

DESCRIPTION OF MAP UNITS

UNCONSOLIDATED CONTINENTAL SHELF SEDIMENTS

- Sa(s/m)_ru Soft unconsolidated sediment (sand and mud), predominantly rippled
- Se(s/m/mw)_u Unconsolidated dynamic mound of sediment (sand and mud)
- Se(s)_ru Soft unconsolidated sediment, predominantly rippled (sand)
- Se(s)/hw_ru/su Soft mobile scour depression with unconsolidated and rippled sediment waves, overlying scoured lag pavement of sand and gravel

MIXED SUBSTRATE ON CONTINENTAL SHELF

- Sme_gu Mixed habitat of soft unconsolidated sediment overlying hard granitic bedrock

HARD SUBSTRATE ON CONTINENTAL SHELF

- Shr_g Bedrock outcrop of hard granite
- Shb/bp_g Boulder or pinnacle of hard granite

EXPLANATION OF MAP SYMBOLS

- Contact
- Area of "no data"—Areas near shoreline not mapped owing to insufficient high-resolution seafloor mapping data; areas beyond 3 nautical-mile limit of California's State Waters were not mapped as part of California Seafloor Mapping Program
- 3-nautical-mile limit of California's State Waters
- 10 Bathymetric contour (in meters)—Derived from modified 10-m-resolution bathymetry grid. Contour intervals: 10 m

DISCUSSION

This map shows "potential" marine benthic habitats in the Offshore of Salt Point map area. Marine benthic habitats represent a particular type of substrate, geomorphology, seafloor process, or any other attribute that may provide a habitat for a specific species or an assemblage of organisms. Such maps are based largely on seafloor geology, and this map integrates seafloor geology (sheet 10) with information depicted on several other thematic maps of the Offshore of Salt Point map area: high-resolution bathymetry (sheet 1); shaded-relief imagery (sheet 2); backscatter (sheet 3); seafloor character (sheet 5); and ground-truth information (sheet 6). This map also uses information from the seSEABED bottom-sampling compilation by Reid and others (2006). The combination of remotely observed data (for example, multibeam bathymetry and backscatter, seismic-reflection profiles) and directly observed data (for example, camera transects, sediment samples) translates to higher confidence in the ability to interpret broad areas of the seafloor.

To avoid any possible misunderstanding of the term "habitat," the term "potential habitat" (as defined by Greene and others, 2005) is used herein to describe a set of distinct seafloor conditions that in the future may qualify as an "actual habitat." Once habitat associations of a species are determined, they can be used to create maps that depict actual habitats, which then need to be confirmed by "ground-truth" surveying using in situ observations, video, and cor photographic documentation.

Marine benthic habitats are classified using the Benthic Marine Potential Habitat Classification Scheme, a mapping-attribute code developed by Greene and others (1999, 2007). In this map series, habitat-classification codes are based on the deepwater habitat-characterization scheme developed by Greene and others (1999), which was created to not only easily distinguish marine benthic habitats but also to facilitate ease of use and queries within GIS and database programs. The code, which is summarized in chapter 6 in the accompanying pamphlet, is derived from several categories of the Benthic Marine Potential Habitat Classification Scheme (Greene and others, 1999, 2007), and it can be subdivided on the basis of the spatial scale of the data.

High-resolution, multibeam-sonar data, converted to bathymetric depth grids (seafloor digital elevation models; sheet 1), are essential to development of the habitat map. Shaded-relief imagery (sheet 2) allows for visualization of seafloor terrain, providing a foundation for interpretation of submarine landforms. Areas of seafloor bedrock exposures are identified by their common sharp edges and high relative relief; these may be contiguous outcrops, isolated parts of outcrop protruding through sediment cover (pinnacles or knobs), or isolated boulders. High backscatter is further indication of "hard" bottom, consistent with interpretation as rock or coarse sediment. In many locations, areas within or around a rocky feature appear to be covered by a thin layer of sediment, identified on the habitat map as "mixed" in nature (in other words, containing both rock and sediment). Broad, generally smooth areas of the seafloor that lack sharp and angular edge characteristics are mapped as "sediment" and are further defined by various sedimentary features such as crossonal scores and depressions, as well as depositional features such as dunes, mounds, or sand waves. Low backscatter, indicative of a "soft" bottom, also significantly aids identification and classification of sedimentary habitats.

The Offshore of Salt Point map area contains 7 potential marine benthic habitat types, covering 122.69 km². These habitat types range from unconsolidated continental shelf sediments (4 habitat types), to mixed substrate on the continental shelf (1 habitat type), to hard substrate on continental shelf (2 habitat types). Predominant habitat type by area is soft, unconsolidated sediment, which covers 0.23 km² (0.2 percent). Bedrock covers 9.33 km² (7.6 percent), and sediment-covered bedrock covers 0.23 km² (0.2 percent). Rock outcrops and rubble are considered the primary habitat types for rockfish and lingcod (Cass and others, 1990; Love and others, 2002), both of which are recreationally and commercially important species.

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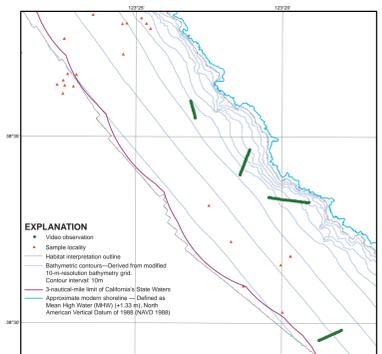
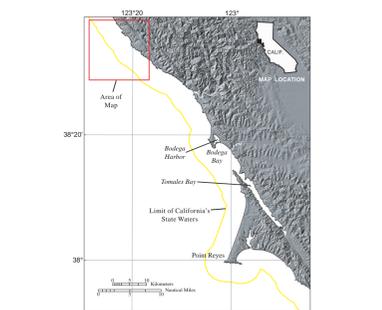
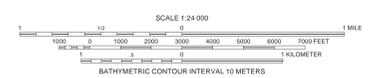


Figure 1. Map showing video-observation locations and sample localities for Offshore of Salt Point map area.

Shoreline elevation data from National Aeronautics and Space Administration and U.S. Geological Survey, available at <http://seamless.usgs.gov/>, and from U.S. Geological Survey, National Elevation Dataset, available at <http://ned.srs.gov/>. California's State Waters limit from NOAA, Office of Coast Survey Universal Transverse Mercator projection, Zone 10N.



Potential marine benthic habitats mapped by H. Gary Greene, Charles A. Endris and Bryan E. Dieter, 2012-2013. Bathymetric contours by Peter Carlson, 2013. GIS database and digital cartography by Charles A. Endris, Mercedes D. Erdey and Erik N. Lowe. Manuscript approved for publication May 12, 2015.

Potential Marine Benthic Habitats, Offshore of Salt Point Map Area, California
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