

Atlantic research expedition uncovers vast methane-based ecosystem

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A marine research expedition sponsored by the U.S. Bureau of Ocean Energy Management (BOEM) and the National Oceanic and Atmospheric Administration (NOAA) has led to the discovery of perhaps the world's largest methane cold seep by two university-based research teams and their partners, UNCW announced today.

The seep lies deep in the western [North Atlantic Ocean](#), far from the life-sustaining energy of the sun. Mussels blanketing the the seep rely on bacteria that use the methane to make energy. The process, known as chemosynthesis, forms the basis for life in the harsh environment and could help scientists better understand how organisms can survive under these types of extreme conditions.

"UNCW and FSU have done two previous cruises together and this is perhaps our biggest discovery," said UNCW researcher Dr. Steve Ross. "Studies of this kind and of these communities help scientists understand how life thrives in [harsh environments](#), and perhaps even on other planets."

The new seep discovery is only the third documented seep site on the U.S. Atlantic Coast, and by far the most extensive; the two seep areas at this site are estimated to be at least a kilometer long and in places hundreds of meters across. [Sea cucumbers](#) were also seen tucked into the tight mounds of mussels and shrimp swam above them. Many species of fishes, including some with unusual behaviors, were also common around the unique ecosystem..

Stationed aboard NOAA's Ronald H. Brown research vessel, the research teams used the diverse capabilities of the Woods Hole Oceanographic Institution's Remotely Operated Vehicle (ROV), Jason II, to document and study the newly discovered methane seep.. The teams have been able to capture high definition video, sample the sediment at the site, collect live mussels for genetic and reproductive studies, collect large dead shells and rocks for aging analysis, take water samples to examine [water chemistry](#), and sample associated animals to examine food webs.

The seep discovery could potentially play an important role in advancing scientific understanding of hydrocarbon resources and gas hydrates (important possible future energy resources) along the US continental slope .

More information: [Deepwater Canyons website](#)
[Bureau of Ocean Energy Management's news site](#).

Provided by University of North Carolina Wilmington

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