

# Monterey Bay National Marine Sanctuary

## Habitat Characterization of the Continental Shelf

### Management Issue

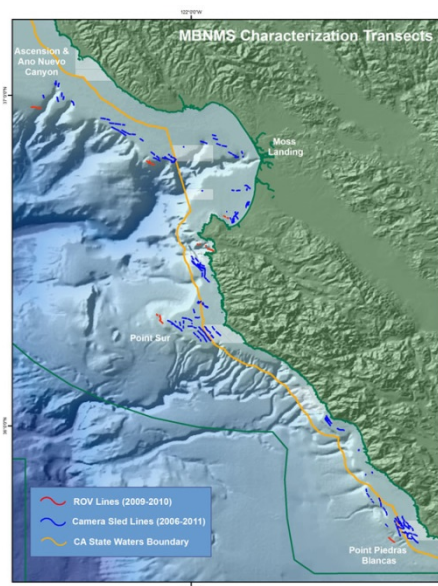
Seafloor characterization is necessary to ground-truth habitat maps and inform management decisions at the Monterey Bay National Marine Sanctuary (MBNMS or Sanctuary).

### Description

Seafloor habitats on the continental shelf, ranging from 30-200 meter water depth, comprise one third of the Sanctuary. Yet they are poorly characterized and not systematically monitored. Digital images and video captured using towed camera sleds facilitate rapid, qualitative assessments of specific locations where human activities are planned or have occurred (e.g., laying cables, marine reserves). These images can also be used for more detailed quantitative assessments through time to monitor natural changes and recovery from human disturbances. Web-based GIS applications can provide easy access to geo-located images, facilitating the use of this information by educators and managers.

### Questions and Information Needs

- 1) What does the continental shelf “look like” in specific locations?
- 2) What are the distribution and abundance of organisms and habitats on the continental shelf?
- 3) Where are areas of high species diversity associated with soft bottom habitats in the Sanctuary?
- 4) How are benthic organisms changing through time in specific areas of interest (e.g., marine reserves)?



*Video transect locations. Green lines denote MBNMS boundaries and golden lines state waters. The red lines indicate ROV tracks while blue lines denote the towed camera sled. Map credit: MBNMS/CSUMB*

### Scientific Approach and Actions

- Complete rapid qualitative data collection with towed camera systems for areas of the Sanctuary that are not characterized
- Groundtruth topographic habitat features on existing maps
- Scope areas for future comprehensive surveys using operationally expensive equipment (i.e., remotely operated vehicles, submersibles)
- Compile a library of still images and videos
- Develop methods to geographically display images over the World Wide Web

### Potential Key Partners and Information Sources

California State University Monterey Bay, National Marine Fisheries Service, UC Sea Grant, Monterey Bay Aquarium Research Institute, California Department of Fish and Game, California Ocean Protection Council

### Management Support Products

- Integrated map of the distribution of fishes, invertebrates, and habitats of the continental shelf seafloor
- Geo-located image access system available on the Internet

*Current as of 11/28/2012*

*For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>*

## Planned Use of Products and Actions

- Utilize baseline data to mitigate future environmental impacts
- Develop recommendations for marine protected areas management processes
- Monitor areas of interest through time, including marine reserves and trawl recovery zones

## Program References

### MBNMS Management Plan

- Bottom Trawling Effects on Benthic Habitats Action Plan, Strategy BH-3, BH-5
- Marine Protected Areas Action Plan, Strategy MPA-2, MPA-9

### MBNMS Condition Report

- What is the abundance and distribution of major habitat types and how is it changing? (Offshore Environment – Question 5)
- What is the condition of biologically-structured habitats and how is it changing? (Offshore Environment – Question 6)
- What are the levels of human activities that may influence habitat quality and how are they changing? (Offshore Environment – Question 8)
- What is the status of biodiversity and how is it changing? (Offshore Environment – Question 9)
- What is the status of environmentally sustainable fishing and how is it changing? (Offshore Environment – Question 10)
- What are the levels of human activities that may influence living resource quality and how are they changing? (Offshore Environment – Question 14)

### ONMS Performance Measures

- By 2015, 100% of the sanctuary system is adequately characterized
- Number of sites in which habitat, based on long-term monitoring data, is being maintained or improved
- Number of sites in which select living marine resources (LMRs), based on long-term monitoring data, are being maintained or improved



*Brittle stars partially buried in sand on the continental shelf off Moss Landing, CA. Image credit: MBNMS/SIMoN.*

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