

**Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species  
Objectives and Daily Schedule**

March 7-9, 2017

NOAA FISHERIES  
BUILDING 4 (SCIENCE CENTER)  
1301 EAST-WEST HIGHWAY  
SILVER SPRING, MD 20910

*Workshop Objectives:*

- Increase understanding around the science and regulations for protecting marine species from the effects of offshore wind development on the Atlantic Outer Continental Shelf (OCS).
- Identify and discuss possible best management practices (BMPs) for preventing, reducing, and monitoring offshore wind effects to marine protected species on the Atlantic OCS.

**Day 1: Tuesday, March 7**

8:00-8:30 am *Check-in*

8:30-9:15 am **I. Background and Welcome**

- a. Welcome and Opening Remarks
  - i. Introductions
- b. Science, Regulatory Requirements, and Stakeholder Coordination
- c. Workshop and Role of Panel
  - i. Best Management Practices
  - ii. Role of the Panel
  - iii. Review of Agenda and Ground rules

*Walter Cruickshank, Ph.D., BOEM Acting Director  
Abby Arnold, Kearns & West (K&W)*

*Tamara Arzt, BOEM*

*Kyle Baker, BOEM*

*K&W*

**II. Perspectives on Protected Species and  
Offshore Wind Development**

9:15-10:35 am

9:15-9:30 am

- a. BOEM Offshore Wind Leasing Process and Workshop Goals  
*(presentation followed by Panel Q&A<sup>1</sup>)*
- i. Lease area locations
  - ii. Lease and plan review stages
  - iii. Survey instruments for lessees
  - iv. NEPA
  - v. Role of BMPs in these processes

*Michelle Morin, BOEM*

9:30-9:45 am

- b. Industry Perspectives on Offshore Wind Development and Protected Species  
An overview of workshop goals and considerations from the industry perspective  
*(presentation followed by Panel Q&A)*

*Nancy Sopko,  
American Wind Energy Association*

9:45-10:00 am

- c. NGO Perspectives on Conservation Priorities for Protected Species *(presentation followed by Panel Q&A)*  
An overview of perspectives and workshop goals from national environmental organizations.

*Catherine Bowes, NWF, Michael Jasny, NRDC, and  
Howard Rosenbaum, Wildlife Conservation Society*

10:00-10:15 am

- d. Scientific/Academic Perspectives  
*(presentation followed by Panel Q&A)*  
An overview of academic perspectives on offshore wind development.

*Jason Roberts, Duke University*

10:15-10:35 am

- e. NMFS Endangered Species Act Consultations  
*(presentation followed by Panel Q&A)*

*Julie Crocker, NOAA Fisheries*

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<sup>1</sup> Participants who are not Panelists are welcome to fill out index cards with their questions and submit them to BOEM staff.

- i. NMFS ESA requirements and timelines
- ii. Incidental Take Statement requirements
- iii. Existing/future consultations pertaining to Construction and Operations Plans and General Activities Plans

10:35-10:45 am **Break**

10:45-11:05 am **II. Perspectives on Protected Species and Offshore Wind Development** *(continued)*

- 10:45-11:05 am f. NOAA Fisheries Remarks
- g. NMFS Marine Mammal Protection Act (MMPA) Compliance *(presentation followed by Panel Q&A)*
  - i. MMPA Incidental Take Authorization Requirements and timelines
  - ii. Information requirements

*NOAA Fisheries Leadership  
Jordan Carduner, NOAA Fisheries*

11:05-12:30 pm **III. Identifying Effects to Protected Species**

- 11:05-11:10 am a. Purpose and Goals
- 11:10-11:20 am b. Protected Species and Critical Habitat in Atlantic Wind Energy Areas – An overview of Species, Habitat, and Conservation Goals *(presentation followed by Panel Q&A)*
- 11:20-11:35 am c. Activities Associated with Offshore Wind Development (general plan-envelope concept) *(presentation followed by Panel Q&A)*

*Kyle Baker, BOEM  
Allison Hernandez, NOAA Fisheries*

*Aileen Kenney, Deepwater Wind*

- i. Overview of general activities, surveys, turbine bases, cables, vessel ops, and trends in turbine height and number

11:35-12:30 pm

**IV. Lessons Learned from Offshore Wind in the UK – a conservation agency perspective**  
(presentation followed by Panel Q&A)

*Sónia Mendes,  
Joint Nature Conservation Committee*

- a. Mitigation and monitoring strategies in the UK
- b. Lessons learned
- c. Panel Discussion

12:30-1:30 pm

**Break for Lunch**

1:30-2:15 pm

**V. Introduction to an Effects Framework**  
(presentation followed by Panel Q&A)

*Facilitated by K&W*

- a. Introduction to Effects Matrix
- b. What are activities and effects to marine mammals, sea turtles, and habitat (e.g., injury, avoidance, duration of impact)?
- c. Can we assign a relative priority level for each impact? (What are the criteria we use to set priorities?)

