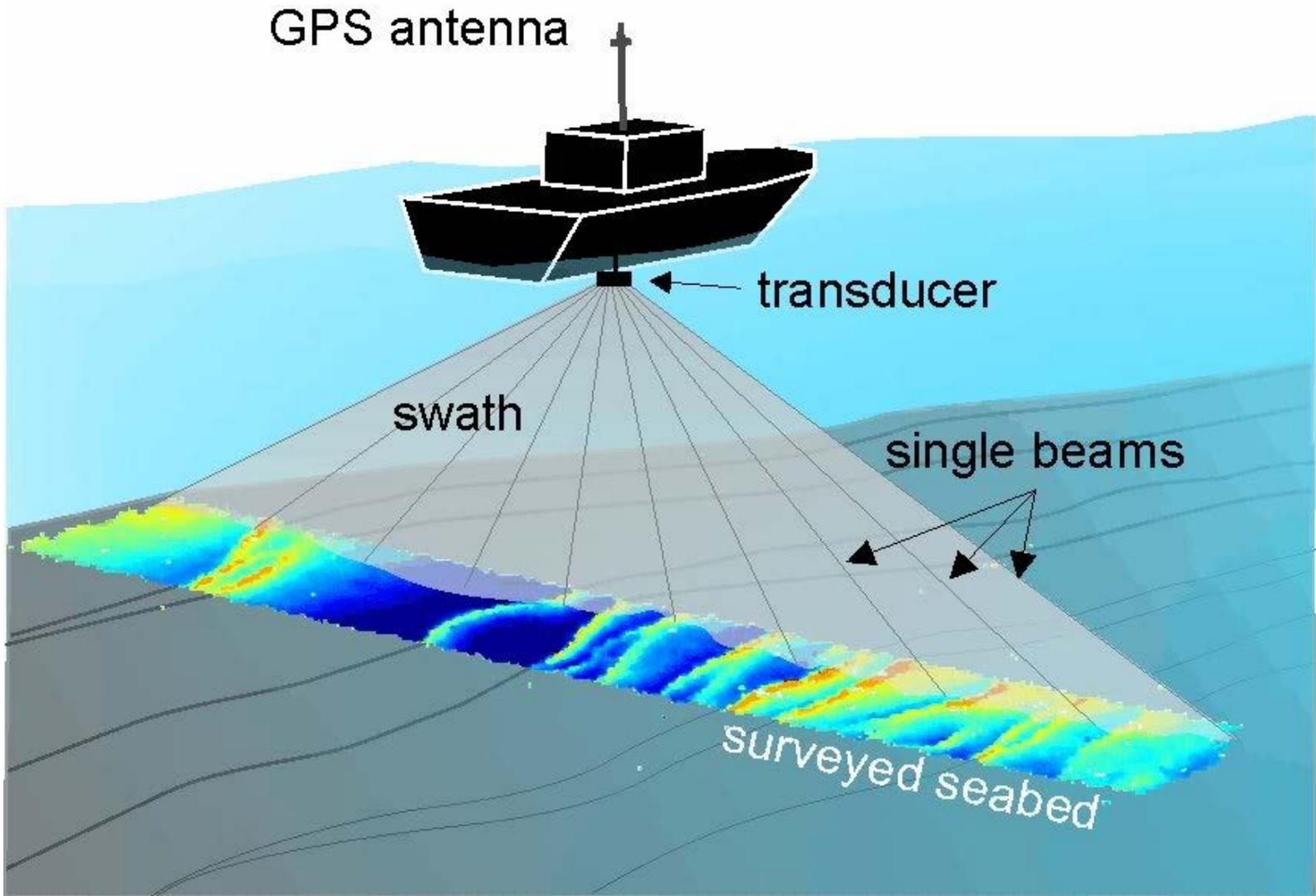
BOEM Studies Program
(Funding and Partnerships)

