



Atlantic Canyons Undersea Mapping Expeditions National Oceanic and Atmospheric Administration 2012 FRAMEWORK



Three NOAA ships are directly involved with ACUMEN. In addition to cruises on Hassler, Bigelow, and Okeanos Explorer, a joint NOAA-BOEM expedition on the NOAA Ship Nancy Foster will conduct complementary work on deepwater canyons off Delaware, Maryland, and Virginia.

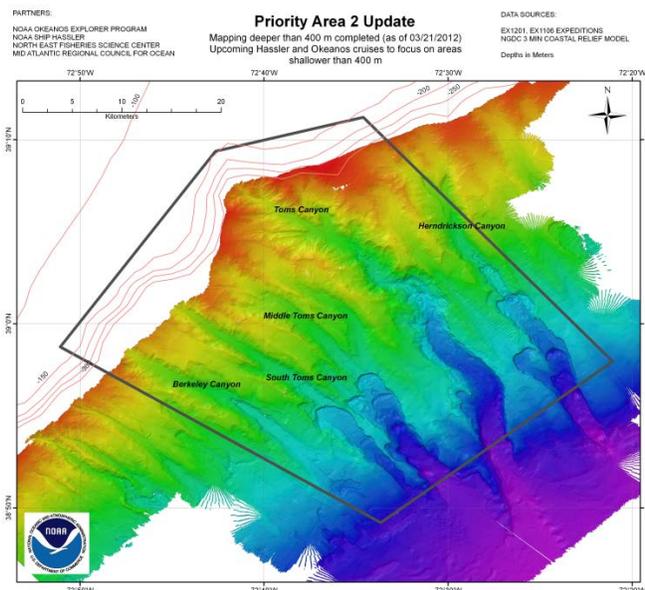
OVERVIEW – Between February and August 2012, a team of NOAA and external partners will conduct a mapping ‘blitz’ focused on deepwater canyons off the northeastern seaboard. In preparation for this series of Atlantic Canyons Undersea Mapping Expeditions (ACUMEN), a team of NOAA and non-NOAA partners identified priority frontier areas along the continental shelf and slope. In total, five expeditions will gather baseline information to support science and management needs. The expeditions highlight the complementary capabilities of three NOAA ships: *Okeanos Explorer*, *Ferdinand R. Hassler*, and *Henry B. Bigelow*.

ACUMEN supports a key principle of the NOAA Habitat Blueprint: “integrate and improve the delivery of habitat science across disciplines to facilitate conservation actions.”

WHY CANYONS? - The shelf break and slope off the northeastern US support a diversity of habitats including more than 70 canyons ranging from depths of ~100m to ~3500m. Many scientists and managers believe the canyons provide a refuge for a variety of fauna including species of corals, fish and other animals. While some canyons have been studied previously, most are poorly known and are of high interest to federal and state agencies with research and management responsibilities.

