

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

**Quarterly Report (Y1Q2 – Jan 1-Mar 31, 2017)  
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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 using RCP climate scenarios prescribed by the NCAR CESM Large Ensemble (LE) atmospheric forcing.

## **1. WORK ACCOMPLISHED**

The NCAR/CU subcontract was finalized as a Purchase Order (PO) and submitted to the University of Colorado. The PO should be billable by NCAR starting in June 2017. Collaborations with NCAR/CU have been underway identifying the pertinent atmospheric fields to force the Gulf of Mexico ocean model. NCAR data are being transferred to NRL via portable drives. While the transferring is being done, discussions about best approaches for preparing the input forcing continue.

The first project meeting (via teleconference) was held on March 15, 2017. This constituted our project “kick off” meeting where the project was described and relevant discussions took place. Two main topics were brought up: 1) HYCOM use instead of NCOM, and 2) Best approaches to incorporate short-scale variability into the atmospheric forcing. A synopsis (“Meeting Minutes”) document was sent to all participants.

## **2. PROBLEMS**

None besides delays in transferring 20+TB of data, including shipping time, which has slowed progress during the first quarter.

## **3. PLANNED ACTIONS FOR NEXT QUARTER**

Our goal for Y1Q3 is to complete the data transfer and identify the forcing fields that will be used in the model, so that the initial assessment of the data can be performed in the context of the Gulf of Mexico. A 2-day meeting at NCAR is scheduled for May 22-23, 2017 to complete the data tasks and selection of forcing fields.

## **4. BUDGET**

Y1 funds: \$80,000

Previous expenditures: Administrative \$1342.88

Charged this quarter: NRL labor charges \$458.53