



State of the Science Workshop Agenda

July 26-28 and September 21, 2022

Tuesday, July 26

1:00-5:00 pm Side Meetings Room locations noted below

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| 1-2:30 pm | Compensatory Mitigation for Birds: Opening a Dialog (hosted by the Atlantic Marine Bird Cooperative Marine Spatial Planning Workgroup). Discussion open to all workshop attendees with prior registration (Salon 3) |
| 3-5 pm | Operating and Calibrating Offshore Motus Stations (hosted by the U.S. Fish and Wildlife Service and University of Rhode Island). Workshop open to all workshop attendees with prior registration (Salon 3) |
| 1-5 pm | Non-Extractive Techniques for Resource Assessment (hosted by the Responsible Offshore Science Alliance). Open to workshop attendees with prior registration (Salon 1-2) |
| 2-5 pm | Project WOW External Advisory Board (hosted by the Regional Wildlife Science Collaborative). Closed meeting (Salon 5) |

5:00-7:00 pm Opening Reception Bistro Z Restaurant Terrace

Opening Reception – Open to all Workshop Attendees

Lactation room: A lactation room will be available 1-8 pm EDT on July 26, 8am-8pm July 27, and 8pm-8pm on July 28 (guest room with refrigerator). Contact Eleanor.eckel@briwildlife.org for more information.

Wednesday, July 27

8:00-9:00 am Continental Breakfast Grand Prefunction/Grand Terrace

9:00-10:30 am Welcome and Keynote Address Grand Ballroom

- Welcome from NYSERDA and workshop planning committees
- Keynote from Ivan Savitsky, Offshore Wind Manager at The Carbon Trust and manager of the Offshore Renewables Joint Industry Programme (ORJIP) for Offshore Wind

10:30-11:00 Break Grand Prefunction Room

11:00 am-12:30 pm Session 1 Grand Ballroom (Salons 1-3)

Session 1: Oral Presentations

- *Demersal trawl and ventless trap surveys at Block Island Wind Farm* – Dara Wilber
- *NOAA Fisheries and BOEM federal survey mitigation implementation strategy* – Northeast U.S Region – Andy Lipsky
- *Altered spatial distribution of a marine top predator under elevated ambient sound conditions* – Amber Fandel
- *Displacement of Red-throated Loon by offshore wind farms in the North Sea of Germany* – Georg Nehls
- *Piloting the operationalization of net positive impact on an offshore wind project* – Jennifer Dupont
- Question and Answer (Q&A) Period – all speakers

12:30-1:30 pm Lunch on the Grand Terrace

1:30-3:00 pm Sessions 2-3 Grand Ballroom (Salons 1-2 and 3)

Session 2: Oral Presentations – Grand Ballroom Salons 1-2

- *Sometimes seen, but often heard: Presence of dolphins and harbor porpoise in potential cable corridor areas* – Melinda Rekdahl/Sarah Trabue
- *Monitoring the health and movements of pinnipeds in the Northwest Atlantic Ocean* –Robert DiGiovanni
- *SPACEWHALE: Surveying whales from space as an effective tool for baseline studies and respective monitoring* – Julika Voss
- *Extremely reliable locations and calling abundance via passive acoustic monitoring* – John Spiesburger
- *Automatic whale detection from vessels for real-time vessel-strike and noise impact mitigation – current developments and applicability* – Daniel Zitterbart
- Q&A Period – all speakers

Session 3: Symposium – Grand Ballroom Salon 3

Predatory-prey interactions with forage fish and seabirds: Building a foundation to understand indirect effects of offshore wind on marine ecosystems – Evan Adams. Examination of predator-prey relationships in the context of offshore wind development, focusing on seabirds and their prey. Presenters will describe forage fish trends and communities and the movements of the predators that rely on them, and discuss effects of offshore wind that can precipitate ecosystem changes.

