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

## Opportunity for Stakeholder Input

Hosted by the Regional Synthesis Workgroup of the Environmental Technical Working Group (E-TWG)

May 24, 2023

NEW YORK STATE | NYSERDA

# Regional Synthesis Workgroup

> E-TWG Lead: NYSERDA

- Kate McClellan Press (Workgroup chair)
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> Technical Support:

- **Biodiversity Research Institute (BRI)**
  Kate Williams, kate.williams@briwildlife.org
  Julia Gulka, julia.gulka@briwildlife.org
- **SEER team at the National Renewable Energy Lab and Pacific Northwest National Lab**
  Support for development of the U.S. Atlantic Offshore Wind Environmental Research Recommendations Database with funding from the U.S. Department of Energy

> Facilitation Support: Consensus Building Institute and Cadmus

- Bennett Brooks, Stefanie Sganga

NEW YORK STATE | NYSERDA

| Workgroup Member | Affiliation |
|---|---|
| Ally Sullivan | TotalEnergies |
| Annie Murphy / Marisa Guarinello | INSPIRE Environmental |
| Doug Nowacek / Pat Halpin | Duke University |
| Emily Shumchenia | Regional Wildlife Science Collaborative |
| Francine Kershaw | Natural Resources Defense Council |
| Jennifer Dupont / Michelle Fogarty | Equinor Wind US |
| Josh Kohut | Rutgers University |
| Juliet Lamb | The Nature Conservancy |
| Kyle Baker / Mary Boatman | Bureau of Ocean Energy Management |
| Lesley Thorne | Stony Brook University |
| Lisa Methratta | National Marine Fisheries Service (contractor) |
| Lyndie Hice-Dunton | National Offshore Wind R&D Consortium |
| Mike Pol | Responsible Offshore Science Alliance |
| Pam Loring | US Fish and Wildlife Service |
| Peter Auster | University of Connecticut/Mystic Aquarium |
| Rebecca Green | National Renewable Energy Laboratory |
| Renee Riley | NJ Dept. of Environmental Protection* |
| Sofie van Parijs | Northeast Fisheries Science Center |
| Steven Degraer | Belgian Royal Institute of Natural Sciences |
| Tim White | Bureau of Ocean Energy Management |

*Current affiliation: ROSA

# Meeting Agenda

- Welcome and introductions
- Background
- Intended end uses of workgroup products
- Overview of draft recommendations document
- Questions and feedback
- Wrap up & next steps

# Background

- In late 2021, the Offshore Wind Environmental Technical Working Group (E-TWG) formed a workgroup made up of scientific experts to inform and provide interim guidance for **regional research and monitoring efforts in the eastern U.S. focused on wildlife and offshore wind development**

- www.nyetwg.com/regional-synthesis-workgroup

# Rationale and Goals

- **Coordination of research efforts** will benefit our understanding of OSW effects, particularly cumulative impacts on wildlife populations
- Synthesis of research questions and data gaps, and development of guidance will:
  - Inform immediate decision-making by states, developers, and others about research activities to fund
  - Encourage coordination among researchers
  - Increase efficiency and reduce duplication of effort
  - Help ensure regional research and monitoring for OSW is conducted in a scientifically robust way
  - Help feed into Regional Wildlife Science Collaborative efforts (https://rwsc.org/)

# Primary Products

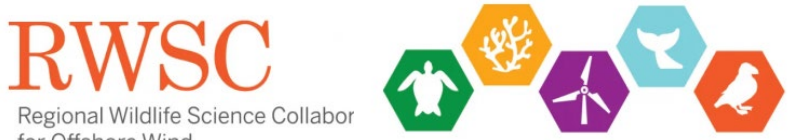
- Two primary products:
  - The U.S. Atlantic Offshore Wind Environmental Research Recommendations Database
    - Database of research needs and data gaps compiled and synthesized from existing sources
    - Finalized in January, available here: https://tethys.pnnl.gov/atlantic-offshore-wind-environmental-research-recommendations
  - **Interim recommendations for regional-scale research to complement the database (focus of today's meeting)**

# Opportunities for Public Feedback

- This meeting: Zoom chat, verbal input
- Online survey open until June 14 via group webpage: nyetwg.com/regional-synthesis-workgroup

# End Uses of the Database and Document

- Kate McClellan Press – Senior Project Manager with the Environmental Research Program, NYSERDA
- Emily Shumchenia – Director, RWSC
- Renee Riley – Director, ROSA
- Jennifer Dupont – Strategic Permitting Manager, Equinor



