Geologic Map of the Monterey 30'x 60' Quadrangle and Adjacent Areas, California

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Introduction

The *Geologic Map of the Monterey 30'x60' Quadrangle and Adjacent Areas, California* was compiled from geologic maps covering the Monterey 1:100,000-scale quadrangle, part of the Palo Alto 1:100,000-scale quadrangle, and Monterey Bay between latitudes 36° 30' and 37° 00' north to approximately 122° 20' 00" west longitude. This project was supported in part by the U.S. Geological Survey STATEMAP award no. 98HQA2049. Most of the map was compiled and digitized from existing maps, although some new mapping was conducted and is presented on this map for the first time. There are three plates in this package: a geologic map on a shaded-relief base, which was generated from a digital elevation model (DEM), a geologic map on a topographic base without a DEM, and an explanation of the map units.

This product is also available in digital form, *Geologic Map of Monterey 30' x 60' Quadrangle and Adjacent Areas, California: A Digital Database* on CD-2002-04. The digital files on the CD-ROM include postscript files of the maps, a Portable Document File (.pdf) of the two maps that can be read with an Adobe reader, and map "layers," which were prepared in ARC/INFO®.

Compilation

This project was initiated in 1988 when D.L. Wagner and C.L. Pridmore compiled an analog geologic map of the quadrangle. H. Gary Greene, of the Moss Landing Marine Laboratories, compiled the offshore geology of the continental slope and Monterey Canyon system. Steve Eittreim of the U.S. Geological Survery (USGS) interpreted the geology of the continental shelf (water depths less than 150 meters) on screen at a scale of 1:6,000 from acoustic imagery of 2.4 meter resolution.

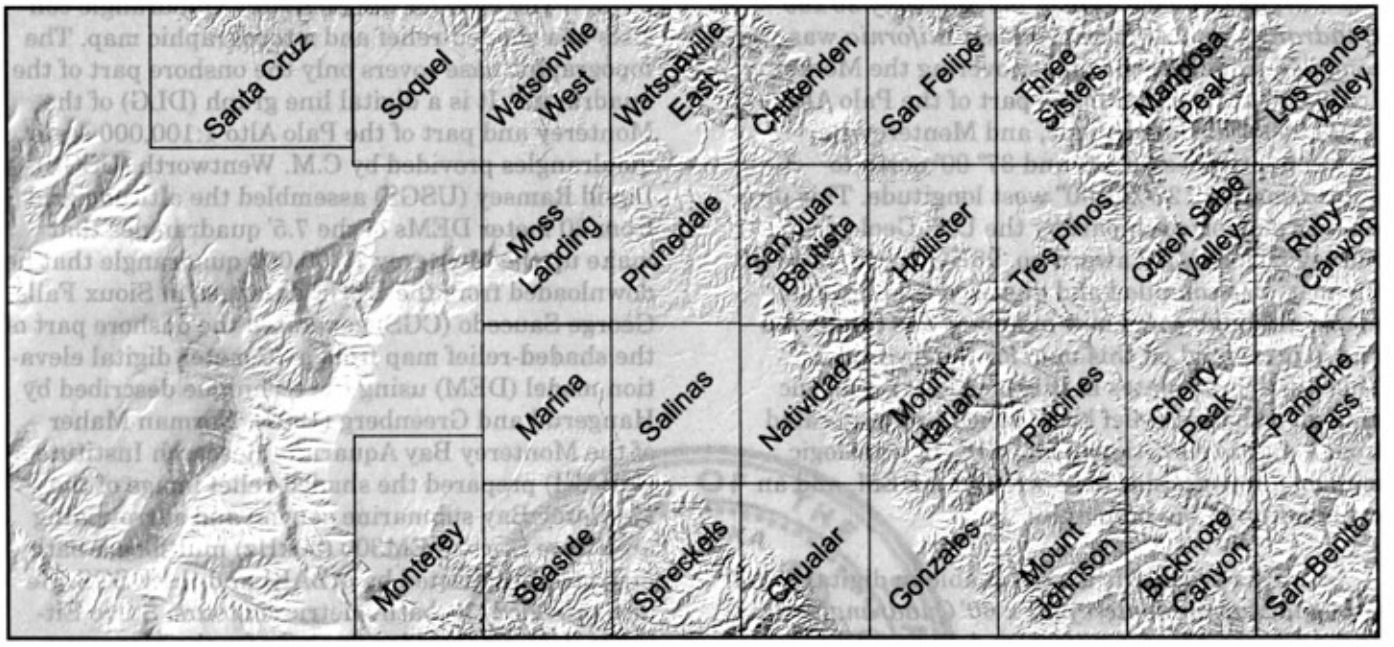
Base material

The base for the Monterey Quadrangle consists of a shaded-relief and a topographic map. The topographic base covers only the onshore part of the quadrangle. It is a digital line graph (DLG) of the Monterey and part of the Palo Alto 1:100,000 scale quadrangles provided by C.M. Wentworth (USGS). David Ramsey (USGS) assembled the altitude grid from 30 meter DEMs of the 7.5' quadrangles that make up the Monterey 1:100,000 quadrangle that he downloaded from the USGS database in Sioux Falls. George Saucedo (CGS) generated the onshore part of the shaded-relief map from a 30-meter digital elevation model (DEM) using the technique described by Haugerud and Greenberg (1997). Norman Maher of the Monterey Bay Aquarium Research Institute (MBARI) prepared the shaded-relief image of the Monterey Bay submarine canyon and surrounding area from Simrad EM300 (30kHz) multibeam bathymetric data collected by MBARI and the USGS. He also provided the bathymetric contours. Steve Eittreim (USGS) provided imagery for the Monterey Bay shelf (water less than 150 meters deep).

Acknowledgements

This compilation was the result of a collaborative effort of the California Geological Survey, the U.S. Geological Survey, the Monterey Bay Aquarium Research Institute and Moss Landing Marine Laboratories. Wagner is grateful to Carl M. Wentworth (USGS) for his guidance and advice concerning digital compilation. Earl E. Brabb (USGS) provided stable base geologic maps for compilation of much of the western part of the onshore map and provided advice on stratigraphic problems. Joseph C. Clark (Indiana University of Pennsylvania) reviewed the explanation of geologic units, which improved it greatly. Clark, Brabb, and Lewis Rosenberg mapped the Spreckels 7.5' Quadrangle for this project.

Sources of geologic data used in the compilation



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