Multi-Sensor Mapping of Nearshore Seafloor Habitat for San Diego Region

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Abstract: A major California regional program to map seafloor habitat from the Mexican border to Dana Point between high tide and 20 fathoms was completed in 2003. The California Coastal Conservancy sponsors this program in association with Sandag. This presentation presents results of the Phase II survey vessel and airborne operations for data acquisition, and presents results in format from Phase I seafloor classification system. These results provide the first comprehensive detailed map offshore San Diego using modern technologies.

Three complementary survey technologies were integrated to obtain seafloor and intertidal data over the 135-kilometer stretch of coastline.

1. Multibeam echosounder data acquisition produced two essential submarine data sets:
   a. Detailed bathymetric coverage for 100% of the seafloor survey area, and
   b. Acoustic backscatter data that are co-registered with the bathymetry and produces airphoto-like imagery that is accurately geo-referenced.
2. Hydrographic LIDAR data acquired by USACE and provided by Scripps Institution of Oceanography.
3. Digital Multi-spectral Camera (DMSC) imagery acquired and interpreted by Ocean Imaging.

The acoustic mapping covered the zone between 8m to 38m depth. The DMSC and LIDAR data sets covered from 8m to the high-tide line.

Detailed examples of all data types will be presented as well as the overall integrated and interpreted final maps. The maps were delivered in GIS format for presentation to the public via the Internet.

A primary application for these results will be for planning sand replenishment projects. However the data are high-resolution and comprehensive and can be used by fishermen and fisheries scientists, divers, and coastal scientists for a wider range of purposes.

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