

# Seafloor Mapping on the U.S. West Coast

**Introduction:** This worksheet presents some of the most pressing needs and uses for detailed seafloor mapping in the nearshore waters of California, Oregon, and Washington. Presently, detailed bottom mapping exists for only about 65% of this area in California, 5% in Oregon, and 13% in Washington.

## Scientific and Policy Consensus

Scientific consensus for seafloor mapping has been established in the three west coast states through public meetings, workshops and scientific publications showing the benefits and need for mapping data. In response, comprehensive seafloor mapping of state waters has been identified as an important and unifying goal of the West Coast Governors' Agreement on Ocean Health. These data have many high priority uses.

## Marine and Habitat Science



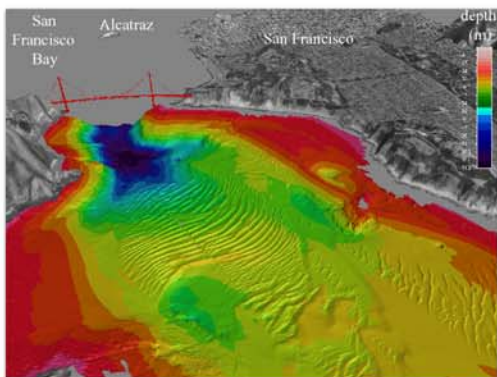
We now understand that many west coast fish and other marine life are dependent upon spatially explicit, yet limited, seafloor habitat features. Describing and classifying these habitats are essential components of effectively assessing and managing west coast marine resources. Seafloor mapping is the fundamental starting point for modeling nearshore fish populations for both the Federal Essential Fish Habitat process and State fisheries management. Mapping is also needed to identify the marine debris that locally degrades important habitats.

## Coastal Erosion, Sea Level Rise Impacts

West coast states have been experiencing significant coastal erosion, threatening property, infrastructure, recreation, and coastal economies. Coastal erosion and significant flooding from large winter storms will become even more important as sea level continues to rise in the coming decades. Protecting the coastline and regional sediment management are among the many coastal zone management challenges that require high-resolution near-shore bathymetry and coastal topography. Seafloor mapping data provide the basis for modeling ocean circulation, currents, waves, and sediment transport, needed to develop mitigation strategies.



## Navigation and Safe Commerce



Nautical charting is of critical importance to safe navigation and commerce, and depends upon detailed seafloor data. Many areas along the west coast presently are charted based on data collected during the 19th and 20th centuries using lead weights at the end of a rope. Not only are these data of poor quality, the nearshore seabed is constantly changing, requiring modern new data. Modern surveys in these areas have revealed numerous unknown navigation hazards. High-resolution seafloor mapping data supports safe navigation and maritime commerce as well as providing base map data for engineering, scientific and commercial activities.

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