

THE EFFECT OF SHADING ON CORAL REEF STRUCTURE AND FUNCTION

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Shading of a 20 m² area of San Cristobal Reef off southwestern Puerto Rico for five weeks altered community structure and function by decreasing net primary productivity and respiration and by causing bleaching and death of several hard coral species. The prolonged exclusion of light was a partial simulation of extreme turbidity. Shading significantly reduced the growth rate of the dominant coral *Acropora cervicornis* (Lamarck) although the daily application of sediments to colonies of this species did not affect growth. Ten months after shading ceased, no new corals had settled on the dead corals which were rapidly colonized by algae. Although coral reefs are adapted to transient increases in turbidity, a continuous reduction in light penetration, for example after dredging, would severely alter community function and structure by decreasing photosynthesis, particularly in deeper reef zones where light is already limiting.