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Shiller, and Richard A. Slater. Cardiff, CA.: U.S. Department of the Interior, Minerals Management Service, Vol. 1, 199 pp.; Vol. 2, unpaginated appendix folio of folded 37 blue-line maps, 5 figs., 4 tables, 1987, no price given (paper).

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Just off the shore of California lies an underwater frontier. While the general

characteristics of the continental shelf are known to us, a watery cloak of mystery veils its deepest secrets. Among the most intriguing is the wealth of cultural resources scattered along its strandlines and among its reefs, canyons, and plains. While many recognize that shipwrecks are a cultural resource, far fewer know that prehistoric artifacts and *in situ* archaeological sites are also included in the cultural resources of the coast.

This study parts the veil just a little and makes a useful and timely contribution. The area of interest includes the Santa Maria Basin (vicinity of Point Estero to Point Conception) and the "Southern California Bight," that sweeping coastal indentation spanning from Point Conception to the vicinity of San Diego.

The research primarily is a compilation and synthesis of data and information gathered in technical geophysical and cultural resources studies conducted for planning offshore development. These technical studies are numerous, unpublished, and only narrowly distributed. Their existence is known only to a concerned few; they are used by even fewer. This study provides a useful service by tapping deeply into this well of information and attempting to both summarize and interpret.

An understanding of the distribution and preservation of offshore cultural resources depends in large part on an even more basic knowledge--the geological and morphological characteristics of the continental shelf. The report gives considerable attention to this foundation. Details of sediment depth and such morphological features as submerged terraces, extinct beachlines, and "drowned" stream channels and estuaries have been combined into a surprisingly complete idea of ancient coastlines and once-exposed landforms now sealed by marine sediments and water.

The text describes methods and findings but the accompanying maps are the obvious heart of the reconstruction of geologic history and coastal geomorphology. A set of six large, overlapping blue-line maps presents information on sediment thickness (Maps 1A-6A, "Isopach Map of Post-Wisconsin Sediment Thickness"). Another such set depicts reconstructed geomorphological characteristics of the shelf, including such features as cliffs, estuaries, and stream channels (Maps 1E-6E, "Prehistoric Archaeological Site Predictive Model Map").

Reconstructed supralittoral geomorphology is the most basic element in the report's simple "predictive model for offshore site occurrence." The other basic element in the model is archaeology, including both generalizations on the antiquity of human use of prehistoric coastal California and information on the distribution, density, and type of inventoried onshore archaeological sites found along the modern coastline of San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego counties. A set of maps provides a very small-scale depiction of the location of archaeological sites included in the background research (Maps 1C-6C, "Prehistoric Archaeological Site Distribution Map").

The geological/geomorphological baseline and archaeological information were "integrated and synthesized." For example, the writers generalize broadly that in the Southern California Bight, "food resource and preparation sites occur predominantly on headlands around lagoons and marshes, and on the shore of bays." They expect that, in certain unusual situations, some of these landforms and, by extension, archaeological sites located thereon may be preserved offshore. While the model consists primarily of a set of such written generalizations, its most useful feature is its presentation in graphic, or map, form. The reconstructed

landforms thought to be most sensitive or predictive are delineated on Maps 1E-6E, cited above. For example, ancient lagoons, estuaries, or embayments are shown offshore the Mugu area, Port Hueneme, Tajiguas, Gaviota, and Cojo Bay on one of the large foldout maps (Map 2E). Such areas are regarded as areas with heightened sensitivity for *in situ* archaeological sites preserved under a protective cover of Holocene sediments.

The report also turns its attention to shipwrecks. In order to generate a predictive model for shipwrecks, the writers worked from distributional data on reported shipwrecks, documentation on historical shipping routes, and information on such navigational hazards as rocky headlands and ports. The model produces some very simple and unsurprising results, principal among them the conclusion that shipwrecks are to be expected where heavy ship traffic coincides with things to bump into. While such conclusions seem prosaic, perhaps little more can be said with certainty since so many ships are lost in what seem to be random, capricious events. Again, the accompanying maps are the model's most useful feature (Maps 1D-6D, "Shipwreck Distribution Map" and Maps 1F-6F, "Shipwreck Site Predictive Model Map").

I would have preferred that more attention be given to detailing the methods, but the methodological sketchiness is not a serious flaw. Indeed, this report represents a significant advance for an esoteric field. The scope of the research is broad and the consulted literature is voluminous. And while the report could be faulted on several minor grounds (e.g., the uneven hand of multiple authors and the homespun appearance of the blue-line maps) and for, in some cases, explicating the obvious, it stands as an important contribution to California archaeology.