2:15-3:45 pm

**VI. Mitigation and Monitoring of Underwater Noise**

2:15-2:30 pm

- a. Introduction to Noise from Offshore Wind Activities
  - i. Panel discussion on effects of underwater noise (matrix)
  - ii. Key issues for mitigation and monitoring regarding underwater noise

*Desray Reeb, BOEM*

*Facilitated by K&W*

2:30-3:00 pm	<ul style="list-style-type: none"> <li>b. NOAA Marine Mammal Acoustic Technical Guidance <i>(presentation followed by Panel Q&amp;A)</i> <ul style="list-style-type: none"> <li>i. NOAA sound exposure criteria summary</li> <li>ii. Example cumulative exposure distance calculation and applications to BMP development</li> </ul> </li> </ul>	<i>Amy Scholik-Schlomer, NOAA Fisheries</i>
3:00-3:20 pm	<ul style="list-style-type: none"> <li>c. High-Resolution Geophysical (HRG) Surveys <i>(presentation followed by Panel Q&amp;A)</i> <ul style="list-style-type: none"> <li>i. Introduction</li> <li>ii. Sound Source Characterization Studies</li> </ul> </li> </ul>	<i>Dsray Reeb, BOEM</i>
3:20-3:45 pm	<ul style="list-style-type: none"> <li>d. Review of BOEM's Existing HRG Requirements based on New Sound Source Information <i>(presentation followed by Panel Q&amp;A)</i> <ul style="list-style-type: none"> <li>i. Exclusion Zones</li> <li>ii. Protected Species Observers</li> <li>iii. Sound Source Verification</li> <li>iv. Nighttime surveys and alternative monitoring plans</li> </ul> </li> </ul>	<i>Stanley Labak, BOEM</i>
3:45-4:00 pm	<p><b>VII. Participant Comment on all meeting topics</b>  (participants should register in advance if they wish to comment)</p>	<i>Desray Reeb, BOEM</i>
4:00-4:15 pm	<b><i>Networking Break</i></b>	<i>Facilitated by K&amp;W</i>
4:15-5:15 pm	<p><b>VIII. Panel Discussion on HRG Surveys and Best Management Practices</b></p>	<i>Facilitated by K&amp;W</i>
5:15-5:30	<b>Wrap up and Adjourn</b>	<i>Facilitated by K&amp;W</i>

**Day 2: Wednesday, March 8**

8:00-8:30 am *Check-in*

**IX. Welcome**

8:30-8:45 am a. Day 1 Recap and Overview of Day 2

*Facilitated by K&W*

8:45-12:30 pm **X. Pile Driving**

8:45-8:50 a. Introduction

*Kyle Baker, BOEM*

8:50-9:05 am b. Monitoring Results from Block Island Wind Farm *(presentation followed by Panel Q&A)*

*David Zeddies, JASCO Applied Sciences*

9:05-9:50 am c. Germany Requirements for Pile Driving *(presentation followed by Panel Q&A)*

*Eva Philipp, Vattenfall*

- i. Requirements in Germany
- ii. Mitigation and monitoring results
- iii. Lessons Learned

9:50-10:05 am c. Questions from the Audience on Pile Driving

*Facilitated by K&W*

10:05-10:35 am d. Panel Discussion on Pile Driving

*Facilitated by K&W*

10:35-10:45 am **Break**

10:45-12:30 pm e. Panel Discussion on Pile Driving (continued)

*Facilitated by K&W*

- i. Noise Levels and Exclusion Zones
- ii. Survey Platforms (Visual and Acoustic)
- iii. Nighttime Construction
- iv. Sound Source Monitoring

12:30-1:30 pm **Break for Lunch**

*Optional Lunchtime Presentation on Thermal Imaging and Round the Clock Visual Monitoring*