# Responsible Practices Document

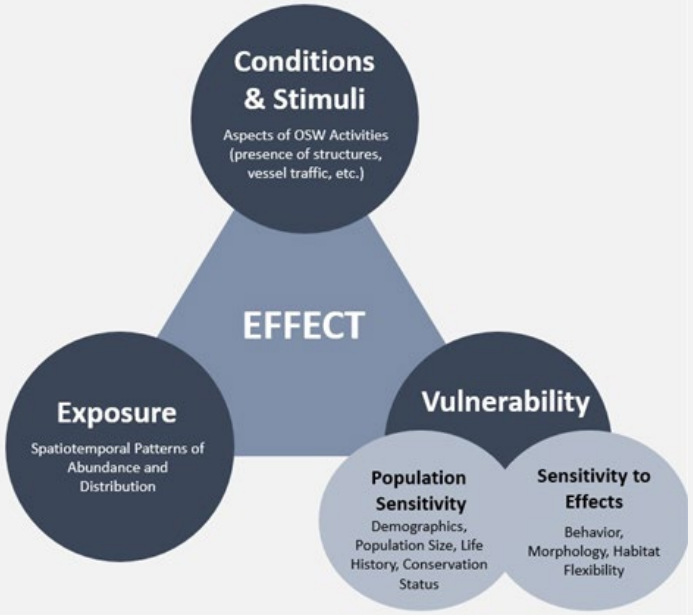
- Rationale for Regional Research and Monitoring
- Background and Purpose
- Terminology and Conceptual Models for Understanding OSW Effects
- Identifying Key Data Gaps and Research Needs for Regional Research
- Prioritizing Regional Research Topics
- Study Design and Methodology Considerations
- Collaboration and Communication, Data Consistency and Transparency
- Appendices

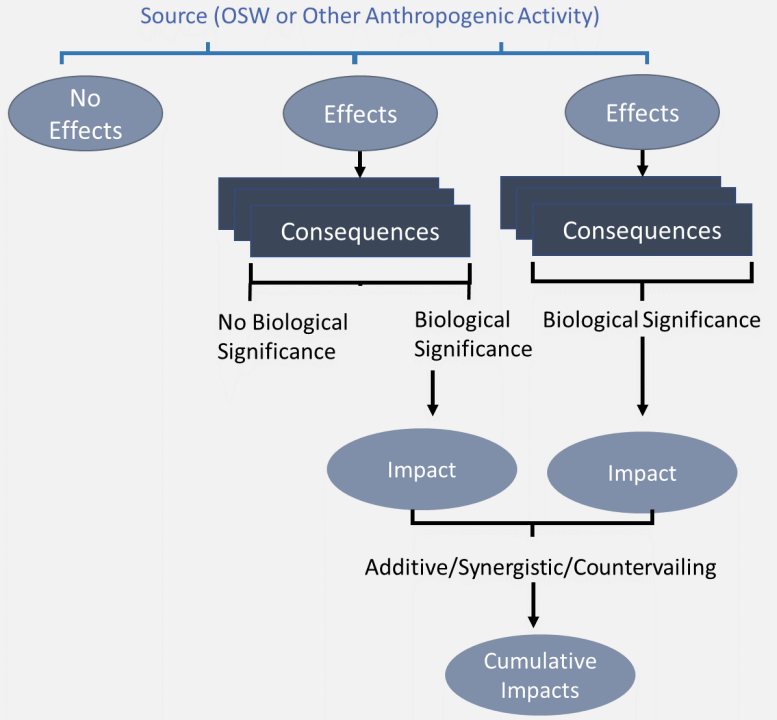
# Process for Developing the Document (Appendix A)

- Workplan developed with input from NYSERDA, the E-TWG, RWSC, ROSA, and SEER
- Scientific technical support team from BRI and SEER developed products with guidance and input from the workgroup
- Workgroup met approximately monthly from Dec 2021- April 2023
- Stakeholder input at various stages

# Terminology and Conceptual Models (Section 4, Appendix B glossary)

- To help foster clarity of purpose and common understanding, there is great value in the development of a common language
- Key terminology defined:
  - Research vs. monitoring
  - Connections between risk, effects, conditions and stimuli, exposure, and vulnerability
  - Distinguishing between effects and impacts
- Research – any type of hypothesis-driven scientific study that improves our understanding of populations and ecosystems, and/or our ability to measure or manage these systems. Monitoring represents a subset of research



