U.S. Pacific Coast floating wind development projects benefit from adapting proven Atlantic Coast benthic habitat characterization strategies, coordinating geophysical and benthic surveys, and deploying advanced technologies.

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OFFSHORE WINDPOWER

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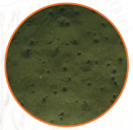
Benthic Habitat Mapping and Effects Minimization: East Coast Lessons for the West Coast

West Coast

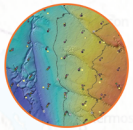
Areas of intense biological activity, such as seeps, whale falls, and deepwater corals, are present along with outcroppings and continental margins along cable routes.

Geoforms present may reflect stable conditions or ongoing dynamic processes, in addition to seismic event-driven disruptions.



Current national guidance applies to projects on the West Coast. Additional guidance is anticipated as site assessment matures for floating installations and deepwater environments.

Existing benthic features will require detailed examination and characterization to minimize impacts on essential fish habitat and habitats of interest.



Remotely Operated Vehicle and Autonomous Underwater Vehicle technology can increase geophysical data resolution. Imagery, such as sediment profile and plan view imaging (SPI–PV) and georeferenced video, provides simplicity in deployment and recovery operations to reduce data loss in deepwater environments.

Takeaways

Benthic Habitats of Interest

In addition to broad surficial sediment characterization, additional detail will be required to delineate geohazards, benthic features, and areas of locally elevated biological activity less common on shelf ecosystems.

Geologic Features and Processes

Geological features may reflect historical conditions and events, but not active processes.

Permitting Timelines and Regulatory Guidance

The current timelines for projects on the west coast allow for optimized solutions that incorporate geophysical surveys and targeted benthic investigations. Pacific-specific guidance may evolve as investigations continue.

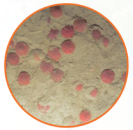
Survey Design, Geophysical Data, and Direct Sampling

Integrated survey designs for geophysical and benthic data collection increase both efficiency of operations and provide reliable baseline data collection. This reduces regulatory risk of permitting delays or additional, late-stage data collection.

Advances in Technology and Sampling Equipment

Technologies that increase the efficiency of deepwater deployments will allow for more efficient and effective sampling at the depths required for West Coast lease areas.

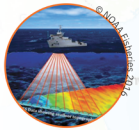
East Coast



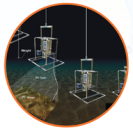
Isolated features and dynamic broad features. A mix of complex and heterogenous habitat types.

Mobile sediments with interspersed hard substrates (boulders, cobbles). Dynamic physical processes that actively alter habitats.

Projects at various stages of maturity, some with intense timing constraints. Continued updates to habitat characterization guidance (BOEM 2019, NMFS 2021, BOEM 2023).



Initial benthic surveys have often been designed prior to review of geophysical data or in areas where significant data gaps exist.



Initial benthic surveys followed early BOEM guidance for geophysical and benthic sampling. Guidance developed by NMFS, NYSERDA, RWSC, ROSA, and RODA standardized monitoring protocols for existing technologies and data management systems.

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