Forecast Ecosystem Conditions in Gulf of Mexico OCS Habitats Using Coupled Modeling and Climate Scenarios

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This quarterly report is filed per requirements of BOEM-NRL IAA # M16PG00027 with respect to our research project focused on climate-scale ocean model simulations for the Gulf of Mexico. The focus of this study is to forecast, through year 2050, marine ecosystem conditions in the Gulf of Mexico (GoM) using RCP climate scenarios prescribed by the NCAR CESM Large Ensemble (LE) atmospheric forcing.

1. WORK ACCOMPLISHED

Progress was made with respect to the analysis of the long-term simulations of present-day conditions. However, due to the large amounts of data, it is time consuming to perform multi-scale computations, and very slow visualizing due to the Covid-related VPN-based teleworking. Nevertheless, a story has materialized and a manuscript is being compiled from the results of these two baseline simulations and associated data.

2. PROBLEMS

Due to the pandemic and teleworking environment, there are still significant productivity issues when working with the large amounts of data required in this project. A one-year no-cost-extension (nce) will be needed to properly complete this project.

3. PLANNED ACTIONS FOR NEXT QUARTER

Transform the compilations of the various analyses and write ups into a journal-style manuscript. Also, discuss and get a status report from NCAR/UC on their progress on the atmospheric forcing products needed for the projection simulations.

4. BUDGET

The project amount of $390K has been received in full.
Expenditures to date: ~$283K.