



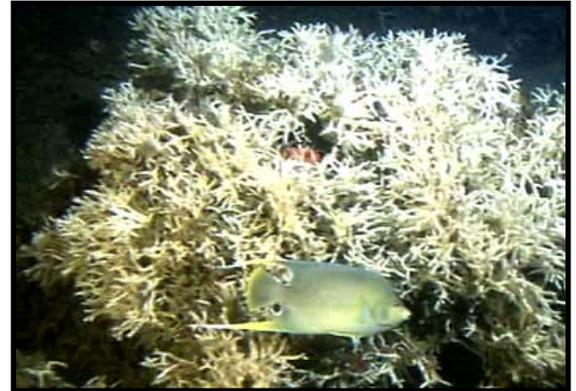
NOAA's Undersea Research Center for the South East and Gulf of Mexico

The University of North Carolina Wilmington

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NOAA's Undersea Research Center for the Southeast and Gulf of Mexico (SEGM) conducts undersea research in a region that includes: 4,400 km of coastline; 1.2 million square km of U.S. Exclusive Economic Zone; 60 percent of the nation's wetlands and estuarine drainage area; the nation's most valuable developed oil and gas resources; most valuable recreational fishing and marine-related tourism industries; second most valuable commercial fishing industry; and the only emergent, living coral reef ecosystems in the continental U.S.



Oculina (ivory tree) coral head and angel fish

SEGM's Florida Keys Research Program is a global leader in coral research, supporting over 5000 reef dives per year in the Florida Keys National Marine Sanctuary (FKNMS). The *Aquarius* undersea lab, situated 3 miles off Key Largo, is the world's only offshore "inner space" station, housing 6 aquanauts for weeks per mission, and sending real-time video and data to the Internet for research, education, and outreach projects.



Lionfish on southeast Atlantic reef

Highlights

- Provided research to support continuation of ban on bottom fishing and trawling in a portion of the Oculina Banks, to ensure protection of the world's only known deepwater stand of ivory tree coral
- Documented invasion of South Pacific lionfish, a venomous predatory fish that has invaded southeast waters, taking over reefs from Florida to North Carolina and Bermuda
- Discovered oil and gas cold seeps and gas hydrates at the Gulf of Mexico seafloor; methane hydrates are the world's largest potential fossil fuel reservoir and alleged factor in abrupt climate change

- Recovered and preserved artifacts from the disintegrating wreck of the *USS Monitor*, which lies at 263 ft depth off Cape Hatteras in the nation's first national marine sanctuary
- Determined causes and impacts of low-oxygen events on coastal ecosystem in "dead zone" off the Mississippi River delta
- Mapped habitat and assessed fish populations in existing and proposed deep-water shelf edge reefs and deep coral banks



Aquarius undersea laboratory



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