Acoustic Backscatter, Hueneme Canyon and Vicinity, California

By

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DISCUSSION

The acoustic backscatter map of Hueneme Canyon and vicinity in selected California was generated from acoustic data collected as part of the California Seafloor Mapping Program. The data were collected using a 244-kHz multibeam echosounder in 2006 and 2007. The resulting maps provide valuable information for understanding the acoustic properties of the seafloor in this area.

Intensities were radiometrically corrected (including despeckling and angle-varying gain adjustments), and the acoustic-backscatter grids were imported into CARIS7.0/Geocoder software. Geobars were created for each survey line using the beam-averaging engine. Once the acoustic-backscatter grids were transformed to a common projection, the grids were combined in a CodaOctopus F180 attitude-and-position system to produce a high-precision vessel-motion model.

The backscatter data were postprocessed using vertical-position data from the CNA V receiver. Backscatter data then were postprocessed using velocimeter. Soundings were corrected for vessel motion using the Applanix POS/MV data, for variations in velocity fluctuations, and sound-velocity profiles were collected with an Applied Microsystems (AM) SVPlus sound velocimeter. Acoustic source level; the frequency used to image the seafloor; the grazing angle; the composition and texture of the seafloor (e.g., hard vs. soft); and the amount of biological cover. Harder and rougher bottom types such as rocky outcrops or coarse sediment typically return stronger intensities (high backscatter, lighter tones), whereas softer bottom types such as fine sediment return weaker intensities (low backscatter, darker tones).

Figure 1. Map showing areas of multibeam-echosounder and bathymetric-sidescan surveys (pink areas). The resulting map shows the distribution of acoustic backscatter in the Hueneme Canyon area. The map is useful for understanding the acoustic properties of the seafloor and can be used for research and management purposes.

Backscatter intensity:

- High

- Low

Area of "no data"—Derived from modified 10-m-resolution bathymetry grids.

Figure 2. Map showing areas of multibeam-echosounder and bathymetric-sidescan surveys (pink areas). The resulting map shows the distribution of acoustic backscatter in the Hueneme Canyon area. The map is useful for understanding the acoustic properties of the seafloor and can be used for research and management purposes.

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