

## The Physical Characteristics of Nearshore Rocky Reefs in The Southern California Bight

Daniel Pondella II<sup>1</sup>, Jonathan P. Williams<sup>1</sup>, Jeremy Claisse<sup>1,2</sup>, Rebecca Schaffner<sup>3</sup>, Kerry Ritter<sup>3</sup>, and Ken Schiff<sup>3</sup>

<sup>1</sup>*Vantuna Research Group, Occidental College, Los Angeles, CA*

<sup>2</sup>*Current Address: Biological Sciences Department, California State Polytechnic University, Pomona, Pomona, CA*

<sup>3</sup>*Southern California Coastal Water Research Project, Costa Mesa, CA*

### ABSTRACT

We present a GIS method for mapping and characterizing nearshore reef habitats. Utilizing this technique, we were able to successfully map all nearshore (<30 m depth) rocky reefs in the Southern California Bight and then quickly assess and characterize these data layers with expert opinion. The southern California coastline is 1198 km in length, with the eight Channel Islands and mainland comprising 503 km and 695 km of coastline, respectively. This is approximately the same amount of coastline as the rest of California. Within this region, we identified and characterized 122 natural reefs comprising 49,055 hectares, which is 26.6% of the 184,439 ha of nearshore habitat in the bight, the remainder comprised of soft bottom. Reefs varied appreciably in size ranging from 6 – 2498 ha. We sampled a subset of these reefs using a generalized random tessellation stratified design and quantified their physical characteristics as measured by scuba surveys. The reefs also varied with respect to habitat type and five distinct sub-habitat types varying from sheer oceanic pinnacle reefs to low-lying cobble were observed. The distribution of reef types varied between the mainland and islands. Island reefs were, in general, higher relief and had a greater percentage of rocky substrate. Mainland reefs generally had lower relief and a higher percentage of sand and cobble substrates.

### Full Text

[http://ftp.sccwrp.org/pub/download/DOCUMENTS/JournalArticles/942\\_PhysicalCharacteristicsOfNearshoreRockyReefs.pdf](http://ftp.sccwrp.org/pub/download/DOCUMENTS/JournalArticles/942_PhysicalCharacteristicsOfNearshoreRockyReefs.pdf)