



BOEM Bureau of
Ocean Energy Management

Ocean Environmental Monitoring in Conjunction with Pioneer Array at Mid-Atlantic Shelfbreak Offshore Wind Area

2023 OOIFB & DSC MEETINGS

9 May 2024

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BOEM Environmental Studies Program

BOEM Information Needs

Environmental Compliance Requires Effective Monitoring & Accurate Modeling

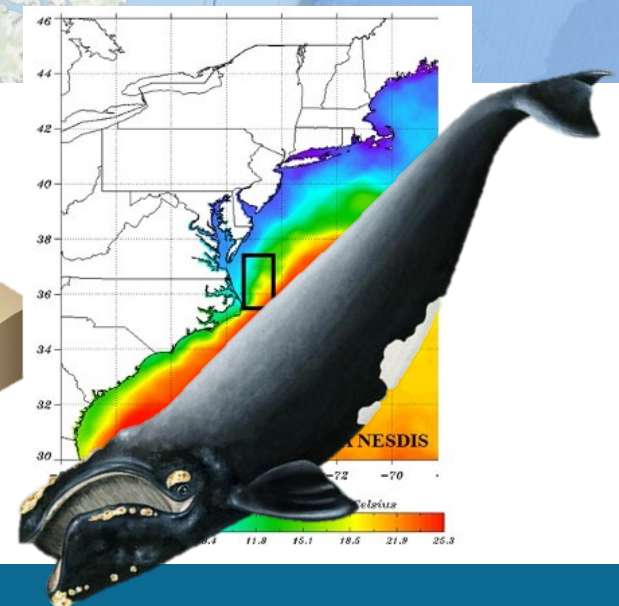
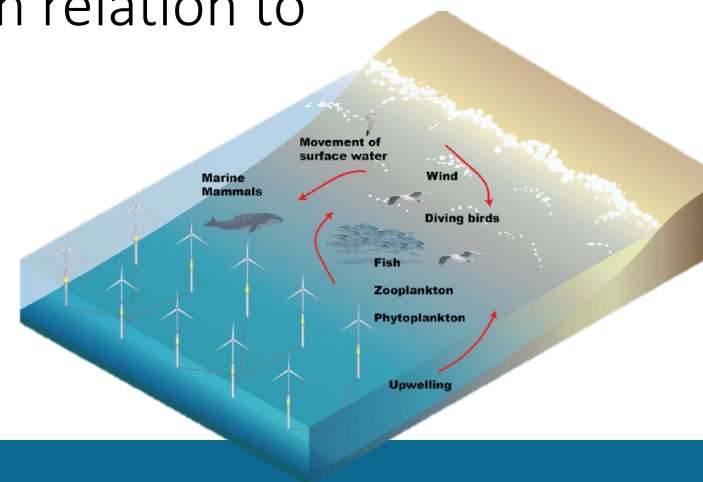
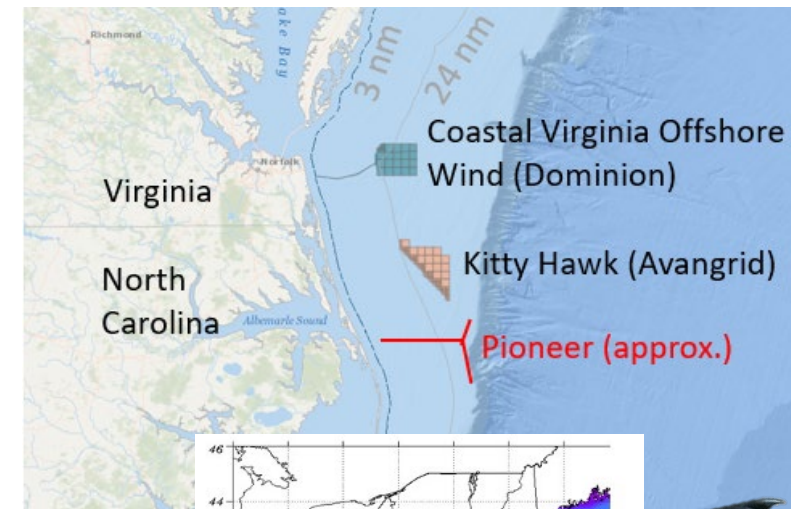
- Existing acoustic monitoring has limited value
 - Only evaluate species calls and signal/noise characteristics collected at the recording sites
 - Does not incorporate oceanographic variables, thus difficult to address broader issues such as ecological dynamics and oceanographic processes related to offshore wind development
- Existing noise impact assessments have limited accuracy
 - Uses historical environmental variables for sound propagation modeling
 - Real-time environmental fluctuations are not captured – resulting in low accuracy in ensonified impact zones



Background

Offshore Wind Environmental Monitoring in Conjunction with Ocean Observation Data

- Relocation of Pioneer Array provides opportunities for comprehensive environmental studies & monitoring at south Mid-Atlantic shelfbreak
- New location in proximity of the planned Kitty Hawk Wind Farm and Coastal Virginia Offshore Wind
- Area is also migratory corridor for North Atlantic right whales
- Acoustical oceanography studies in relation to offshore wind development
- Climate change, stratification, mixing, transport, etc.



