

Environmental Studies Program: Studies Development Plan | FY 2023–2024

Title	Updating BOEM’s Environmental Sensitivity Methods and Models (NT-23-03)
Administered by	Office of Environmental Programs
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Conducting Organization(s)	TBD
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Final Report Due	TBD
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PICOC Summary	-
<i><u>Problem</u></i>	Niedoroda et al. (2014) developed a method for evaluating the relative environmental sensitivity and marine productivity of the Outer Continental Shelf (OCS) that has not proved as useful to decisionmakers due to how the vague "relative" term was interpreted as a comparison of areas against each other, which is likely what was intended, but hasn’t proven useful as a means to assist decisionmakers.
<i><u>Intervention</u></i>	The products proposed are largely quantitative and rigorous methods for evaluating the relative environmental sensitivity of broad OCS regions to future BOEM-regulated activities.
<i><u>Comparison</u></i>	This tool will allow us to compare the relative environmental sensitivity of BOEM’s 26 OCS Planning Areas and aggregated ecoregions.
<i><u>Outcome</u></i>	The outcome of this product will inform BOEM’s National Program with updated models of environmental sensitivity to BOEM’s activities and will hopefully provide a tool that is useful across all BOEM activities.
<i><u>Context</u></i>	All BOEM regions

BOEM Information Need(s): Models and methods developed by OCS BOEM Study 2014-16, *A Method for the Evaluation of the Relative Environmental Sensitivity and Marine Productivity of the Outer Continental Shelf* (Niedoroda et al. 2014), while excellent products, have ultimately proved not as useful as we had hoped, as comparisons across such large areas was confusing for decisionmakers and the public.

Our intent is to move to a more spatially explicit, data-driven analysis that shows where the sensitive areas are within the program areas to better inform decisions about what areas to include, and where to consider mitigations. One primary goal would be to move away from an analysis that shows "this program area is more sensitive than that one," to "these areas within this program are more sensitive than other areas within the program area" and "there are more sensitive areas in this program area than other program areas." This would allow for a more easily understandable and useful analysis for decision-making across BOEM. Updating and integration the required productivity analysis is also required and incorporating some measure of climate vulnerability would be ideal.

Background: Relative environmental sensitivity incorporates both the vulnerability and resilience of an OCS region’s ecological components (i.e., habitats and biota) to the potential impacts of OCS oil and gas and other activities in the context of existing conditions (e.g., climate change forecast, regulatory status, productivity). Section 18(2)(G) of the Outer Continental Shelf Lands Act of 1953, as amended (OCSLA; 43 U.S.C. § 1331) states that decisions regarding exploration and development will be in part based on consideration of “the relative environmental sensitivity and marine productivity of different areas of the Outer Continental Shelf” (Niedoroda et al. 2014).

Objectives:

- Evaluate information sources for and approaches to estimating relative environmental sensitivity.
- Develop and recommend options for replacing or supplementing previous BOEM methodologies.
- Be scalable, or easily expanded to allow the addition of new information and additional data.
- Conduct the relative environmental sensitivity of the 26 OCS Planning Areas using the approach identified and selected by BOEM.
- Be scientifically valid, transparent (e.g., methods and inputs used to derive results are made available), and repeatable by other scientists.
- Identify how to incorporate climate change risk in a more analytical manner.

Methods: evaluate the existing methods for estimating relative environmental sensitivity and marine productivity, including:

- Previous and current BOEM environmental sensitivity analysis methodologies.
- Peer-reviewed literature of case studies, metrics, and data types used in similar environmental sensitivity analyses.
- Other information.

Specific Research Question(s):

- 1) How should model scale affect our decision process (e.g., some methods are “micro scale” which would need to be combined to reach the OCS planning area scale; others are large scale and more easily adaptable to OCS planning areas)?
- 2) How can BOEM accurately model and depict environmental sensitivity and productivity across multiple scales in a clear and meaningful way?

References:

Niedoroda A, Davis S, Bowen M, Nestler E, Rowe J, Balouskus R, Schroeder M, Gallaway B, Fechhelm R. 2014. A method for the evaluation of the relative environmental sensitivity and marine productivity of the Outer Continental Shelf. Herndon (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 80 p. + appendices. Report No.: OCS Study BOEM 2014-616.