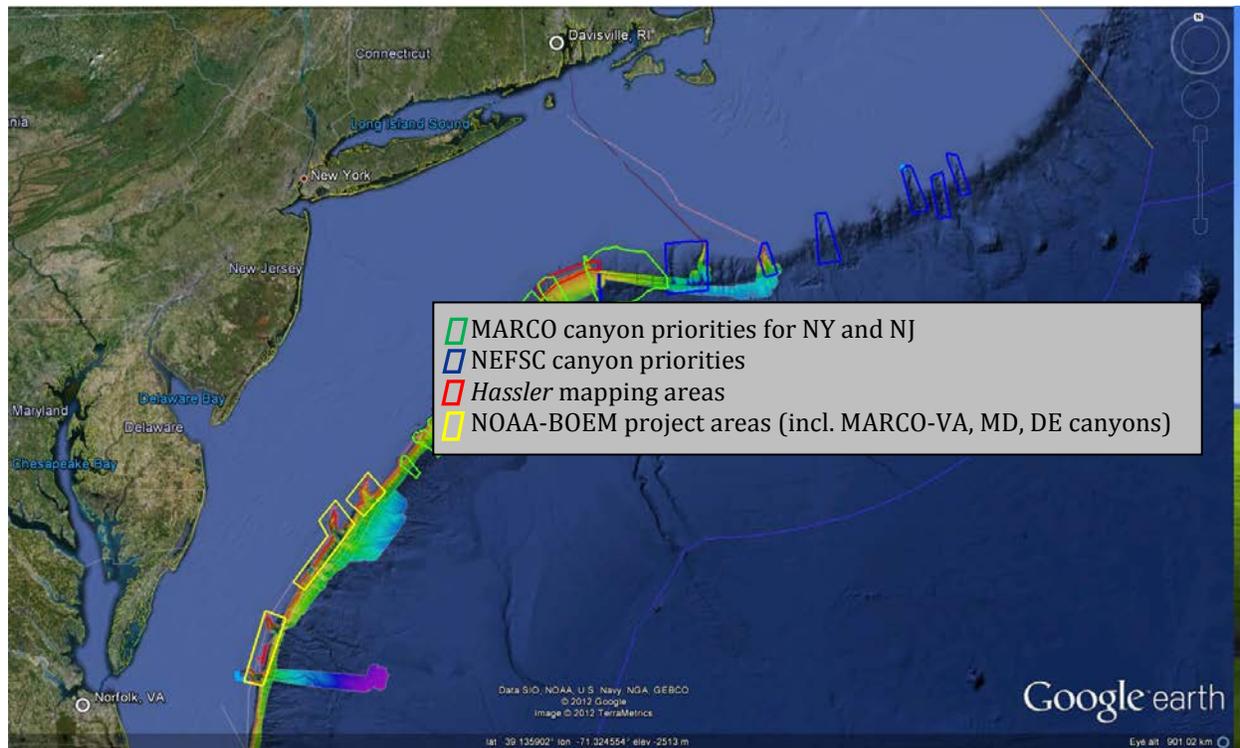
GOALS – ACUMEN demonstrates the value of exploration to address multiple needs. It highlights NOAA’s ability to proactively bring diverse partners together maximize NOAA’s fleet assets, and advance strategic goals for habitat in the region. The project showcases successful coordination of various NOAA programs and how rapid turnaround and sharing of resulting products can increase overall effectiveness and efficiency. Specific project goals include:

- Prioritize deepwater canyon targets with state and regional constituents;
- Initiate field efforts to support the NOAA Habitat Blueprint northeast regional initiative by ground-truthing mapping data and locating deep-sea coral and sponge communities;
- Supports NOAA Integrated Ocean and Coastal Mapping efforts and fulfills nautical charting priorities;



Scientists and managers identified this five canyon area as the 2nd highest geographic priority. The map displays bathymetry collected during the first ACUMEN cruise. Hassler will complete the area in June with high resolution coverage of the canyon heads.

- Support Mid-Atlantic Regional Council on the Ocean canyon protection goal;
- Share data and products across platforms to guide and refine expedition plans in near real-time;
- Capitalize on the complementary capabilities of NOAA assets to produce an integrated, coherent dataset;
- Leverage the Sea Grant network to identify key constituents and education opportunities; and
- Provide a foundation of publicly accessible data and information products to spur further exploration, research, and management activities.



Google Earth map showing general priorities and planned coverage areas for 2012 ACUMEN operations, overlaid on bathymetry acquired by NOAA Ships Nancy Foster and Okeanos Explorer. Planned areas for high resolution mapping by Hassler are overlaid in red. NOAA Ship Bigelow will use a towed camera system to ground-truth areas mapped by the other ships. A complementary joint NOAA-BOEM project on the Nancy Foster is investigating canyons to the south of ACUMEN. MARCO priorities are being addressed during both the ACUMEN and NOAA-BOEM projects. (Actual mapping and sensor coverage achieved may differ from plan due to weather conditions, technical issues, and real-time data analysis and reprioritization.)

NOAA PARTNERS – OAR – Office of Ocean Exploration and Research; NOS – Office of Coast Survey; NMFS – Northeast Fisheries Science Center and Office of Habitat Conservation; OMAO – NOAA Ships *Okeanos Explorer*, *Ferdinand R. Hassler*, *Henry B. Bigelow*; NESDIS-National Coastal Data Development Center

EXTERNAL PARTNERS – Virginia Sea Grant; Mid-Atlantic Regional Council on the Ocean: New York Department of State and Virginia Coastal Zone Management Program; Woods Hole Oceanographic Institution; Cooperative Institute for the North Atlantic Region. Key partners in the NOAA-BOEM project include USGS, Continental Shelf Associates, University of North Carolina-Wilmington, Oregon Institute of Marine Biology.

FOR MORE INFORMATION - NOAA's Office of Ocean Exploration and Research (OER) initiated partnership development and continues coordinating across NOAA's line offices to ensure multiple program objectives are met. Primary project contact is Jeremy Potter (jeremy.potter@noaa.gov).