



National Oceanic and Atmospheric Administration (NOAA)
Office of Ocean Exploration and Research (OER)

Online Professional Development

for Educators of All Grade Levels

Lessons from the Deep: Exploring the Gulf of Mexico's Deep-Sea Ecosystems

October 11-29, 2010

in partnership with
the College of Exploration



Close-up view of one of the undescribed species of *Lamellibrachia* that scientists discovered. Image courtesy of Expedition to the Deep Slope 2007 and Aquapix.

Two types of ecosystems

are typically associated with deep-water hardgrounds in the Gulf of Mexico: chemosynthetic communities and deep-sea coral communities. Hydrocarbon seeps may indicate the presence of undiscovered petroleum deposits, so the presence of these ecosystems may indicate potential sites for exploratory drilling and possible development of offshore oil wells. At the same time, these are unique ecosystems whose importance is largely unknown.



Lophelia pertusa on the seafloor. Note extended polyp on the right. Image courtesy of Ian MacDonald, *Lophelia* II 2009: Deepwater Coral Expedition: Reefs, Rigs and Wrecks.

This online professional development offering presents *Lessons from the Deep: Exploring the Gulf of Mexico's Deep-Sea Ecosystems Education Materials Collection*, a selection of lessons about deep-sea ecosystems in the Gulf of Mexico based on ten ocean exploration expeditions sponsored by the National Oceanic and Atmospheric Administration's (NOAA's) Office of Exploration and Research (OER) between 2002 and 2009. Some of these sites are within a few miles of the Deepwater Horizon well. Additional background information will be introduced about the unique geology of the region and behavior of oil in seawater. The purpose of this professional development offering is to:

- Provide a foundation for student inquiries into the unique deep-sea ecosystems of the Gulf of Mexico, with particular focus on deep-sea corals and cold seep ecosystems and the importance of these ecosystems;
- Provide an understanding of the technologies used to investigate these ecosystems; and
- Build capabilities for comparing data from past OER expeditions with new information from ongoing research in the Gulf.

The offering features Keynote Addresses from renowned ocean explorers who have made significant contributions to scientific knowledge of deep-sea ecosystems in the Gulf of Mexico. Participants are formal and informal educators, as well as interested members of the public.

Workshop components include online spaces for discussions to further professional development, a collection of resources, discussion rooms for Keynoters to interact with participants, and discussion rooms for teachers of different grade levels.

This offering is free for all participants and will be available 24 hours a day, 7 days a week. Educators will have the option to receive one graduate extension credit (\$100 for the credit) or obtain a certificate of completion.

To register, go to:

<http://www.coexploration.org/oe/>