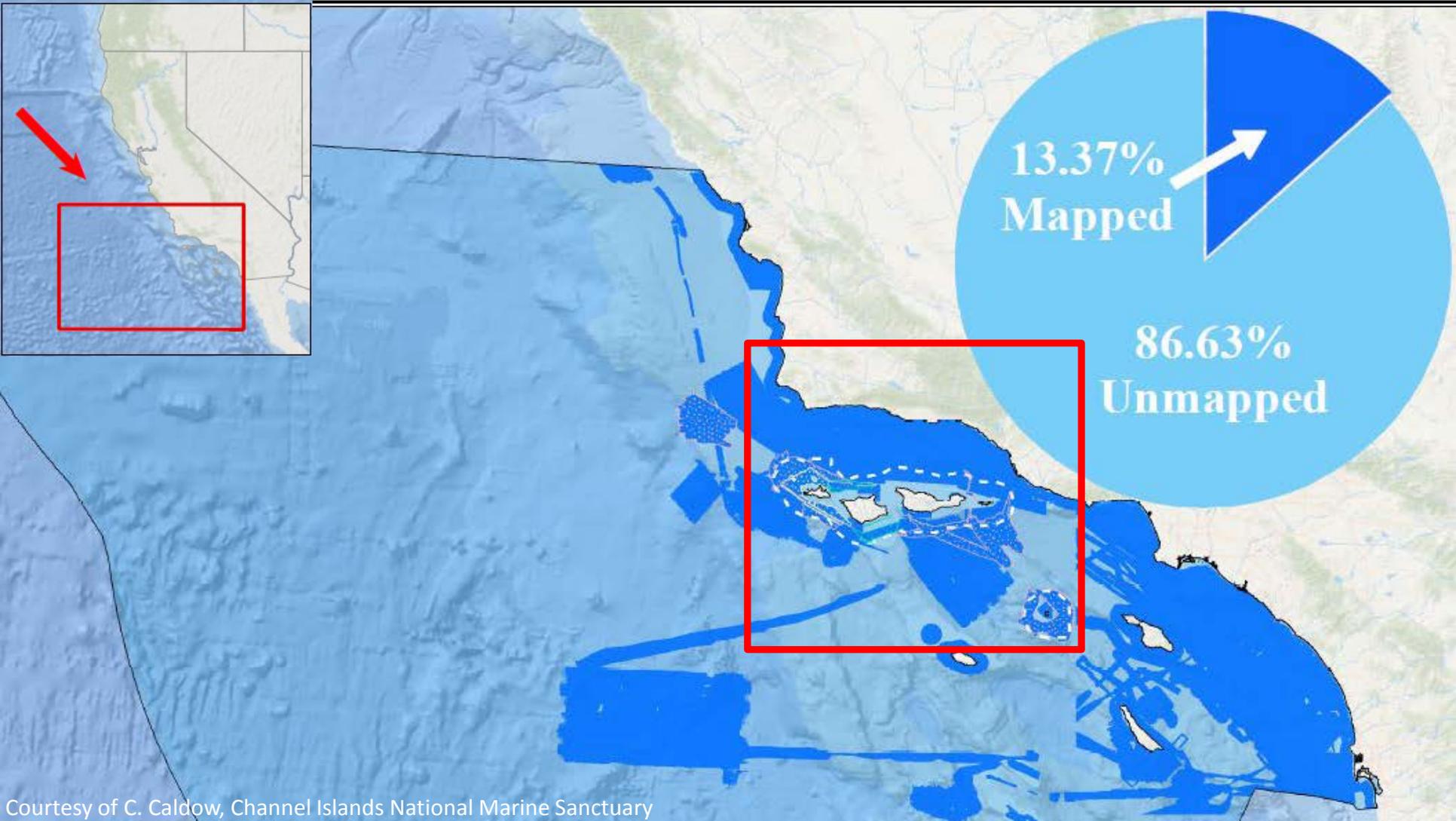
Multi-Agency Rocky Intertidal Network

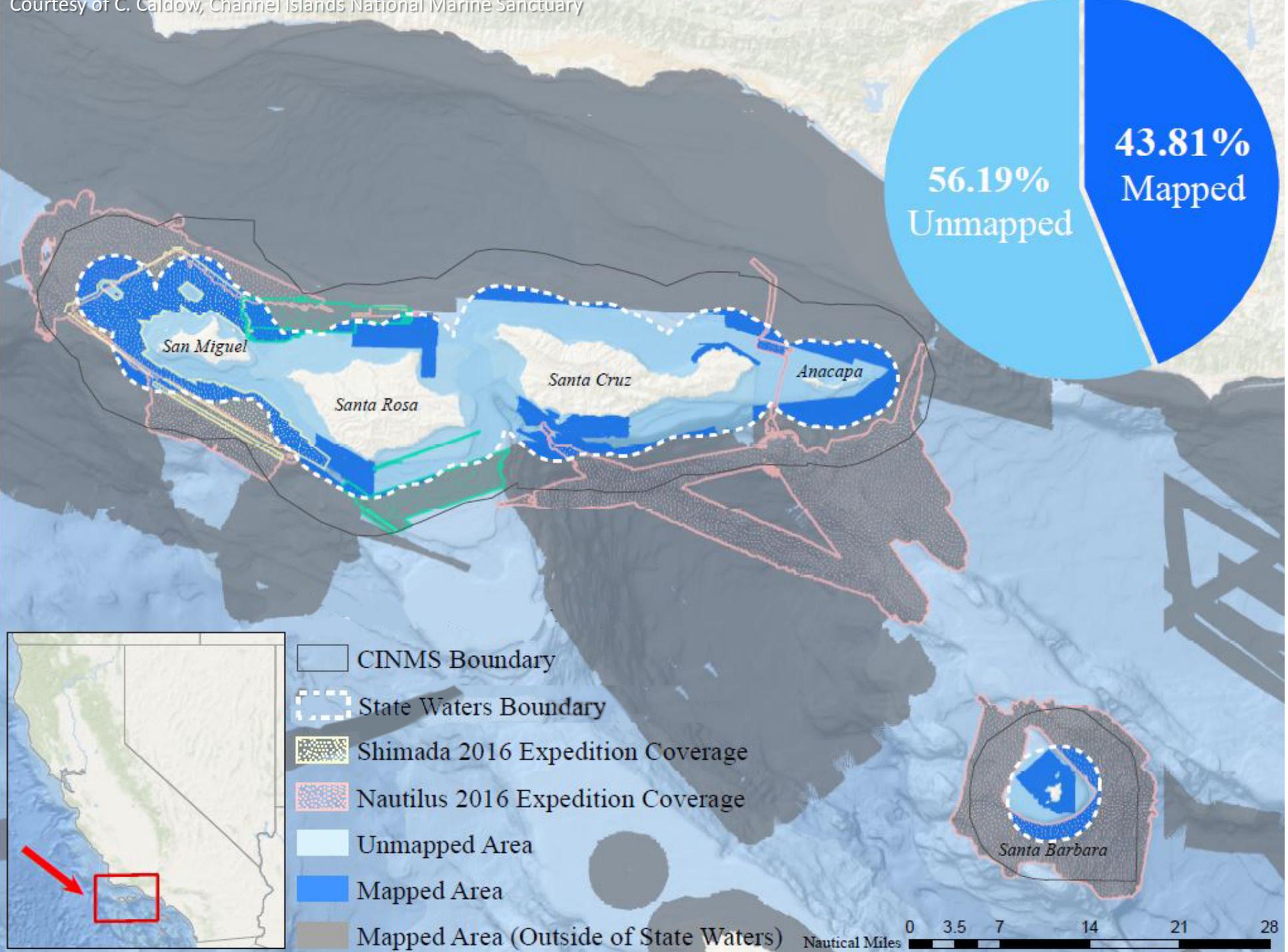
- 156 long-term sites used in MPA designation
 - 3 North Coast
 - 34 North Central
 - 43 Central Coast
 - 76 South Coast
- 76 long-term sites now within MPAs
- 80 long-term sites serve as outside MPA comparisons for continued monitoring
- 24 long-term sites are supported by BOEM