Method

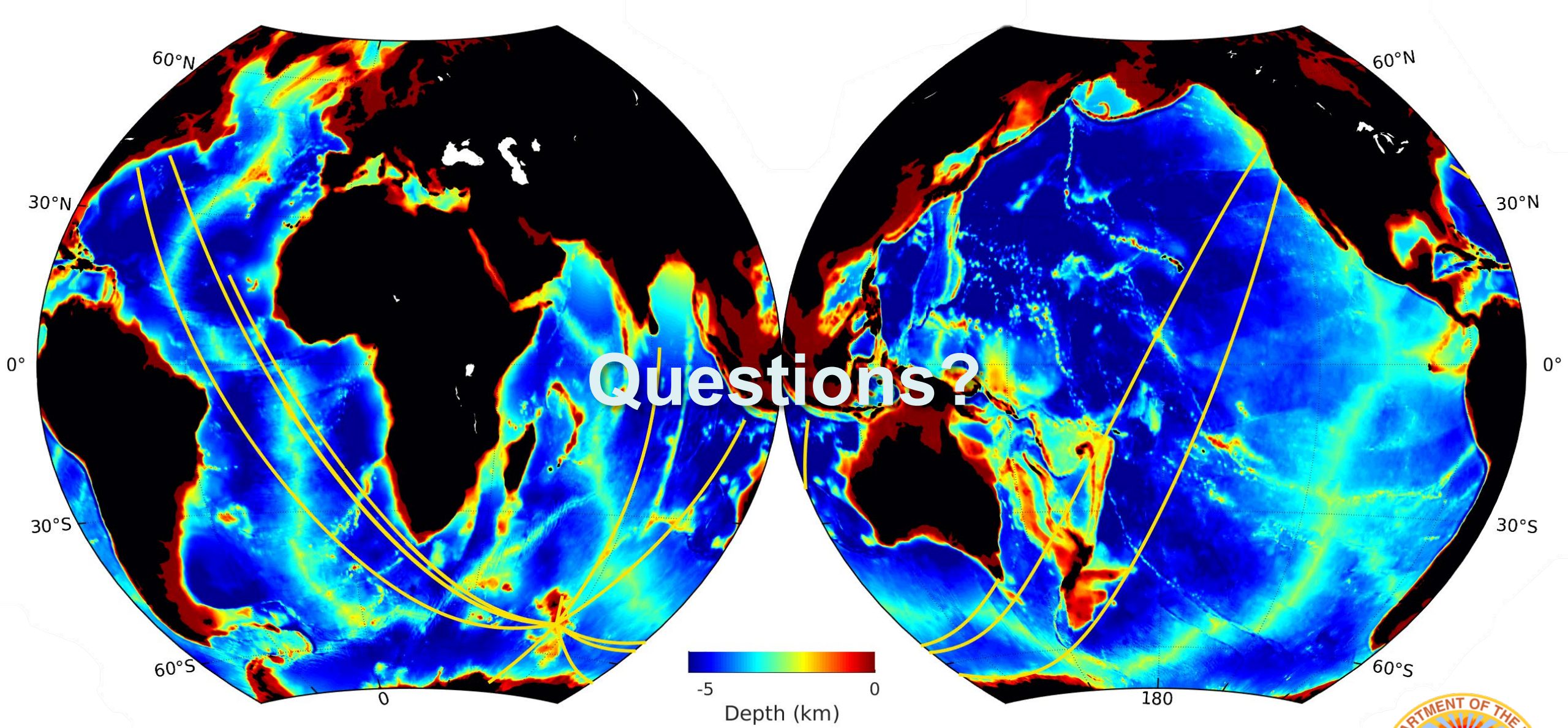
- **Deploying Stationary Acoustic Sensors at Pioneer Array Location**
 - Potential piggyback on NSF's vessel to save deployment costs
- **Collect Long-term Time Series Acoustic Datasets**
 - Bottom-mounted and/or moored acoustic sensors for passive acoustic data collection.
 - Low-intensity active source to collect sound propagation data
 - Incorporate physical oceanographic data in acoustic data analyses to understand ecosystem dynamics.
 - Analyze bioacoustic and soundscape data to understand environmental effects.



Timeline for the Proposed Study

- December 2022: Proposed as part of BOEM FY 2024 Environmental Studies Development Plan (SDP)
- March – May 2023: Internal review of the study profile
- June 2023: Public release of BOEM FY 2024 SDP
- July 2023: Presented at NASEM Committee on Environmental Science and Assessment (COSA) meeting
- October 2023: Proposal selected as part of the BOEM National Studies List to be funded in FY 2024
- 20 March 2023: NOFO published on Grants.gov (<https://www.grants.gov/search-results-detail/353074>). Application due 13 June 2024
- July 2024: Application review and selection
- After August 2024: Study begins





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