

Responsible Practices for Regional Wildlife Monitoring and Research in Relation to Offshore Wind Energy Development

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Offshore wind energy (OSW) development is expanding rapidly in the eastern U.S., and regional coordination of environmental research efforts is needed to improve our understanding of OSW effects on wildlife populations and marine ecosystems. **To address this need, in 2021 the New York State Offshore Wind Environmental Technical Working Group (E-TWG; nyetwg.com) formed the Regional Synthesis Workgroup to develop recommendations for regional environmental research and monitoring related to OSW development.**

The experts in the Regional Synthesis Workgroup determined that research and monitoring efforts at multiple spatial and temporal scales can contribute to a broader understanding of the environmental effects of OSW development. Thus, the group focused on recommendations for addressing research questions that: a) require data from a larger geographic scope than that of a single wind farm site, b) focus on methodological needs and/or implementation of mitigation to inform environmental research, risk assessments, and adaptive management decisions, and/or c) contribute to a mechanistic understanding of ecosystem processes, even if such studies are conducted at small spatial scales.

The two main products from the Regional Synthesis Workgroup are:

1. **A database** that compiles and synthesizes previously identified research needs related to wildlife and environmental effects of OSW energy development for the U.S. Atlantic, and
2. **High-level recommendations** on how to design, implement, and communicate regional research and monitoring efforts.

The newly released document, *"Responsible Practices for Regional Wildlife Monitoring and Research in Relation to Offshore Wind Energy Development"* defines the rationale and need for regional research and monitoring, provides background information about the Regional Synthesis Workgroup effort, provides clarity in language around research and monitoring and OSW effects terminology, aids in the identification of key data gaps and research needs for regional research, identifies common considerations to help prioritize future research, defines key components of a research framework, including study design and methodology considerations, and provides recommendations on effective collaboration, communication, data consistency, and data transparency for regional research and monitoring efforts.

Potential end users of these products include state and federal government entities, OSW developers, academics and other researchers, and groups such as the Regional Wildlife Science Collaborative (RWSC) and Responsible Offshore Science Alliance (ROSA) that are funding and/or conducting regional research to inform our understanding of the effects of OSW development on wildlife and ecosystems.

**Atlantic
Database of
Research Needs**



**Recommendations
for Regional
Research**



Key Aspects of the Responsible Practices Document

- **Clear and consistent definitions of terminology** such as research, monitoring, receptor, risk, effect, and impact, as well as a clearly defined conceptual model that describes the factors contributing to effects from OSW energy development on wildlife and marine ecosystems.
- **Research needs and data gaps compiled and synthesized into a single database to help inform the direction of future research and funding efforts.** The [U.S. Atlantic Environmental Research Recommendations Database](#), hosted on Tethys (see QR code on reverse), allows researchers and funders to easily access, sort, and prioritize research needs relevant to understanding the effects and impacts of OSW energy development of wildlife and ecosystems. It compiles and synthesizes research and monitoring needs and recommendations identified in a range of source documents published between 2015-2021 that are relevant to OSW and environmental research in the U.S. Atlantic.
- **Suggested criteria for prioritizing among the data gaps and research needs identified in the database**, including aspects of potential research projects such as importance, urgency of need, achievability, and efficiency and innovation.
- **Recommendations for the design of regional studies to ensure they can effectively answer ecological questions of interest.** Regional research efforts should have a clearly defined research plan that delineates how the proposed work will allow for a better understanding of population- or ecosystem-level effects and cumulative effects from OSW energy development. Regional study plans should clearly delineate:
 1. A conceptual framework,
 2. Study objectives, research questions and testable hypotheses,
 3. A study design, data collection methods, projected samples sizes/treatment units, and analytical approaches,
 4. Data sharing and coordination plans, and
 5. A process for evaluating effectiveness and validity of results.

The Responsible Practices Document details aspects of study design, data collection, and analysis methods such as the importance of integrating research at different spatial and temporal scales, considering statistical power and effect size, compatibility with long-term data collection, and the use of existing standards and protocols (many of which are cited for reference in the document).

- **Recommendations for collaboration and communication, data consistency, and data transparency.** Effective planning and implementation of regional OSW research should include, at minimum, consultation and/or cross-referencing with regional expertise, including ROSA and the RWSC, and may also include more formal engagement of experts as collaborators or project investigators. Collection and archiving of data should be conducted in as standardized and transparent a manner as possible to help ensure that results are accessible and can be used to inform future regional and site-specific research efforts.