Multibeam Bathymetry

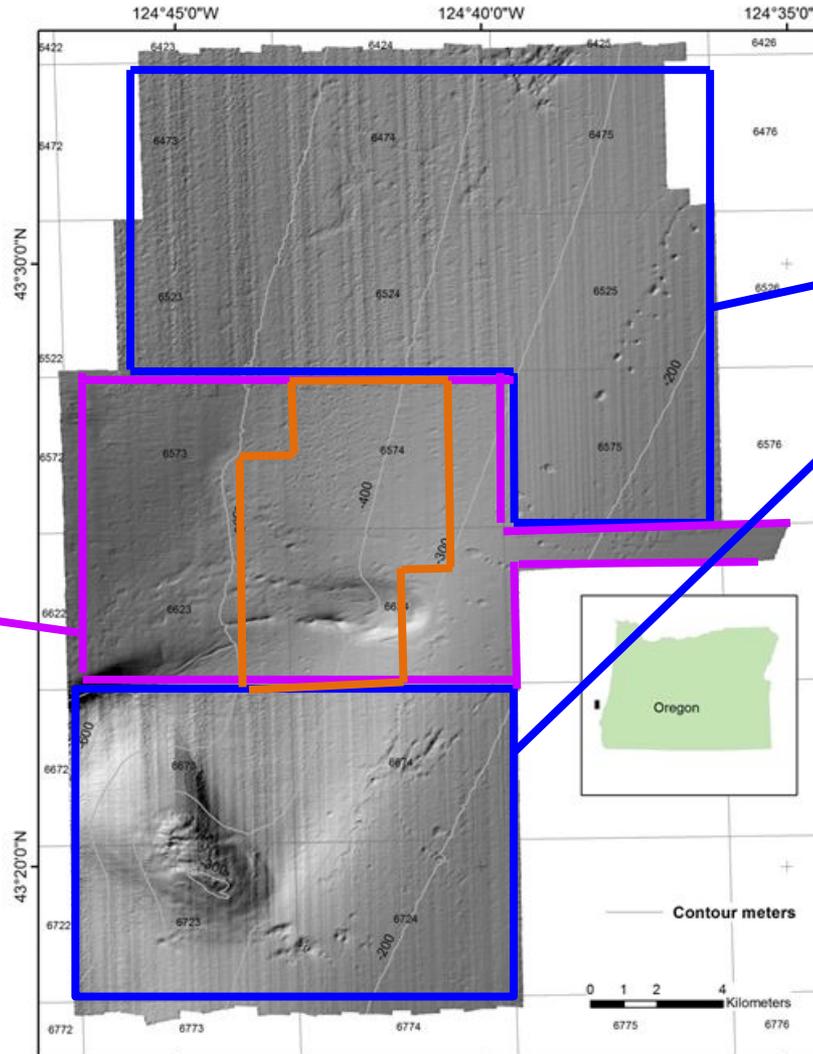






Shaded relief image of all the available multibeam sonar bathymetry data

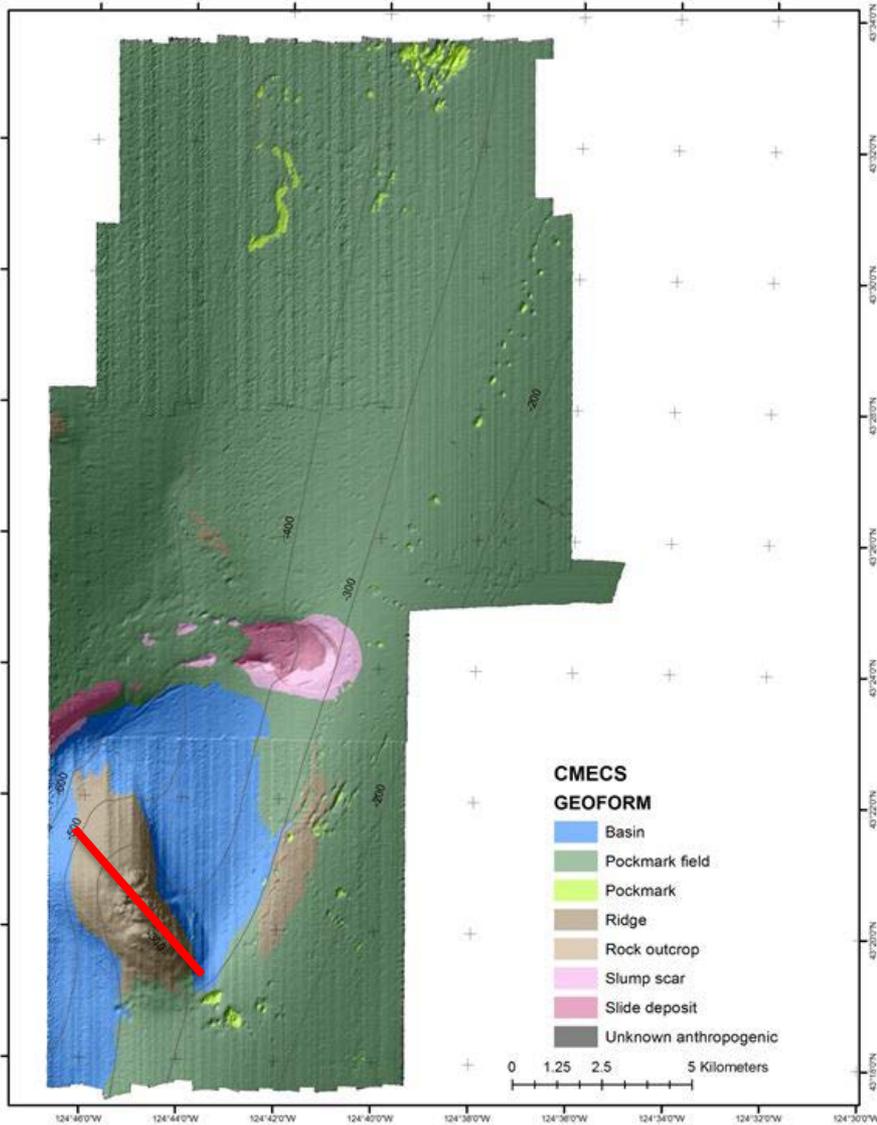
