

BOEM ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

BOEM OCS Region: [Gulf of Mexico](#)

Title: Socio-Economic Responses to Coastal Land Loss and Hurricanes: Measuring Resilience among Outer Continental Shelf Related Coastal Communities in Louisiana (GM-92-42-137)

Planning Area: Central and Western

Total Cost: \$209,472

Period of Performance: FY 2007-2011

Conducting Organization: [Coastal Marine Institute](#), Louisiana State University

BOEM Contact: [Sindey F. Chaky](#)

Description:

Background: Recent studies by MMS and others have called for more refined examinations of the social and economic impacts of OCS leasing program on coastal areas involved in OCS-related support, and for more innovative approaches for considering community sustainability and resilience. Questions of sustainability and resilience are being raised more loudly and clearly since the large-scale land loss, and destruction of property, natural assets, and human life that resulted from Hurricanes Katrina and Rita in 2005.

Objectives: Study objectives are to:

1. develop and compile baseline measures of social-ecological resilience of Louisiana communities facing land loss and hurricane threat; and
2. provide BOEM an understanding of resilience levels among communities heavily involved in OCS activities and those that are not and, thereby, strengthen agency social impact analyses.

Methods: The research will take the following analytical steps:

- develop quantitative indicators of community resilience to coastal land loss and to hurricanes by incorporating both socioeconomic and natural/environmental variables;
- compile these indicators into a “resilience index”;
- apply the index to parishes and communities to evaluate changes in resilience through time;
- create GIS-supported maps depicting vulnerability and resilience based on these indicators; and
- make statistical comparisons among communities of coastal more and less

involved with OCS activities.

Products: A comprehensive report, GIS maps for parishes and communities, and databases. The final report will contain three sections: The county level analysis for all parishes in Louisiana and for all coastal counties in the five-state Gulf of Mexico region; zip-code level analysis for coastal Louisiana and a Census-tract analysis of returning population to Orleans Parish, LA following Hurricane Katrina.

Importance to BOEM: This research will advance the agency's cumulative analysis of the OCS leasing program and help the agency address several critical issues raised by the State of Louisiana concerning the last 5-year and multi-sale EISs. This study asks the questions of how resilience OCS communities are to the threats of coastal land loss and hurricanes, how this resilience might be measured, and whether OCS-involved communities are more resilient to these natural threats than are non-involved coastal communities. Because of the large amount of OCS activity within the coastal areas of the state, these are particularly salient management issues. This resilience index will go beyond the traditional approach of social impact assessment to better capture the cumulative effects of OCS activities.

Current Status: Researchers have completed all index construction at the Parish and zip-code levels. The analysis includes all Louisiana Parishes and the zip-code areas within the coastal Parishes. Maps have been constructed that display the resilience index scores for these time periods, at the Parish and zip-code levels. Researchers have also completed a series of correlation analyses to explore associations between local economic linkages to the oil and gas industry and the resilience scores at the various points in time – 1980, 1990 and 2000. The draft final report was submitted in October, 2011 and is currently being re-formatted for BOEM review.

Several graduate students in the M.S. program within the Department of Environmental Sciences were supported at various times as graduate research assistants on this project and three conference presentations have resulted from this research.

Final Report Due: August 2012

Publications: None

Affiliated WWW Sites: None

Revised date: January 2012

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