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TROPICAL ROCKY INTERTIDAL POOLS: STOCHASTIC VS. DETERMINISTIC REGULATION OF FAUNAL ASSEMBLAGE

*Kristin M. Wolf**

The individual faunal assemblages of eighty-eight rocky intertidal pools were studied over a two month period, at Curú Wildlife Refuge on the Gulf of Nicoya, Costa Rica, to ascertain whether the assemblages were structured deterministically or stochastically. Statistical tests applied to field survey data all indicated that species assemblages differred significantly from those expected by chance. The results from the defaunation, and subsequent recolonization, of twenty tide pools demonstrated that the assemblage structures were highly resilient. The presence of deterministic forces were analyzed by quantifying coexistence and niche-overlap of potentially competing species. Because feeding niche-overlap was considerably small, competition for space is suggested as the predominant deterministic process. Possible explanations of the nature of the competition were examined.

* Participant in Associated Colleges of the Midwest (ACM) Tropical Field Research Program, Spring semester, 1987 Advisor: William A. Szelistowski.