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### ***The Role of Bioeconomic Modeling in the Design and Analysis of Ecosystem Based Management Policies***

**ABSTRACT:** A scientific consensus is developing on the need to transform marine and coastal management to a more holistic ecosystem-based approach. The presentation will investigate the economic and ecological gains from expanding the scope of management objectives in two related systems. The first analysis utilizes a multispecies bioeconomic model for a Caribbean coral-reef ecosystem to determine the optimal ecosystem-based fishery management (EBFM) harvesting rates for both predator (Nassau grouper) and prey (Stoplight parrotfish) species. The second analysis investigates the economic and ecological implications of habitats providing multiple ecosystem services, using fish dynamics in a coupled coral reef-mangrove-seagrass environment as the model system.