Applicant data



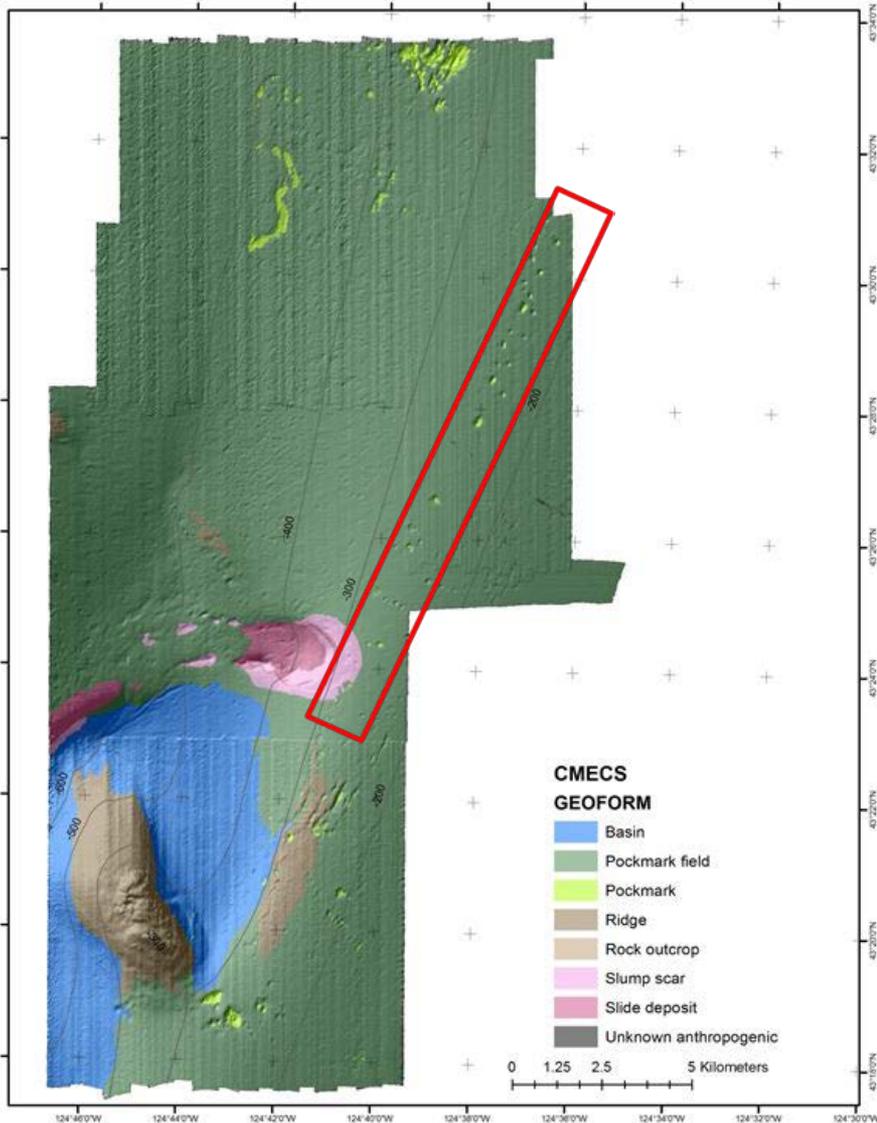
USGS data

Numbers are OCS lease blocks.

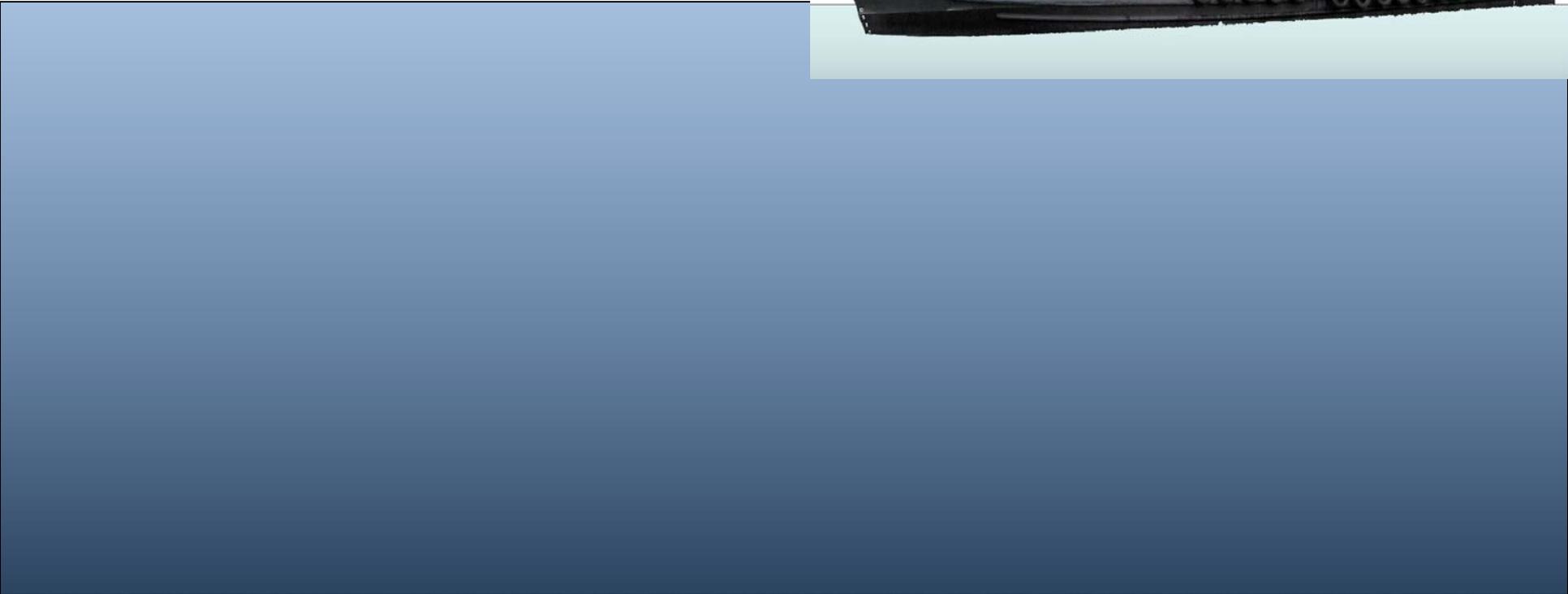
Active subsurface structure data from: Goldfinger, Kulm, and Yeats, 1992. Neotectonic map of the Oregon continental margin and adjacent abyssal plain. Oregon Dept. of Geology and Mineral Industries Open-File Report O-92-4.



