



In partial fulfillment of the requirements for the degree of

**Doctor of Philosophy**  
**Kyle Strongin**

will defend her dissertation

**Moving Toward International Marine Conservation:  
An Analysis of the Current Conservation Efforts, Threats, and  
International Agreements  
Governing Conservation in the Gulf of Mexico**

Thursday, April, 1, 2021

12:00pm MST

<https://asu.zoom.us/j/83988627681>

Faculty, students, and the public are invited.

Supervisory Committee:  
Dr. Beth Polidoro, Chair  
Dr. Steven Saul, Member  
Dr. Leah Gerber, Member

**Abstract**

Marine ecosystems are currently being impacted by various threats; however, quantification of the impacts of known threats and the population status of species are often conducted at different scales, depending upon stakeholder needs. Global-scale species assessments can mask the impact of local or regional threats within the context of global conservation priorities even as conservation policies are generally implemented at the local or regional scale. This work aims to identify the regional threats currently impacting species present within the Gulf of Mexico as well as the current policies addressing those threats. Species currently impacted by threats were used to build an ecosystem model to estimate food web dynamics in the Gulf of Mexico. This model is the first of its kind to incorporate data from more than 1500 species occurring in the Gulf including all marine bony shorefishes,

marine reptiles, complete clades of select marine invertebrates, marine birds, marine mammals, and chondrichthyans. Comprehensive analyses of these groups are important for an improved understanding of the functioning of the Gulf of Mexico food web and the impact of identified threats on food web dynamics. The identification of current threats and food web dynamics will help to inform conservation policy moving forward. Properly framed conservation efforts are more likely to be widely accepted and successful when there is an improved understanding on how policies can impact stakeholders both economically and through changing practices. Finally, an investigation of the legal frameworks currently recognized in the Gulf of Mexico was done to build an example tri-national framework between the United States, Mexico, and Cuba focusing on current conservation gaps allowing for specific regional conservation concerns to be addressed.