- Forage fish occurrence and temporal changes in offshore wind energy areas on the U.S. Northeastern Continental Shelf – Kevin Friedland
- The influence of climate and wind energy development on seabird-forage fish trophic relationships in the Northeast U.S. – Michelle Staudinger
- Forage fish community and surface aggregation dynamics in the Northeast U.S. Continental Shelf Ecosystem – Chandra Goetsch
- Assessing individual movement, habitat use, and behavior of non-breeding marine birds in relation to planned offshore wind development in the eastern U.S. – Julia Gulka
- Filling knowledge gaps: What's next for understanding changes to seabird-forage fish dynamics? – Evan Adams
- Panel Discussion – all speakers

3:00-3:30 pm Break Grand Prefunction Room

3:00-5:00 pm Sessions 4-5 Grand Ballroom (Salons 1-2 and 3)

Session 4: Oral Presentations – Grand Ballroom Salons 1-2

- *Regional habitat modeling results & establishing standard benthic data sharing workflows* – Marisa Guarinello
- *Modeling distributions of deep-sea corals offshore of the Southeastern United States to guide efficient discovery and protection of sensitive habitats* – Matthew Poti
- *Use of passive acoustic telemetry to monitor the presence and persistence of highly migratory species within Southern New England wind energy areas* – Brian Gervelis
- *Pre-construction evaluation of Atlantic cod spawning in Southern New England offshore wind areas* – Alison Frey
- *Establishing the Atlantic cod spatiotemporal spawning baseline in Southern New England to assess potential interactions with offshore wind energy* – Rebecca Van Hoeck
- Q&A Period – all speakers

Session 5: Symposium – Grand Ballroom Salon 3

New York, New York: Working together to establish marine mammal baselines in and around a wind energy lease area and associated cable corridors – Howard Rosenbaum. Introduction to a collaborative project focusing on collecting baseline information on cetacean presence in the New York Bight. Presentations discuss project objectives and results thus far and include discussion on collaboration between researchers and developers.

- *Passive acoustic monitoring in near real-time and associated capabilities* – Mark Baumgartner
- *Using regional datasets to inform environmental impact assessment and mitigation measures: A developer's perspective* – Jennifer Dupont
- *North Atlantic right whale (NARW) presence and vocal activity: Implications for safe passage through the New York Bight* – Anita Murray
- *Temporal variability in fin whale vocal activity: Understanding occurrence, behavioral shifts, and population structure in the New York Bight* – Carissa King
- *Baleen whale sightings: Distribution, behavior, and overlap with anthropogenic activities* – Emily Chou
- Panel Discussion – all speakers

5:00-5:30 pm Break

5:30-7:30 pm Poster Session Grand Terrace

Poster Session Grand Terrace
(posters listed below)

Thursday, July 28

8:00-9:00 am Continental Breakfast Grand Prefunction/Grand Terrace

9:00-10:30 am Session 6 Grand Ballroom (Salons 1-3)

Session 6: Oral Presentations

- *Modeling offshore wind infrastructure effects on upper ocean physical and biogeochemical processes and implications for higher trophic levels* – Hansong Tang
- *Effects of floating offshore wind farms on coastal upwelling in the California Current ecosystem* – Kaus Raghukumar
- *Comparing underwater noise measured during construction of the first two offshore wind farms in the U.S.* – Kristen Ampela
- *Characterizing the operational soundscape of floating offshore wind parks: Implications for environmental risk assessment and wildlife* – Jordan Carduner
- *The characterization of acoustic particle motion from loud impulsive and quiet sustained sources of sound* – Kaus Raghukumar
- Q&A Period – all speakers

10:30-11:00 Break Grand Prefunction Room

11:00 am -12:30 pm Sessions 7-8 Grand Ballroom (Salons 1-2 and 3)

Session 7: Oral Presentations – Grand Ballroom Salons 1-2

- *Environmental drivers of distribution of whales, seabirds, and turtles in the New York Bight* – Sarah Courbis
- *Modeling past and future spatial distributions of marine bird species in U.S. Atlantic waters* – Arliss Winship
- *Oceanic records of North American bats and implications for offshore wind energy development in the United States* – Christian Newman
- *Offshore bat activity patterns detected by vessel-based acoustic monitoring* – Nathan Schwab
- *Technology needs for scientifically robust wildlife monitoring and adaptive management of birds and marine mammals* – Sarah Courbis
- Q&A Period – all speakers

Session 8: Symposium – Grand Ballroom Salon 3

If we build it, who will come? Exploring artificial reef effects associated with offshore wind installations – Carl LoBue and Annie Murphy. Examination of the ecological implications of introducing novel structures such as turbine foundations and scour protection into the marine environment through offshore wind development. Presentations will discuss nature-inclusive designs, identifying knowledge gaps, outlining research methodologies, and associated US-specific socio-ecological aspects.

