

Navigating the Future

Management Plan Review

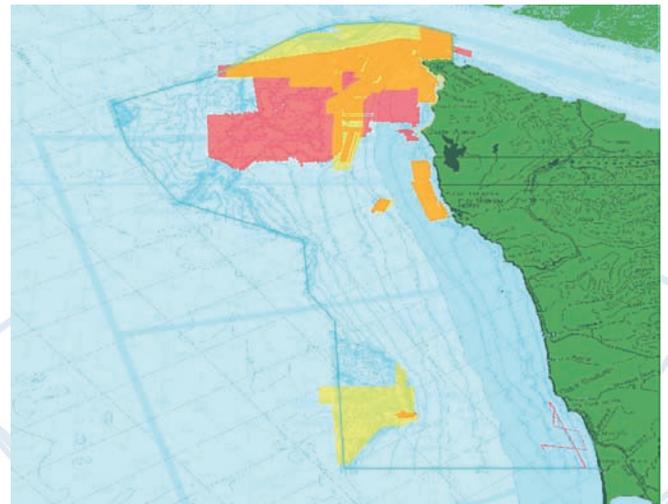


Habitat Mapping

Classification of habitats and the general characterization of the seafloor (benthic) are critical for supporting management, research, monitoring, and education within the national marine sanctuaries. Thus far, only 25% of the Olympic Coast National Marine Sanctuary (OCNMS) seafloor has been adequately mapped. Habitat mapping and characterization are high priorities for OCNMS, especially for recently discovered deep-sea habitats that may be sensitive to anthropogenic disturbance. Additionally, recent declines in various west coast groundfish stocks have led to some areas being classified as Essential Fish Habitat.

A variety of mapping technologies are employed; they include side scan sonar and multibeam sonar, as well as remotely operated vehicles (ROV) and autonomously operated vehicles (AUV). Side scan sonar transmits sound energy and analyzes the return signal (echo) that has bounced off the seafloor. Side scan transducers emit fan-shaped pulses of high-frequency sound energy. The strength of the return echo is continuously recorded creating a “picture” of the ocean that can be interpreted into hard or soft bottom textures. In contrast, multibeam sonar provides seafloor mapping data similar to side scan, but the output data is in the form of depths rather than images. These technologies make it possible to create high resolution 3-dimensional renderings of the seabed. Backscatter data from multibeam surveys can also add to interpreting seafloor substrates. Benthic habitat can be further characterized and ground-truthed with bottom grabs to retrieve benthic substrate or by video systems mounted on ROVs, AUVs or drop cameras.

Mandates for habitat mapping and characterization are highlighted in the National Marine Sanctuaries Act, the West Coast Governor’s Ocean Action Plan and the Washington State Seafloor Mapping Workshop. OCNMS and its habitat mapping partners (Inter-governmental Policy Council, U.S. Geological Survey, Northwest Fisheries Science Center, Pacific Fishery Management Council, Northwest Indian Fisheries Commission, and National Centers for Coastal Ocean Science) are trying to meet the challenge to complete seafloor surveys in and around the sanctuary.



Colored polygons represent areas currently mapped within OCNMS

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