BOEM | FACT SHEET

Bureau of Ocean Energy Management

Deep-Sea Corals Research

The Bureau of Ocean Energy Management Environmental Studies Program (BOEM/ESP), established in 1973, develops, funds, and manages rigorous scientific research to inform policy decisions regarding resource development on the U.S. Outer Continental Shelf (OCS), whether it concerns offshore oil and gas, offshore renewable energy, or marine minerals for coastal restoration projects. BOEM's scientific research leverages strong partnerships with a variety of organizations, including federal agencies such as the National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey (USGS) and the Department of Energy; universities and other research institutions, the private sector, and tribal communities. The ESP regularly conducts research with partners under the umbrella of the National Oceanographic Partnership Program, including several award-winning studies described below.

BOEM began to study deepwater coral and chemosynthetic communities in the 1980s, as energy companies developed the technology to explore and extract oil and gas in waters as deep as 1,000 meters (about 3,200 feet). In recent years, exploration is taking place in water depths up to 3,092 meters (10,141 feet). The discoveries and our collective knowledge have blossomed, especially where deepwater coral is concerned. As prospects for offshore renewable energy grow, coral research is relevant and necessary for informed decisions governing that sector as well.

More than 375 reports, related materials, and summaries of completed and ongoing coral research are available on BOEM's Environmental Studies Program Information System (ESPIS). More than 20 relate to deep sea corals. Recent studies cover chemosynthetic communities on the lower continental slope, discovery of new depths for *Lophelia* coral in the Gulf of Mexico, and discovery of *Lophelia* and bubblegum coral in the Mid-Atlantic Norfolk and Baltimore canyons. In the Pacific, ongoing research is synthesizing readily available information related to state and federal waters surrounding Hawaii, including coral and other invertebrates. The following list identifies a sampling of some of the research undertaken since 2007, when NOAA published the *State of Deep Coral Ecosystems of the United States*, to which BOEM contributed. The new 2015 report was published in September 2016.

SELECT BOEM-FUNDED CORAL STUDIES ON THE U.S. OCS SINCE 2008

Exploration and Research of Mid-Atlantic Deepwater Hard Bottom Habitats and Shipwrecks with Emphasis on Canyons and Coral Communities

https://opendata.boem.gov/BOEM-ESP-Ongoing-Study-Profiles-2015-FYQ2/BOEM-ESP-AT-10-03.pdf

The purpose of this very successful study was to focus on exploration and study of selected habitats to refine understanding of the distribution and complexity of hard bottom communities in the mid-Atlantic slope area. The project won the 2015 NOPP Excellence in Partnering Award and the DOI Partners in Conservation Award. The final report is expected in 2017. Click here for the video.

Exploration and Research of Northern Gulf of Mexico Deepwater Natural and Artificial Hard-Bottom Habitats with Emphasis on Coral Communities: Reefs, Rigs, and Wrecks - Lophelia II

http://marinecadastre.gov/espis/#/search/study/27140

The Lophelia II Project, initiated by BOEM, collected measurements and information during five cruises to characterize the physical and biological environment of numerous deepwater study sites. Analysis of the results includes community structure using photomosaics, trophic studies, laboratory experiments with *Lophelia pertusa*, archaeology, educational outreach and analyses of a *Lophelia pertusa* mound piston core study and commercial fisheries impact on deepwater corals. The project was awarded the 2012 NOPP Excellence in Partnering Award. Click here for the video.

Investigations of Chemosynthetic Communities on the Lower Continental Slope of the Gulf of Mexico

http://marinecadastre.gov/espis/#/search/study/239

The primary purpose of this research was to discover and characterize the sea floor communities that live in association with hydrocarbon seepage and on hard substrates in the deep Gulf of Mexico in water depths below 1,000 m (3,280 ft). The sites studied are in areas energy companies expected to drill for oil and gas. This project was awarded the DOI Cooperative Conservation award in 2007.

Deepwater Coral and Chemosynthetic Community Atlas and Modeling Program: Gulf of Mexico

http://www.boem.gov/GM-15-06/

Ongoing study: The purpose of this agreement between BOEM and NOAA is to obtain a deepwater coral and chemosynthetic atlas and, based on this atlas, to obtain improved models of actual and potential distribution of deepwater coral and chemosynthetic biota in the Gulf of Mexico Outer Continental Shelf (OCS) region.

A Marine Biogeographic Assessment of the Main Hawaiian Islands

https://opendata.boem.gov/BOEM-ESP-Ongoing-Study-Profiles-2015-FYQ2/BOEM-ESP-PC-13-06.pdf

Ongoing study: There is increasing interest in the development of renewable energy projects offshore the main Hawaiian Islands (MHI). BOEM needs an assessment of available baseline information on a variety of biological and physical resources in this area to determine knowledge gaps and study needs, and to conduct environmental analyses and review project documents that inform decisions. A marine biogeographic assessment of the MHI will expand BOEM's assessment capabilities, define study needs, and contribute greatly toward ecosystem-based management of the marine resources of the MHI.

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