# Terminology and Conceptual Models (Section 4, Appendix B glossary)

## Defining regional research - There are multiple ways studies could be considered “regional” in their implications:

- Data are required beyond a single wind farm site to answer the research question
- Study focuses on methodological needs and/or implementation of mitigation to inform environmental research, risk assessments, and/or adaptive management decisions
- Study contributes to a mechanistic understanding of ecosystem processes

# Identifying Key Data Gaps and Research Needs (Section 5, Appendix C)

- The **U.S. Atlantic Environmental Research Recommendations Database** 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 relevant to OSW and environmental topics


https://tethys.pnnl.gov/atlantic-offshore-wind-environmental-research-recommendations.

| Topic | Number of Research Recommendations |
|---|---|
| Baseline | 40 |
| Abundance and Distribution | 20 |
| Movement and Behavior | 20 |
| Ecological Drivers | 10 |
| Oceanographic/Atmospheric Change | 13 |
| Avoidance (including Displacement) | 13 |
| Attraction (including Lighting) | 7 |
| Habitat Change | 44 |
| Diet and Food Web Dynamics | 12 |
| Turbine Collision | 9 |
| Vessel Collision | 3 |
| Noise | 30 |
| Entanglement | 3 |
| Electromagnetic Field (EMF) | 7 |
| Physiology and Energetics | 14 |
| Cumulative Impacts | 14 |
| Population Dynamics | 22 |
| Technology/Methods Development | 63 |
| Data Management | 5 |

# Prioritizing Regional Research Topics (Section 6)

- Mutual recognition among regionally focused stakeholder groups that individual efforts could collectively be more effective if these groups are able to identify common criteria or considerations with which to help prioritize future work
- Considerations could be part of a multi-step decision process to select research projects for funding
- Entities may choose to utilize the considerations in different ways, and with their own entity-specific criteria
- Recommendations were developed via extensive stakeholder input

# Prioritizing Regional Research Topics (Section 6)

- **Importance and Urgency of Need** – contributes to understanding of key regional- and population-level effects of OSW
  - "Key" effects/impacts may relate to vulnerability, economic or societal value, importance in ecosystem stability and function, current state of knowledge
  - Understanding drivers of change
  - Inform decision making beyond a single project
  - Develop monitoring techniques, technologies, methodologies, protocols
  - Fulfills immediate information needs