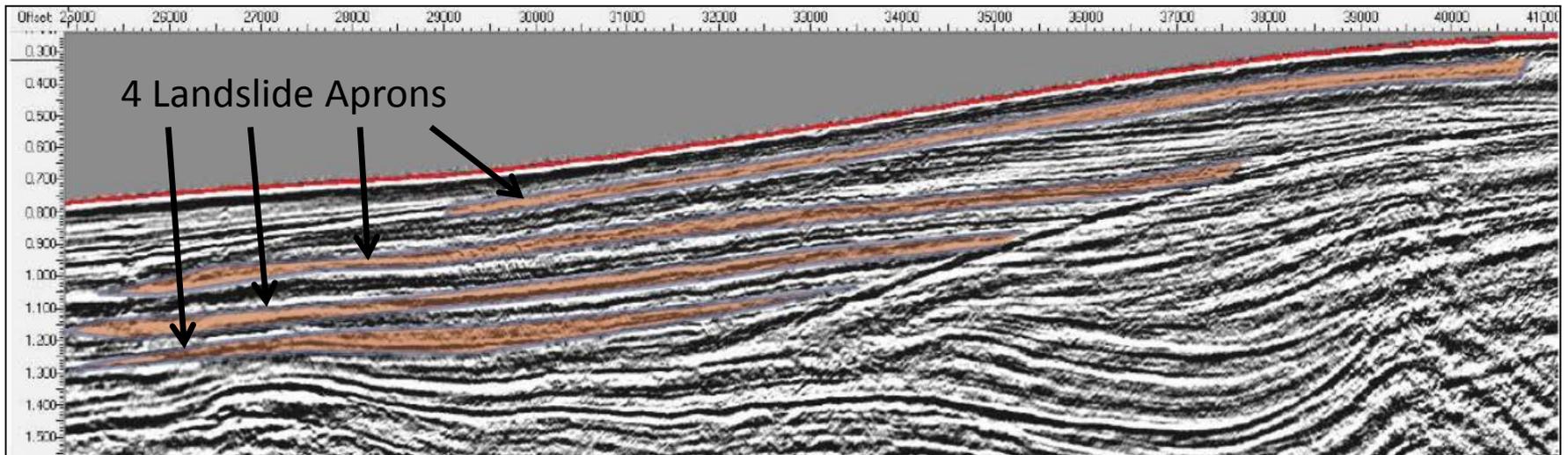
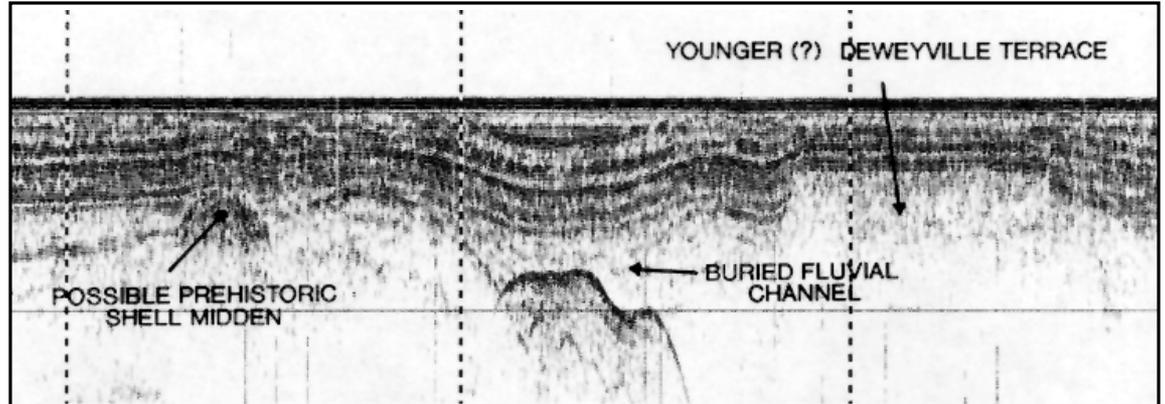
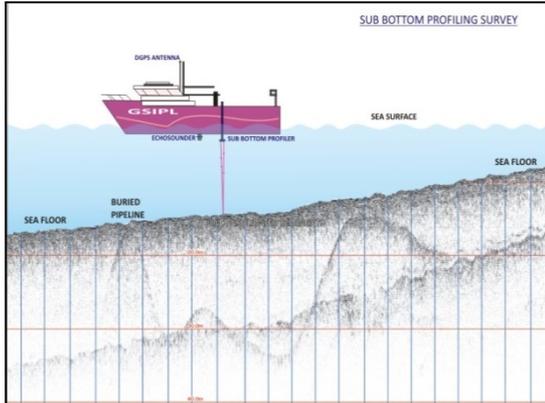
USGS & BOEM Study: Oregon Seafloor Mapping
Draft courtesy of G.R. Cochrane, <http://www.boem.gov/pr-13-osm/>



