

# Semi-Annual Report

## South Atlantic Shelf-edge MPAs and Oculina Experimental Closed Area Summary of Accomplishments to Date (April 1, 2015– September 30, 2015)

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<b>Project ID#:</b>	NA14NMF4410149
<b>Title:</b>	South Atlantic MPAs and Deepwater Coral HAPCs: Characterization of Benthic Habitat and Fauna
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<b>Duration of Project:</b>	3 years

### 2015 *Pisces* South Atlantic MPA Cruise

The South Atlantic MPA cruise was completed in June 2015. Originally planned for 16 days at sea, 4 days were lost at the beginning of the cruise due to repairs required on the ship's A-frame.

The primary objectives of the cruise were to gather additional data on habitat and fish assemblages within and adjacent to six of the South Atlantic Grouper/Tilefish MPAs (Snowy Wreck, Northern South Carolina, Edisto, Charleston Deep Artificial Reef, Georgia, and North Florida) and inside the Oculina Experimental Closed Area (OECA) as part of a long term monitoring program to document changes in these areas before and after implementation of fishing restrictions. Specific objectives included:

- Conduct remote operated vehicle (ROV) transect surveys of habitat and fish assemblages;
- Conduct total water column CTD profiles for each location; and,
- Conduct multibeam mapping with *Pisces's* ME-70 system inside and outside existing MPAs to locate potential ROV survey sites as well as to continue assembly of a comprehensive bathymetric map of the entire outer continental shelf of the southeastern US.

ROV transect locations were selected from multibeam maps produced on prior cruises with a concentration on repeating previous dives for comparison purposes. The average distance covered on each dive was 824m. Each dive consisted of numerous transects which were delineated by similar habitat types. Downward looking still images were taken at regularly timed intervals to provide a randomized dataset of percent cover by habitat type. Both forward looking video and forward and down looking still imagery incorporated paired lasers to allow measurement of targets.