*Bernard Padovani, Seiche*

1:30-2:30 pm	<b>X. Pile Driving</b> (continued)	
1:30-2:25 pm	<ul style="list-style-type: none"> <li>f. Panel Discussion on Pile Driving (continued) <ul style="list-style-type: none"> <li>i. Seasonal Considerations</li> <li>ii. Data Collection and Reporting</li> </ul> </li> </ul>	<i>Facilitated by K&amp;W</i>
2:25-2:55 pm	<b>XI. Participant Comment on all meeting topics</b> (participants should register in advance if they wish to comment)	<i>Facilitated by K&amp;W</i>
2:55-3:35 pm	<b>XII. Baseline Monitoring</b>	
2:55-3:00 pm	a. Introduction and Goals	<i>Kyle Baker, BOEM</i>
3:00-3:10 pm	<ul style="list-style-type: none"> <li>b. Baseline Assessments Management <i>(presentation followed by Panel Q&amp;A)</i> <ul style="list-style-type: none"> <li>i. Role of BOEM's Environmental Studies Program</li> <li>ii. BOEM's 2016 Science Forum Summary</li> </ul> </li> </ul>	<i>Mary Boatman, BOEM</i>
3:10-3:20 pm	<ul style="list-style-type: none"> <li>c. Orientation to Baseline Marine Wildlife and Habitat Data for Offshore Energy Siting and Operations <i>(presentation followed by Panel Q&amp;A)</i> <ul style="list-style-type: none"> <li>i. Types of data collected</li> <li>ii. Broad-scale and fine-scale</li> <li>iii. Future work funded</li> </ul> </li> </ul>	<i>Jay Odell, The Nature Conservancy</i>
3:20-3:35 pm	d. Atlantic Marine Assessment Program for Protected Species <i>(presentation followed by Panel Q&amp;A)</i>	<i>Debra Palka, NMFS</i>
3:35-3:45 pm	<b>Networking Break</b>	

3:45-5:15 pm	<b>XII. Baseline Monitoring</b> (continued)	
3:45-4:00 pm	e. Atlantic Passive Acoustic Monitoring of Soundscapes ( <i>presentation followed by Panel Q&amp;A</i> ) <ul style="list-style-type: none"> <li>i. Discuss broad scale and fine scale capabilities of the PAM effort currently underway</li> </ul>	<i>Sofie Van Parijs, NOAA Fisheries</i>
4:00-4:15 pm	f. Massachusetts Clean Energy Center Large Pelagics Surveys ( <i>presentation followed by Panel Q&amp;A</i> ) <ul style="list-style-type: none"> <li>i. <i>Fine-scale survey efforts</i></li> </ul>	<i>Scott Kraus, New England Aquarium</i>
4:15-4:30 pm	g. Ultra High Resolution Aerial Surveys in the Atlantic ( <i>presentation followed by Panel Q&amp;A</i> ) <ul style="list-style-type: none"> <li>i. Broad and fine-scale surveys</li> </ul>	<i>Christian Newman, APEM</i>
4:30-5:15 pm	h. Panel Discussion on Baseline Monitoring <ul style="list-style-type: none"> <li>i. Distribution and abundance</li> <li>ii. Reef Effect, Habitat Use, and Migration</li> <li>iii. Monitoring parameters</li> </ul>	<i>Facilitated by K&amp;W</i>
5:15-5:30 pm	<b>Wrap up and Adjourn</b>	<i>Facilitated by K&amp;W</i>



**Day 3: Thursday, March 9**

8:00-8:30 am *Check-in*

**XIII. Welcome**

8:30-8:45 am a. Day 2 Recap and Overview of Day 3

*Facilitated by K&W*

8:45-10:15 am **XIV. BMPs for Baseline Monitoring**

- 8:45-10:15 am a. Panel Discussion on Monitoring for changes in Baseline Conditions
- i. What parameters should be monitored during wind farm operation?
  - ii. Visual Surveys
  - iii. Passive Acoustic Surveys
  - iv. Habitat Parameters

*Panelists/BOEM  
Facilitated by K&W*

10:15-10:30 am **XV. Vessel Traffic**

- 10:15-10:30 am a. Introduction
- b. Vessel Lanes and Strike Risk in Wind Energy Areas *(presentation followed by Panel Q&A)*
- i. Existing port traffic
  - ii. Location of offshore wind energy areas

*Desray Reeb, BOEM  
Douglas Simpson, USCG District V CIV*

10:30-10:45 am **Break**

*Facilitated by K&W*

10:45-12:00 pm **XV. Vessel Traffic** (continued)

*Facilitated by K&W*

- c. Panel Discussion: Vessel Strike Risk
- i. Risk
  - ii. Seasonal speed reduction
  - iii. Monitoring

12:00-12:30 pm **XVI. Participant Comment on all meeting topics**  
(participants should register in advance if they wish to comment)

*Facilitated by K&W*

12:30-1:30 pm ***Break for Lunch***

1:30-3:15 pm **XVII. Panelist Discussion on BMPs**

*Facilitated by K&W*

- i. Refine BMPs discussed for mitigation, monitoring, reporting, data management
- ii. Identify areas of uncertainty
- iii. Panel Members Provide Their Independent Recommendations

3:15-3:30 pm **Wrap Up and Adjourn**

*K&W*