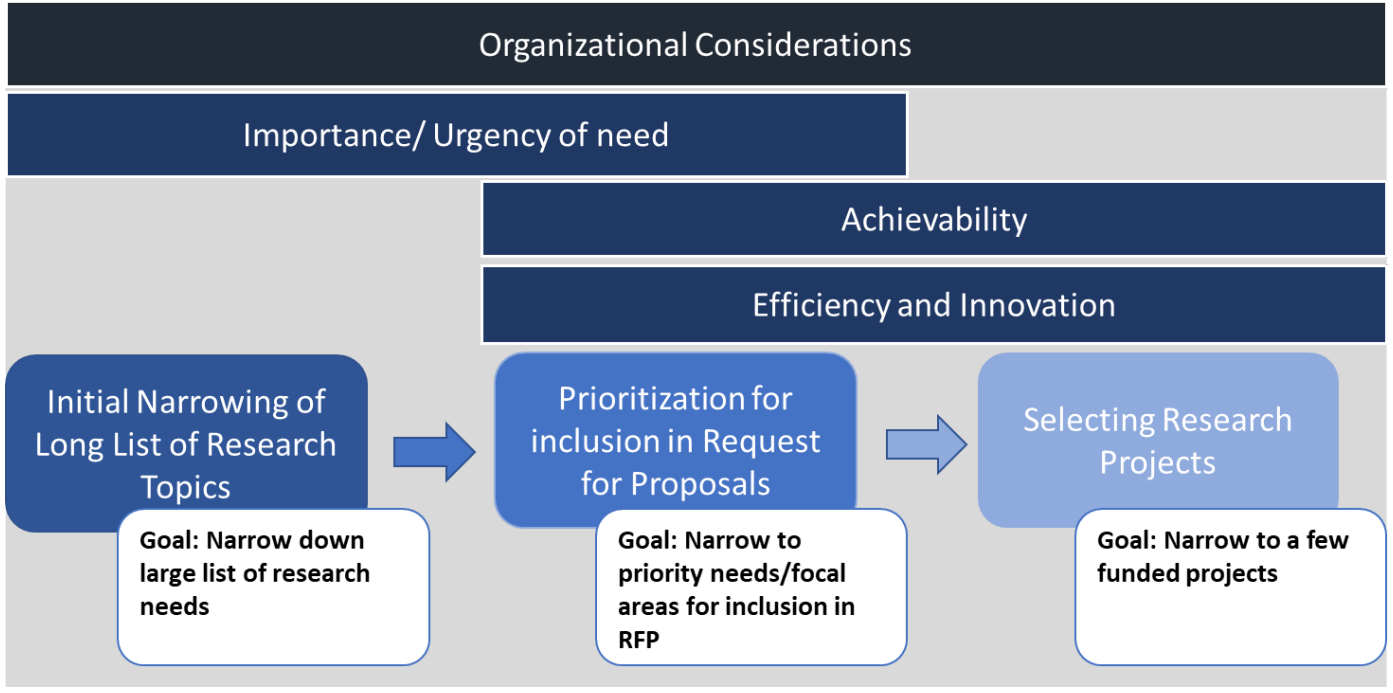



*Figure 3. Hypothetical example for how to prioritize research related to offshore wind energy development and wildlife and ecosystems using the considerations defined.*

# Prioritizing Regional Research Topics (Section 6)

- **Achievability** – identify research efforts will best be able to answer questions of interest
  - Has well-defined scope of inference
  - Produce results that are broadly applicable
  - Help to assess or reduce uncertainty
  - Be conducted on timeline and within logistical constraints
- **Efficiency and Innovation** – includes leveraging of existing resources and collaborations, existing data, or innovation

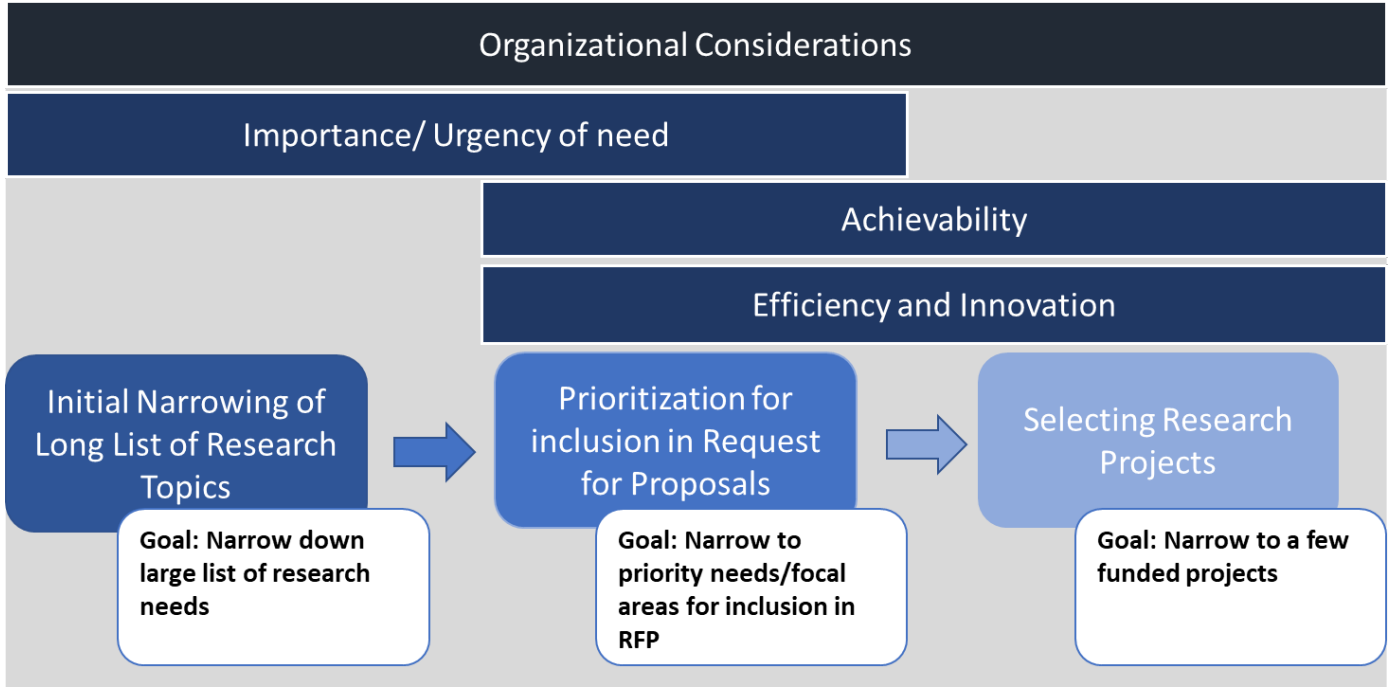



*Figure 3. Hypothetical example for how to prioritize research related to offshore wind energy development and wildlife and ecosystems using the considerations defined.*

# Study Design and Methodology Considerations for Regional Research (Section 7)

Once regional research needs have been identified and prioritized, the design and methodologies employed in regional studies must be carefully considered to ensure they can effectively answer ecological questions of interest.

