During ROV surveys off northeastern Florida, we discovered live colonies of the scleractinian coral Lophelia pertusa and other typical deep-water organisms in unusually shallow depths of 180-250 m. Bottom temperatures (7-10°C) were colder than expected at these depths, and were similar to those normally encountered at 400-600 m. Small coral bioherms and abundant dead coral rubble indicate long-term presence of L. pertusa in this area. Other typically deep-water fauna not only occurred here, but were much more abundant and larger than observed elsewhere. Common soft-substrate macro-invertebrates included octocorals, stony corals, antipatharians, Eunicea picta, Echinus esculentus, dactylopterus, Dysommina rugosa, Laemonema helicolenus, and Anthias spp. and Chaetodon forsteri. The most common fishes recorded on hard substrate were Helicolenus dactylopterus, Dysommina rugosa, Laemonema helicolenus, and Anthias spp. The well developed cold-water seafloor community and the abundance of associated fauna suggest this site is a long-term feature, rather than short-term opportunistic colonization. The Gulf Stream movement pulls away from the coast in this region, creating a upwelling of deep water and consequently a long-term primary productivity envelope. These oceanographic features explain the presence of a deep slope community at this site. Considering the unusual depth, long-term colonization by the corals, and the apparent productivity of benthic fauna, this site warrants further research and has been proposed as a Coral Habitat Area of Particular Concern (C-HAPC).

**METHODS**

- **ABSTRACT**

**CRUISES**

- April 2010: MV White Holly and ROV Mohican. Multibeam mapping and ROV video
- November 2010: MV Lost Coast Explorer. Multibeam mapping
- November 2010: NOAA ship Ronald H. Brown and ROV Jason II. Multibeam mapping, ROV video, CTD, sample collections

**CTD:** Seabird SBE 911+ measured conductivity (µS/cm), temperature (°C), salinity, density (ρ, kg m-3), dissolved oxygen (ml), and depth once every second. CTD casts to about 10 m off bottom; only bottom CTD data from Jason ROV were used.

**BOTTOM OBSERVATIONS:** ROVs conducted video transects across all habitats, with still photography and sample collections. Erroneous tracking data were removed from dive tracks. Locations along the track were assigned habitat codes (below), and all location points were plotted (ArcGIS 9.31, ESRI). Dive tracks were smoothed (ADELIE 1.8, IFREMER) and buffered by 10 m each side. Dive videos were reviewed multiple times to classify habitats and to document benthic macrofauna.

**HABITAT CODES**

1) Sand and/or silt substrata, little or no hard structure apparent
2) Soft substrata < 50% coral rubble and/or small rocks, profile < 1 m, variable attached fauna
3) Rubble bottom > 50% covered with coral rubble and/or small rocks, profile < 1 m, variable attached fauna
4) Low profile rock, > 50% bottom cover with scattered rocks and boulders, > 1 m profile
5) Rocky ledges and/or boulders, profile > 1 m, varying amounts of attached fauna
6) Hard corals, 90-100% bottom cover, > 50% dead, profile > 1 m, variable attached fauna
7) Hard corals, 90-100% bottom cover, > 50% live coral, usually high % of attached fauna

**ENVIRONMENTAL DATA**

- **Bottom temperatures at this shallow site (7-10°C) are colder than other known locations at similar depths in the SEUS. Such low temperatures are usually seen at depths > 300 m in the region.**
- Rocky habitats were common and colonized by various sessile cold-water fauna, including substantial colonies of L. pertusa
- Lophelia pertusa appeared to form bioherms (coral mounds) in part of the study area at ~200 m depth.
- All fishes and invertebrates observed were typical of deeper waters, but their most unusual attributes were very high abundance and large sizes than seen on deeper reefs.
- The Gulf Stream swings offshore causes upwelling as evidenced by low bottom temperatures moving onto the shelf edge.

**CONCLUSIONS**

- This ecosystem requires further investigation and is being considered for protection under a proposed boundary extension.
- The Gulf Stream is over or near the deep coral sites in the region.
- Low dissolved oxygen (DO) and salinity around 35 are probably largely responsible for this unusually shallow and productive deep-water coral community.

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**AN UNUSUALLY SHALLOW AND PRODUCTIVE DEEP-WATER CORAL COMMUNITY DISCOVERED OFF THE SOUTHEASTERN UNITED STATES**

Steve W. Ross (Univ. of NC at Wilmington), Sandra D. Brooke (Marine Conservation Institute), Andrea M. Quattrini (Temple Univ.)

**INTRODUCTION**

- The shelf to upper slope off the southeastern US (SEUS) is a transition zone between a temperate/subtropical fauna and typical deep-sea slope fauna.
- Depth boundaries of this transition vary and are defined by oceanographic conditions resulting from Gulf Stream movement.
- Deep-sea corals are abundant off the SEUS, usually at 370-600 m and are likely controlled (in part) by their upper temperature limits.
- Lophelia pertusa is the dominant structure forming species.
- Small colonies of L. pertusa have been seen at ~300 m off the SEUS, but no substantial amounts had been reported in ~700 m depth.
- Recent multibeam mapping and ROV surveys off northeastern Florida reveal L. pertusa bioherms and extensive hardgrounds in unusually shallow depths (~200 m) supporting well-developed deep-sea communities.

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