Gulf of Mexico Coral Atlas, Part 1: Data Rescue

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Abstract

Deepwater coral habitats are internationally recognized for their biodiversity, value as fish habitat, and potential for new medicines and materials. The Gulf of Mexico contains an abundance of surveys by multiple institutions, and with diverse goals. These data are in a variety of formats in several repositories, many of which are not readily available to assessments because they have not been reviewed and digitized in a commonly formatted database. Re-purposing these datasets are referred to as "data rescue". In order to provide a foundation of georeferenced deep-sea coral, and chemosynthetic habitat, a data rescue project being conducted as a collaboration and interagency agreement between BOEM and NOAA National Centers for Coastal Ocean Science (NCCOS). Collating data of GoM deep benthic communities is developing a comprehensive geo-database of deepwater coral (> 50 m deep) and chemosynthetic community presences and absences, based on nearly 500 human occupied vehicle (HOV), and remotely operated vehicle (ROV) surveys in the GoM (Phase I and II). The combined database will make next generation predictive models possible, and the maps resulting from this study will help to avoid potential impacts to these vulnerable habitats. Areal extent is calculated to the nearest order of magnitude based on vehicle specifications, such as camera frame width, and distance traveled. Presence or absence of target taxa are assigned to areal segments in a Bayesian framework. Eleven datasets encompassing 26 years of work in the Gulf have yielded 269,200 square meters of area coverage for deep-sea coral presence and absence. The central Gulf of Mexico planning region has had the most extensive coverage.