## Key Components of a Research Plan

- Conceptual Framework
- Study Objectives and Research Questions
- Study Design, Data Collection, and Analysis Methods
- Data Sharing and Coordination Plans
- Evaluation of Study Effectiveness

# Study Design and Methodology Considerations (Section 7)

## Conceptual Framework

- Regional research plans should be informed by a conceptual framework that includes key system components, drivers of population or ecosystem dynamics, and putative drivers of change.
- Such a conceptual framework helps to articulate hypotheses regarding how the system works, including how OSW energy development may affect these systems and how those effects may translate into impacts (Reynolds et al. 2016).
- The selection of a conceptual framework and the identification of study objectives are interrelated and should be identified in tandem.

# Study Design and Methodology Considerations (Section 7)

## Study Objectives and Research Questions

- All regional research studies should be explicit about their objectives and intended outcomes
- Research questions and hypotheses should be clearly defined and testable based on the proposed study design, data collection methods, and analytical approaches
- Utilize existing resources, including the Research Recommendations database and resources therein to identify key research questions

# Study Design and Methodology Considerations (Section 7)

## Study Design, Data Collection and Analysis Methods

- Integration of research at different spatial and temporal scales
- Statistical power and effect size
- Data collection and integration, including environmental conditions, baseline data collection, biological parameters, and external factors
- Compatibility with long-term data collection
- Analytical methods and uncertainty
- Use of existing standards, protocols, and documents

# Study Design and Methodology Considerations (Section 7)

## Data Sharing and Coordination Plans

- Regional research plans should include a clearly delineated process and timeline for sharing study results and conclusions, including publication of scientific papers and reports, sharing of raw and processed data, and stakeholder outreach (e.g., public websites, webinars and conference presentations), as appropriate

## Evaluation of Study Effectiveness

- Research plans should include measures that can be used to evaluate performance, including identifying, calculating and reviewing a set of performance indicators or metrics

# Collaboration and Communication, Data Consistency, and Data Transparency (Section 8)

## Collaboration and Communication

- Ensure consistent and transparent communication with regional research entities and other relevant coordination groups
- Consider coordination with other geographies
- Engage in early planning and collaboration for study design development

## Data Standardization

- Ensure consistency of data collection, following existing guidelines and protocols
- Follow appropriate metadata standards

# Collaboration and Communication, Data Consistency, and Data Transparency (Section 8)

## Data Sharing and Transparency

- Encourage development and implementation of formal data sharing agreements
- Make data publicly available in a timely manner via common data portals
- Report results clearly and consistently
- Encourage independent peer-review and public accessibility of results

# Draft Document and Feedback

- Draft document for review
- Feedback via:
  - Verbal/chat input via this meeting
  - Online survey open until June 14

*Document and survey on nyetwg.com/regional-synthesis-workgroup*

# Next Steps and Timeline

- Following the public feedback period, the regional synthesis workgroup will review comments and revise the document, with the goal of finalizing by August
- The final version of the document will be posted on the E-TWG website: nyetwg.com/regional-synthesis-workgroup

*We will send an email notification to all meeting participants when the final document is publicly available*

# Group Discussion

# Group Discussion

- Clarifying Questions?
- Key Areas of Feedback
  - Are there aspects that require clarification?
  - Is there anything missing?

*We are focusing today's discussion on sections that are not introductory and have not already gone through a similar public feedback process:*

- *Terminology and conceptual models (Section 4)*
- *Study design and methodology considerations (Section 7)*
- *Collaboration, communication, data consistency and transparency (Section 8)*

# Terminology and Conceptual Models (Section 4)

- Clarifying Questions?
- Key Areas of Feedback
  - Are there aspects that require clarification?
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# Study Design and Methodology Considerations (Section 7)

- Clarifying Questions?
- Key Areas of Feedback
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# Collaboration, Communication, Data Consistency and Transparency (Section 8)

- Clarifying Questions?
- Key Areas of Feedback
  - Are there aspects that require clarification?
  - Is there anything missing?

# Wrap Up & Next Steps

- **We are looking for feedback on the draft document until June 14.** *Document and survey on nyetwg.com/regional-synthesis-workgroup*
- Following revision with the workgroup, final version of the document will be posted on the workgroup webpage of the E-TWG website (hopefully by August)
- We will notify you via email when the document is finalized and publicly available