USGS & BOEM Study: Oregon Seafloor Mapping
Draft courtesy of G.R. Cochrane, <http://www.boem.gov/pr-13-osm/>



Targeted Geophysical Surveys



Years Before
Construction

Now

6

4

3

Survey
Planning
Begins

Vessels
Booked

Bathymetric
Survey

Visual
G&G
Surveys



The Asahi Shimbun via Getty Images



Regulations

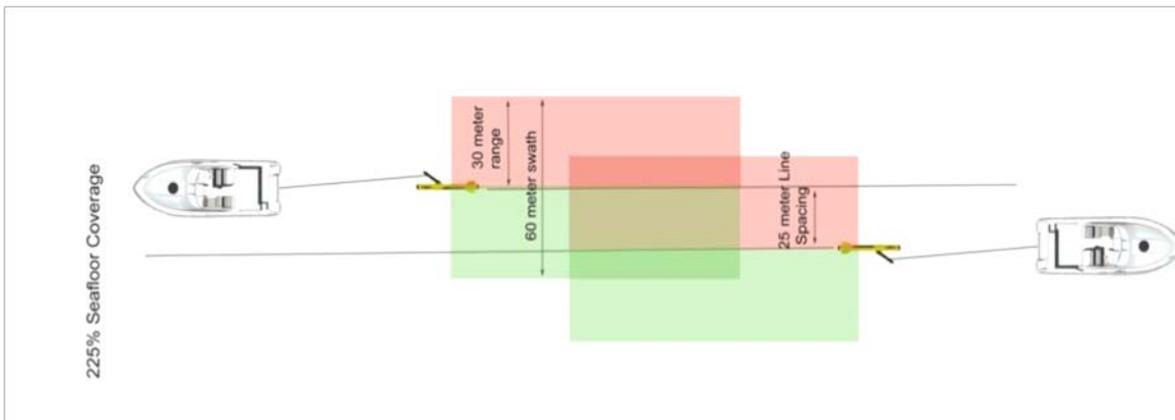
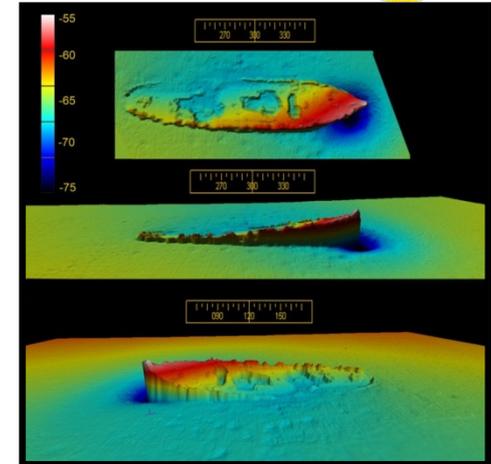
http://www.boem.gov/uploadedFiles/30_CFR_585.pdf

585.610(b), 585.626(a), 585.645(a), 585.611(a),(b)(1), and (b)(6), 585.627(a)(1) and (6), 585.646(a) and (f).

Guidelines and Notice to Lessees

<http://www.boem.gov/National-and-Regional-Guidelines-for-Renewable-Energy-Activities/>

- Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant, July 2015
- Guidelines for Providing Archaeological and Historic Property Information, July 2015





Contact for More Information



Lisa Gilbane

Biologist

Bureau of Ocean Energy Management

Pacific OCS Region

805-384-6387

Lisa.Gilbane@boem.gov

www.boem.gov/Pacific-Region

Thank you to David Ball (BOEM), Donna Schroeder (BOEM), Guy Cochran (USGS) and Chris Caldow (NOAA) for images!