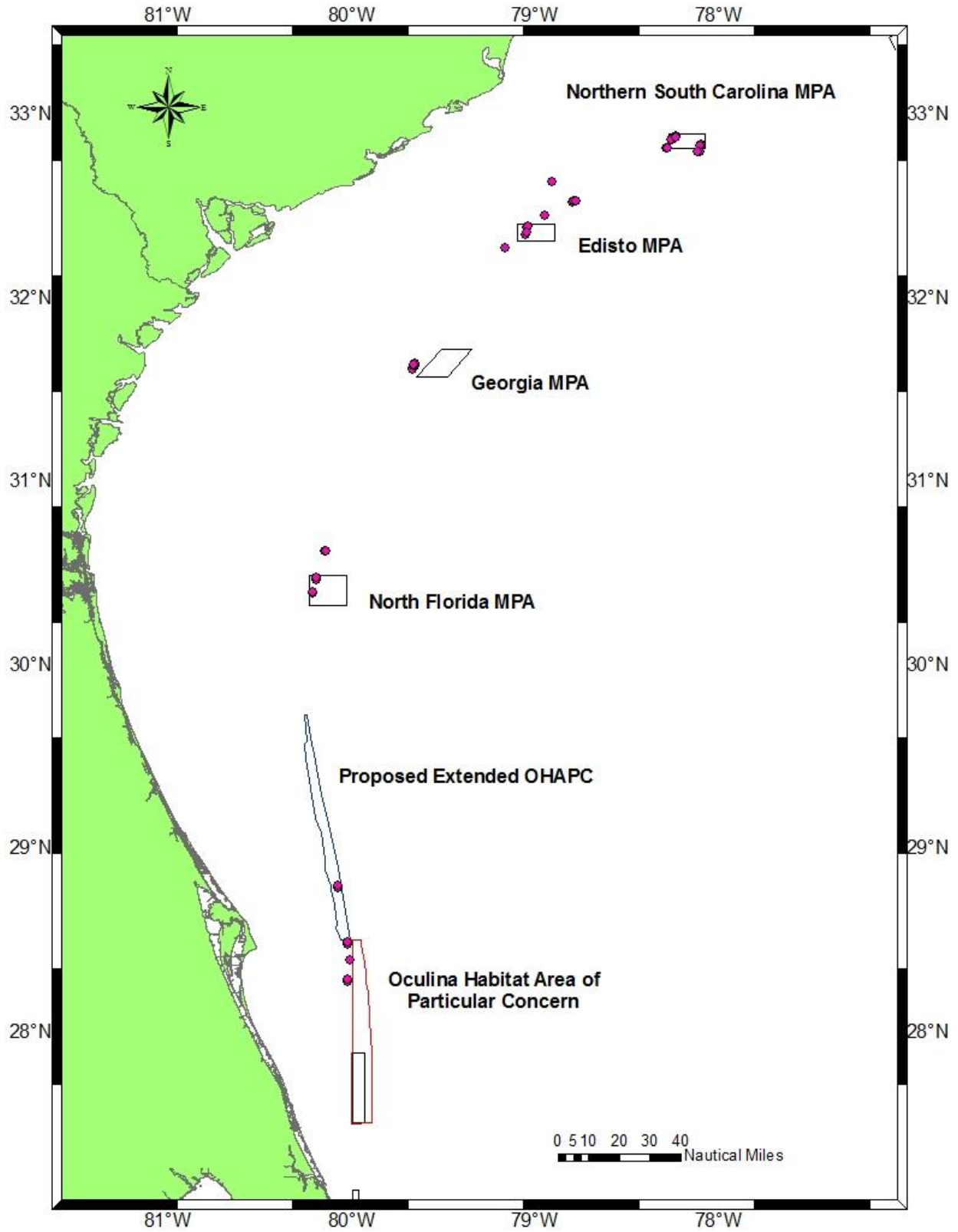
Twenty-two ROV dives were attempted including areas both inside and outside four MPAs as well as inside and outside the Oculina Habitat Area of Particular Concern (OHAPC). Four of these had to be aborted shortly after ROV deployment because either high wind or current preventing the ship from reaching the target location which leaves a total of 18 dives to be analyzed. The breakdown of successful dives was as follows: three dives associated with the OHAPC; two associated with the north Florida MPA; three associated with the Georgia MPA; five associated with the Edisto MPA; and five associated with the northern South Carolina MPA. No dives were conducted in association with the Charleston Deep Artificial Reef MPA, the Snowy Wreck MPA, or the OECA due to the aforementioned wind and/or current.

Four of the seven targeted reef fish species were observed during the mission including snowy grouper (*Hyporthodus niveatus*), speckled hind (*Epinephelus drummondhayi*), yellowedge grouper (*Hyporthodus flavolimbatus*), and blueline tilefish (*Caulolatilus microps*). Lionfish were observed on 15 of the 19 successful dives. The only dives lionfish were not seen were three deep dives conducted in the Northern South Carolina MPA (>150m) and one dive in the OHAPC. The total number of digital still photos produced was 2132, the total number of hours spent on bottom with the ROV was 29.5, and the total distance covered with the ROV was 17.3km.

A series of equipment and software problems with the multibeam mapping equipment presented an unforeseen challenge. The ship's survey department and the science party made hardware repairs and numerous software reconfigurations during the cruise, including the at-sea delivery of a critical circuit board midway through the mission. At the end of the mission, the system was functioning sufficiently to attempt mapping and a section of the OECA was surveyed one night, however the resulting product was not usable and therefore resulted in no mapping during this cruise.

#### Analysis of the 2015 Cruise Data

To date, analysis is significantly ahead of schedule; all ROV dives have been analyzed for characterizing benthic habitat and biota using CPCe and 13 of 19 ROV dives have been analyzed for fish data. Work is on track to complete all analyses by the end of the calendar year and subsequently submit a final cruise report to the SAFMC.



2015 ROV Dive Sites