PHD DISSERTATION DEFENSE

OF FISH AND FISHERMEN: USING HUMAN BEHAVIOR TO IMPROVE MARINE RESOURCE MANAGEMENT

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MSI Auditorium (MSRB 1302)

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ABSTRACT People around the world depend on the ocean for their livelihoods and cultural identity. Properly done, marine resource management can help communities balance their extractive needs with the importance of maintaining healthy ecosystems. But limited data and understanding often inhibits our ability to effectively manage our interactions with the sea, threatening both food security and ecological integrity. My research uses simulation modeling and quantitative methods to demonstrate how integrating data and theories of human behavior with ecological information can improve our understanding and management of marine ecosystems. For my first project, I ask whether we can use satellite data on the behavior of fishermen to predict the abundance of fish, and find that the answer is "sometimes, but…". My next line of research shows that the region-wide conservation and fishery effects of Marine Protected Areas may be more variable and harder to detect than we thought, and I demonstrate an empirical approach for estimating these regional MPA effects in the Channel Islands National Marine Sanctuary. Lastly, I present a novel approach for using local historic economic information, together with biological data, to improve the ability of communities to estimate the health of their fishery.

BIO I develop data-driven tools and ideas to help manage marine resources. My current projects include using the behavior of fishermen to predict the abundance of fish, understanding the broader conservation and fishery impacts of marine protected areas, and integrating economic information into data-limited stock assessments. Other projects include helping design and teach fisheries management strategies, looking at the factors that help make fisheries management work, and researching the state of global marine resources. I received my BS from the University of Miami and my Master's in Environmental Science and Management from the Bren School at UC Santa Barbara. After that I worked as a research scientist for the Sustainable Fisheries Group for several years before returning to the Bren School for my PhD under Dr. Chris Costello and Dr. Steve Gaines.

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