

BOEMRE ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

Region: Headquarters

Planning Area(s): Mid- Atlantic

Title: Investigation of Virginia Seeps

Total Cost: \$84,700

Period of Performance: FY 2009-2010

Conducting Organization: Navel Research Lab

BOEMRE Contact: Dr. Mary Boatman

Description:

Background: Research scientists from Lamont Doherty Earth Observatory, Woods Hole Oceanographic Institute, UT Austin's Institute for Geophysics and the Naval Research Laboratory have been studying a series of crack-like linear features on the outer continental shelf off the mid-Atlantic coast. Preliminary data suggest that these 'cracks' are actually regions of concentrated methane seepage that is occurring via a network of geologic faults buried several kilometers beneath the seafloor. These seeps are forming linear shaped depressions that have formed as a result of excavation by the gas escape and could be related to past/present/future seafloor failure and submarine landslides. Extensive investigation and mapping of the region to determine the extent and age of the activity has been undertaken since these features were first discovered in 1999 (Hill et al, 2004).

Experience in the Gulf of Mexico suggests that areas of seepage may support unique biological communities, which BOEMRE has a responsibility to detect. Detailed investigations of these seep sites are therefore warranted to determine whether further mitigation measures are necessary. The proposed study will investigate areas with significant seepage. The study sites are within the proposed lease sale 220 area.

Objectives: The purpose of this study is to identify areas along the Virginia OCS that support unique biological communities.

Methods: Investigators will collect high-resolution sidescan sonar, bathymetry, and video imagery data over seep sites that remain unmapped. Video imagery of the 'ridge' features, that form the western edge of the asymmetric linear holes that gas-expulsion is hypothesized to have created, are the main focus of the surveys.

Importance to BOEMRE: Methane seeps exist along the shelf/slope break off the coast of Virginia. Should these seeps support unique biological communities; BOEMRE will be required to use mitigation measures to protect them. This study will provide evidence of their existence or absence.

Current Status:

Final Report Due:

Publications:

Affiliated WWW Sites:

Revised Date: April 21, 2009

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