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AB 525 Strategic Plan

Potential Impacts to Marine Resources

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California's Coast and Ocean

Photo credit: Zack Gold

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Habitat Disturbance

Seafloor disturbance is expected from anchoring and mooring of turbines, transmission cables, surveys, and potentially siting substations. Nearshore habitats may also be impacted by cables connecting to onshore infrastructure.

Strategies for addressing impacts include:

- Additional research to guide project design
- Buffers to protect sensitive habitats
- Mooring and cable designs and placements that minimize impacts to the seafloor

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Bird and Bat Strikes

Seabirds and bats may be impacted through collision with turbines.

Strike risk will vary based on:

- Bird and bat density and seasonality
- Flight heights
- Turbine speed
- Visual conditions
- Behavior

Strategies for addressing impacts include:

- Additional research on bird and bat behavior
- Seasonal restrictions on operations

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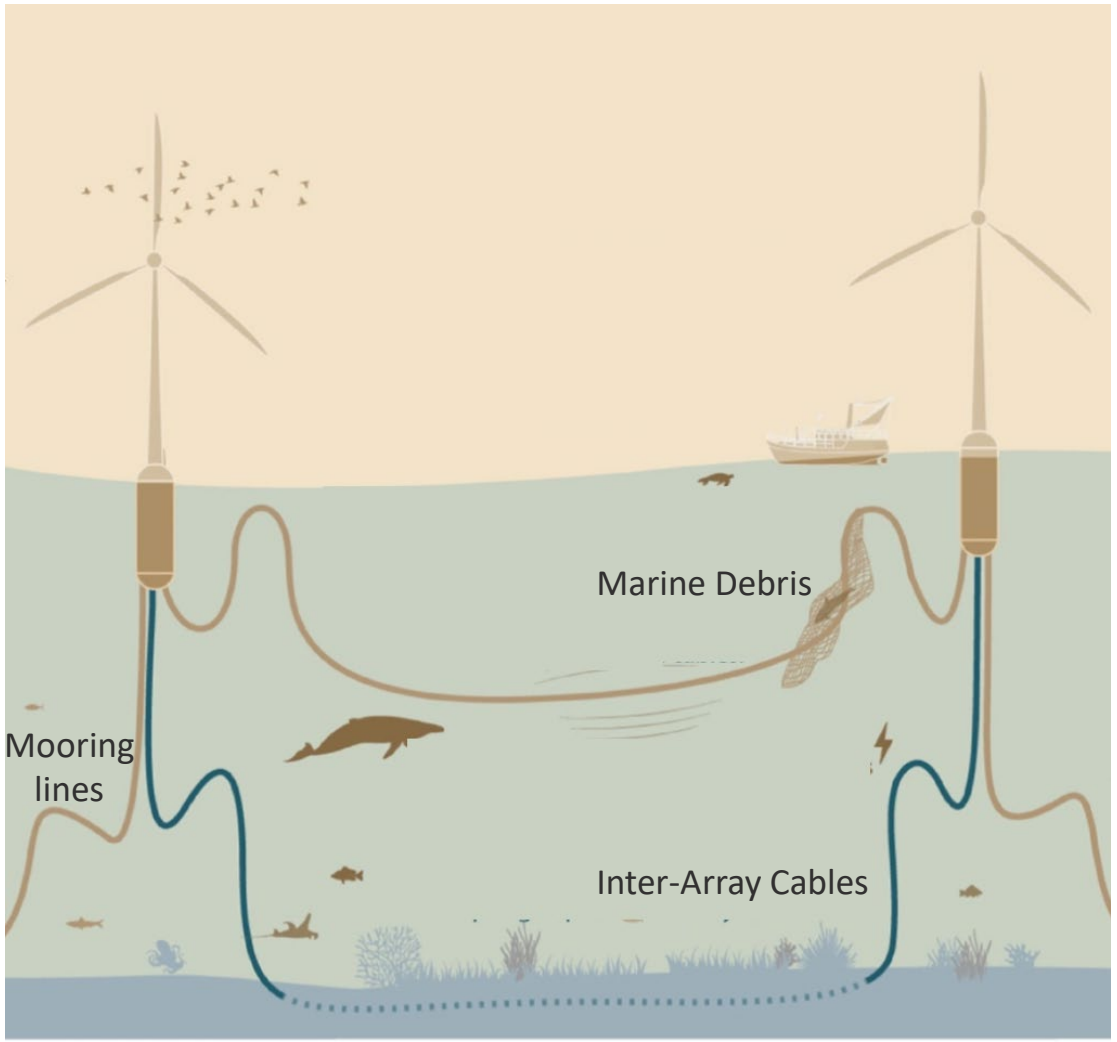
Entanglement

Mooring lines and inter-array cables have the potential to increase entanglement risk for marine mammals.

