Environmental Studies Program: Ongoing Study

Title	Coastal Landscape/Seascape Character Classification and Assessment Methodology Development (AT-22-02)
Administered by	Office of Renewable Energy Programs
BOEM Contact(s)	John McCarty (john.mccarty@boem.gov)
Procurement Type(s)	Inter-agency agreement
Conducting Organization(s)	Argonne National Laboratory
Total BOEM Cost	$651,785
Performance Period	FY 2022–2024
Final Report Due	April 24, 2026
Date Revised	July 10, 2024
PICOC Summary	
Problem	Standardized methods for inventorying and classifying baseline scenic/ visual resource character of seascapes and landscapes have not been established to properly describe the affected visual environment. As a result, the visual impact assessments (VIA) submitted to BOEM by renewable energy developers describe the affected visual environment in different ways for the same area of ground. Not having a uniform and repeatable method for describing the affected visual environment may lead to inaccuracies and inhibits BOEM from maintaining consistency between projects when assessing significance of visual impact in environmental impact statements (EIS). This situation also inhibits BOEM's ability to adequately assess cumulative effects and monitor and evaluate trends in the condition of the seascape/ landscape visual character as deployment of offshore wind development increases.
Intervention	Develop a standardized method to inventory and classify scenic/ visual quality and condition of seascape and landscape environments to serve as a baseline for visual impact assessment. The standardized method will fill the gap presently found in National Environmental Policy Act (NEPA) assessments for offshore wind energy development in U.S. Federal waters.
Comparison	This study is not inherently premised on an experimental research design, thus comparison is not wholly relevant. Comparisons may be supported by the study's baseline characterizations of the maritime visual environment.
Outcome	Baseline information of current quality and condition of seascape and landscape environments for use in NEPA analysis, monitoring change, and tracking trends.
Context	Atlantic coastline in proximity to BOEM offshore renewable energy leases.

BOEM Information Need(s): BOEM must assess the potential visual impacts from offshore wind development on seascape and landscape character along the Atlantic coast. BOEM needs to establish a standardized and repeatable method for collecting a seascape and landscape inventory baseline required to produce a defensible NEPA impact assessment (Sullivan 2021). After a consistent inventory methodology is established, the method needs field testing.

Background: Seascape and landscape impact assessments (SLIA) analyzes and evaluates impacts on both the physical elements and features that make up a landscape or seascape and the aesthetic, perceptual, and experiential aspects of the landscape or seascape that make it distinctive. These impacts affect the "feel," "character," or "sense of place" of an area of landscape or seascape. In SLIA, the impact receptors (the entities that are potentially affected by the proposed project) are the seascape/landscape itself and its components, both its physical features and its distinctive character (DTI 2005).

In order to produce a defensible VIA, BOEM needs to establish a uniform and repeatable method for inventorying the visual environment that would be potentially affected by offshore renewable energy development (Sullivan 2021). Not having a standardized set of procedures to inventory seascape and landscape character, VIA practitioners have had to develop their own set of procedures or adapt existing onshore systems to address impacts from offshore renewable energy development. Different projects inventorying the affected environment in different ways may cause inaccuracies in the degree of visual impact to existing coastal landscape areas and for landscape user groups. It also leads to inconsistencies in analyzing and disclosing levels of impact between projects leading to public confusion and challenge.

Establishing a uniform method to inventory, classify, and describe the affected environment (Smardon 1988) with standardized GIS data entry will enable BOEM to monitor and map changes, forecast trends, and properly assess impacts from past, present and foreseeable development in order to properly disclose effects on seascapes and landscapes, curtail undesired future outcomes, and defend BOEM's analysis and impact disclosures to the visual environment.

Objectives: The objective of this study is to use a consistent methodology across all offshore wind projects to inventory baseline conditions of the Atlantic coastal seascape and landscape visual resources to support NEPA impact assessments, monitor change, and track trends.

Methods: Under current practice, those producing the visual impact assessments (VIA) describe the affected visual environment in different ways for the same common area of ground and sea. BOEM is in the process of releasing a framework for conducting a visual impact assessment titled Assessment of Seascape, Landscape, and Visual Impacts of Offshore Wind Energy Developments on the Outer Continental Shelf of the United States. The framework includes assessing impacts to seascape and landscape character areas (SLAs and LCAs, respectively), but does not provide details on how to inventory, delineate, and describe SLAs and LCAs. The study will supplement the SLVIA and fill this gap. Developing the method to inventory will involve evaluating the various baseline-collection methods already used in construction and operation plans submitted to BOEM, as well as conduct a literature search on methods used by other US federal agencies, state and local governments, and foreign governments (e.g., United Kingdom). A BOEM methodology will be built from existing procedures identified during the literature search and tailored to meet BOEM's specific needs. The study will include developing a data standard to guide data entry into an ArcGIS geodatabase for data storage, management, and use. The data collection will occur under a separate and future contract for implementing the inventory methodology.

Specific Research Question(s): What criteria and procedures should be used for collecting SCA and LCA inventory baseline data to establish a repeatable and defensible impact assessment?

Current Status: Kick-off meeting was held on May 22, 2024. Argonne National Laboratory (ANL) submitted a draft project management plan (PMP) to BOEM for review and comments, BOEM comments returned to ANL, and is updating based on comments. The ANL Study Team meets routinely

with the BOEM project manager and Environmental Studies Program Representative. ANL assembled a project data standard and management group made up of ANL GIS personnel and BOEM data managers. They are meeting weekly. ANL study team is researching literature sources, reviewing the literature, and preparing a literature review report that will serve as the foundation for the study.

Publications Completed: N/A

Affiliated WWW Sites: N/A

References:

[DTI] Department of Trade and Industry. 2005. Guidance on the assessment of the impact of offshore wind farms: seascape and visual impact report. http://webarchive.nationalarchives.gov.uk/+/http:/www.berr.gov.uk/files/file22852.pdf.

Smardon RC, Palmer JF, Knopf J, Henderson JE, Peyman-Dove LD. 1988. Visual Resource Assessment Procedures for the US Army Corps of Engineers. Instruction Report EL-88-1USACOE Waterways Experiment Station, Vicksburg MS [on line] http://www.esf.edu/via

Sullivan RG. 2021. Assessment of Seascape, Landscape, and Visual Impacts of Offshore Wind Energy Developments on the Outer Continental Shelf of the United States. Sterling (VA): Bureau of Ocean Energy Management. Report No. OCS Study BOEM 2021-032.