The Santa Monica continental shelf was mapped by the U.S. Geological Survey (USGS) in October 1990. Thirty days of continuous mapping using a Hobbs-Bentech-EM710 multibeam echo-sounder system was required to complete the survey. Most of the bathymetry of the Santa Monica shelf area covered prior to the 1990 survey was shallow, digitized, and unlined or so that we could evaluate their potential usefulness in a completion. Unfortunately, the accuracy of these existing bathymetric maps was not as good as the new maps produced for this project. A high-resolution multibeam Bathymetric echo-sounder system was used to produce a set of high-resolution digital data maps for the USGS research project as well as for data and map reference purposes for the local area. The mapping represented the efforts of a cooperative agreement between the USGS Coastal and Marine Geology Program, Santa Barbara, California; the University of California, Santa Barbara; and the University of New Brunswick, Ocean Mapping Group, Fredericton, New Brunswick, Canada.

**System and Processing**

The bathymetric data were obtained using the Hobbs-Bentech-EM710 multibeam echo-sounder system, which was specifically designed as a long-range, high-resolution, and high-data-rate imaging echosounder. The system was used in conjunction with a dual-mode digital signal processor and a high-speed multichannel digital recorder. The data were recorded in real-time and then processed using a computer-based software package. The processed data were then used to generate high-resolution bathymetric maps for the Santa Monica continental shelf area.

**Map A—Backscatter Map**

[Backscatter map of the Santa Monica continental shelf area showing different backscatter intensities and locations.]

**MAPS**

Two types of obstacle maps are included in the map: a backscatter map (Fig. A-1a) depicts the angularly integrated energy returned to the system by the ocean floor, and a shaded-relief bathymetric map (Fig. A-1b) shows the topographic features of the ocean floor.

**Acknowledgments**

No work was commissioned for the preparation of this map, and the map was published by the U.S. Geological Survey in 1999.

(Note: This diagram is not intended for navigation.)

**References**

1. U.S. Geological Survey
2. University of New Brunswick

**SHADABLE RELIEF BATHYMETRIC AND BACKSCATTER MAPS OF SANTA MONICA MARGIN, CALIFORNIA**

By

James V. Gardner1, Peter Dartnell1, Larry Mayer2, and John Hughes Clarke2

1999