

## **Integrating an Interdisciplinary Approach to Coral Reef Studies**

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*An Earth systems approach is critical to environmental research interests ...*



I began my academic studies in the Marine Science Department at the University of Hawaii at Hilo, where I received a Bachelors degree in 2002. While still an undergraduate, I attended a conference that featured GIS and remote sensing applications in the marine environment, which piqued my interest in applying geotechniques to look at spatial interactions in coastal areas. This, in turn, prompted me to take classes in the UH Hilo Geography Department, since I was interested in integrating a geospatial

approach to studying coral reef ecosystems. At that time I became aware of the benefits of utilizing an interdisciplinary approach to looking at environmental questions.

This understanding of spatial relationships and interest in applying an interdisciplinary approach to coral reef studies led me to pursue an MA degree at the University of Hawaii at Manoa, Department of Geography. During that time I enrolled in Dr. Gibson's ESSE21 course, *Geography 600: Visualizing the Earth System*. This class helped me to apply an Earth systems approach that was critical to addressing my research interests. For the course project I used GIS to model fish species' distributions on Hawaiian coral reefs. This project integrated a variety of abiotic and biotic datasets in GIS, as well as digital image processing to create benthic habitat maps. The results of this project may allow for the habitat map to serve as a proxy for the fish species distribution in an area and prove to be a valuable tool for resource managers. Modeling fish species distributions can provide fundamental information that is critical to guide marine conservation and management actions, such as marine protected area design and evaluation.

The completion of Dr. Gibson's ESSE21 course project represented an important step in practicing a multidisciplinary approach in my work, and solidified the path I am taking towards my research goals and objectives. I plan on continuing my academic and research interests by pursuing a Ph.D. in Physical Geography, and anticipate applying the systems concepts I have learned to my dissertation research.



ESS at the University of Hawaii

[http://esse21.usra.edu/ESSE21/esse21\\_hawaii.html](http://esse21.usra.edu/ESSE21/esse21_hawaii.html)