- The flyway concept and assessment of offshore wind impacts on migratory marine fauna – David Secor
- Turbines as artificial reefs, nature-based design options to enhance habitat – Christopher McGuire
- Epifaunal colonization on foundations in the U.S. and subsequent organic enrichment to the seafloor – Annie Murphy
- Overview of lessons learned from Europe – Steven Degraer
- Artificial reefs associated with southern California oil and gas platforms – Erin Meyer-Gutbrod
- Panel Discussion – all speakers

12:30-1:30 pm Lunch on the Grand Terrace

1:30-3:00 pm Sessions 9-10 Grand Ballroom (Salons 1-2 and 3)

Session 9: Symposium – Grand Ballroom Salons 1-2

Collaborative animal movement studies to improve conservation outcomes – Pamela Loring, U.S. Fish and Wildlife Service. Discussion of current efforts and next steps for coordination and analysis of wildlife telemetry data for offshore wind research, monitoring, and assessments in the Atlantic. Using birds as a case study, symposium speakers will focus on coordinated automated radio telemetry (Motus) and satellite telemetry (e.g., Argos and GPS).

- Development of a coordinated offshore Motus network for monitoring birds and bats at site specific to regional scales – Pamela Loring
- Evaluating the impact of offshore Motus study design choices on the presence and movements of birds in marine environments – Evan Adams
- SCRAM model for estimating offshore avian collision risk using avian movement data – Andrew Gilbert
- A framework to determine optimal sample sizes and transmitter distribution for individual tracking studies – Juliet Lamb
- Combining satellite telemetry data across studies for *Sterna* terns relative offshore wind energy in Brazil – Rafael Revorêdo
- Panel Discussion – all speakers

Session 10: Symposium – Grand Ballroom Salon 3

Autonomous solutions responding to the oceanographic and ecological monitoring needs of offshore wind development – Josh Kohut and Grace Saba. Panel discussion focused on the use of autonomous platforms such as underwater gliders in offshore wind-related ecological and environmental monitoring. An introductory presentation will highlight a recent successful example of replacing vessel-based surveys from Antarctica with autonomous survey platforms. Panel discussion will include federal, state, and private sector perspectives on autonomous monitoring and regulatory solutions.

- Autonomous monitoring for resource assessment in the Antarctic and California Current – Christian Reiss
- Panel Discussion: Josh Kohut, Grace Saba, Andy Lipsky, Kate McClellan Press, Kira Lawrence, Renee Riley, Greg DeCelles, Christian Reiss

3:00-3:30 pm Break Grand Prefunction Room

3:00–5:00 pm Session 11 Grand Ballroom (Salons 1–3)

Session 11: Symposium

Progress on RWSC Science Plan for wildlife, habitat, and offshore wind energy in the U.S. Atlantic – Emily Shumchenia. The Regional Wildlife Science Collaborative (RWSC) is focused on how offshore wind development will affect wildlife and ecosystems off the U.S. Atlantic coast. This symposium will provide an update on development of integrated science plans, and how they will inform future coordination of research activities and funding. Following presentations from each taxa-based subcommittee, a concluding discussion will address future expectations and considerations.

- General RWSC introduction and recent progress, and Protected Fish Subcommittee update – Emily Shumchenia
- Bird & Bat Subcommittee update – Zara Dowling
- Marine Mammal Subcommittee update – Deborah Brill
- Sea Turtle Subcommittee update – Avalon Bristow
- Habitat & Ecosystem Subcommittee update – Marisa Guarinello
- Panel Discussion: Kyle Baker, Corrie Curtice, Carl LoBue, Stephanie Vail–Muse, Nick Napoli

5:00-5:30 pm Concluding Remarks Grand Ballroom (Salons 1-3)

Concluding Remarks

Wednesday, September 21 (Virtual Session)

10:30–12:30 pm Session 12 Virtual

Session 12: Oral Presentations

- *Investigating prey fields near foraging right whales in southern New England* – Harvey Walsh
- *Towards understanding the potential for offshore wind to impact bats* – Jeff Clerc
- *Method for defining appropriate Acceptable Levels of Impact on bird populations* – Astrid Potiek
- *Using remote monitoring to understand weather influences on bird activity in the offshore environment* – Greg Forcey
- *The use of LiDAR technology to measure site specific offshore avian flight heights* – Steph McGovern
- *Machine learning for automated detection and classification of seabirds, waterfowl, and other marine wildlife from digital aerial imagery* – Kyle Landolt
- *B-finder – automatic bat & bird collision monitoring for wind farms* – Michal Przybycin
- *Design, production, and validation of the biological and structural performance of an ecologically engineered concrete block mattress* – Heather Weitzner
- Q&A Period – all speakers

Posters *(Organized by theme, listed alphabetically by presenter last name)*

Establishing a baseline: Understanding wildlife populations and distributions in the U.S.

BOEM environmental studies for protected species and offshore wind
Kyle Baker, Bureau of Ocean Energy Management

Long-term trends in large whale ecology in the New York Bight and adjacent estuaries
Danielle Brown, Rutgers University, Gotham Whale

Marine mammal and sea turtle stranding response in the NY Bight: A baseline record of current threats in the Northwest Atlantic
Allison DePerte, Atlantic Marine Conservation Society

Aligning the seasonal migrations of North Atlantic Right Whales with oceanic features
Courtney Dreyfus, Rutgers University

Standardized data extraction from seabed imagery using machine learning
Katherine Heal, Integral Consulting

Tracking the habitat use of herring and great black-backed gulls in proposed offshore wind areas
Kimberley Lato, Stony Brook University

Biosensors on metocean buoys provide long-term monitoring for diverse marine mammal species
Elijah Lee, Ocean Tech Services

Maximizing the potential of protected species observer data
Stephanie Milne, RPS Group

Large whale distribution and density in the New York Bight from aerial surveys 2017-2020
Meghan Rickard, New York State Department of Environmental Conservation

Digital aerial surveys and their use for establishing a baseline for site assessments
Jeff Tetzlaff and Cassandra Flint, APEM Ltd.

Distance sampling seabird surveys in the New York Bight
Lesley Thorne, Stony Brook University

Assessing the role of ocean currents on prey concentration from hourly to seasonal scales using lagrangian coherent structures
Jacquelyn Veatch, Rutgers University

Monitoring surveys of pelagic fish and zooplankton in the New York Bight
Joseph Warren, Stony Brook University

The first marine mammal surveys in the lower Thames River, Connecticut
Ann Zoidis, Tetra Tech

Offshore wind development effects and species/ecosystem responses

Development of research priorities for offshore wind and marine resources in New Jersey
Colleen Brust, New Jersey Dept. of Environmental Protection

A multi-sensor approach for measuring bird and bat collisions with wind turbines: Completed validation results
Jennifer Stucker, Western EcoSystem Technology, Inc.

Risk assessments: Approaches and challenges

New York offshore wind cable corridor constraints assessment
Steven MacLeod, WSP USA

Long-range offshore wake losses: Validation and practical impacts on offshore wind energy development
Mark Stoelinga, ArcVera Renewables

Minimization and mitigation approaches

Measuring the effectiveness of a double bubble curtain during impact pile driving for the Coastal Virginia Offshore Wind (CVOW) Project
Kristen Ampela, HDR Inc.

An agent-based model to assess the effectiveness of surface-based detection methods for vessel strike mitigation of large mammals
Loicka Baille, Woods Hole Oceanographic Institution

AI for whales: Towards real-time, automated detections in thermal imagery
Alex Borowicz, Stony Brook University

Offshore wind farms – modelling tools for nature inclusive design in a dynamic sand wave area
Nicholas Cohn, Deltares USA

Best practices for mitigation of offshore wind energy impacts on Pacific seabirds
Aspen Ellis, University of California - Santa Cruz

Facilitating digital communication between offshore wind farms and marine stakeholders mitigates impact on fisheries and the environment
Khalid Kamhawi, Ithaca Clean Energy

Collaborative processes to improve development and conservation outcomes

Effective stakeholder engagement in offshore wind energy development: New York State's Environmental and Fisheries Technical Working Groups
Morgan Brunbauer, New York State Energy Research & Development Authority

Wildlife and Offshore Wind (WOW): A systems approach to research and risk assessment for offshore wind development from Maine to North Carolina
Corrie Curtice, Duke University

Tethys: Facilitating knowledge sharing for offshore wind-wildlife research around the world
Hayley Farr, Pacific Northwest National Laboratory

Wildlife data standardization and sharing: Guidance for environmental data transparency for offshore wind energy
Ed Jenkins, Biodiversity Research Institute

Turbine reefs: Nature-based design of scour protection as a potential net-positive enhancement tool
Carl LoBue, The Nature Conservancy