- Risk from primary entanglement is low
- Greater risk from secondary entanglement caused by fishing gear and debris caught in cables and mooring lines

Strategies to address impacts include:

- Using equipment with censors to detect snagged debris
- Requiring developers to perform regular maintenance



Source: Maxwell et al. 2023

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Underwater Noise

Underwater noise from pre-construction, construction and ongoing operation may impact bird, marine mammal, and fish behavior.

Strategies to address impacts include:

- Low-energy geophysical surveys
- Seasonal restrictions on construction
- Survey ramp up
- Protected species observers
- Quieting technologies

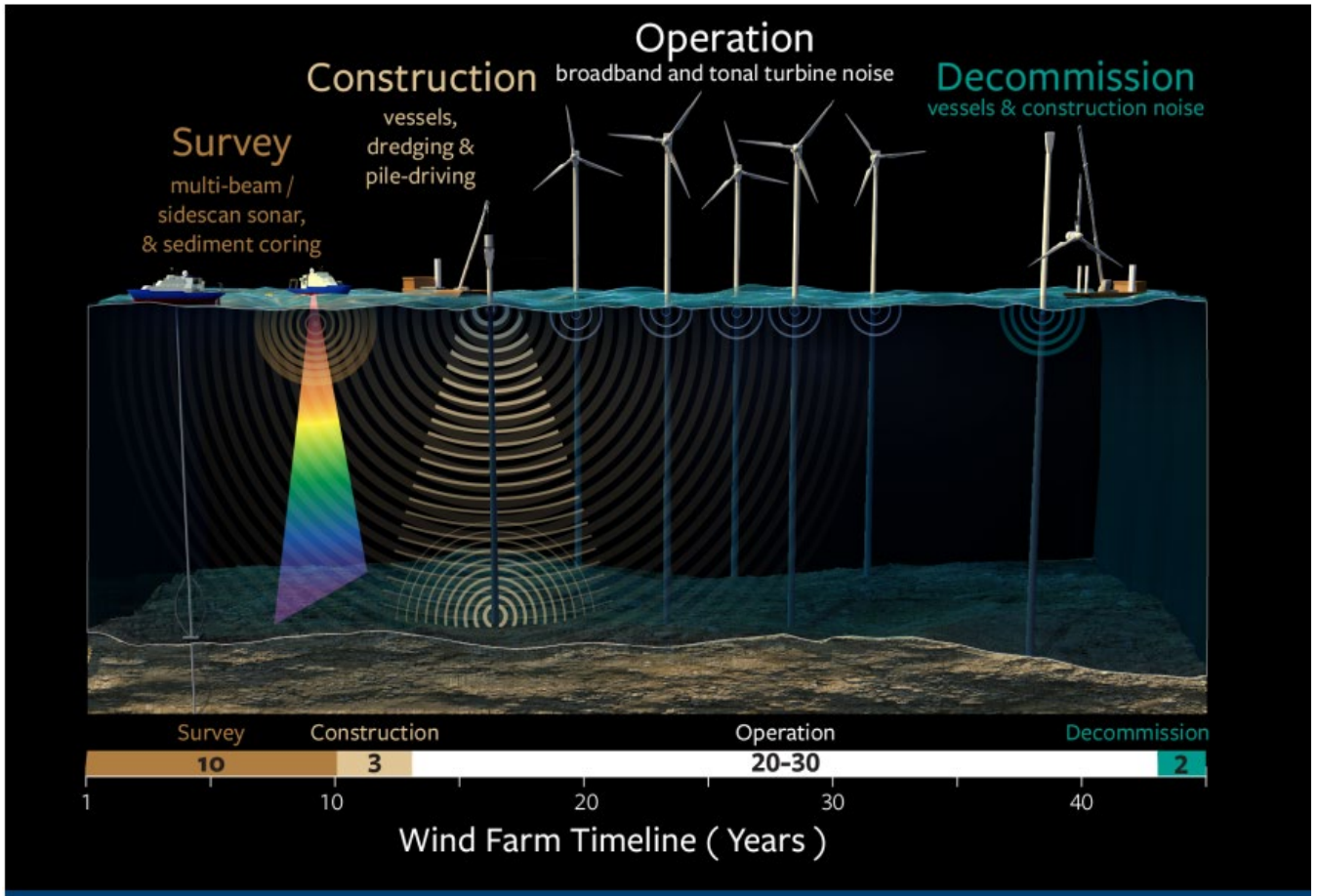

Figure 2. *Underwater noise associated with the life cycle of an OSW farm area, including during site surveys, construction, operations and maintenance, and decommissioning. Illustration from Mooney et al. (2020).*

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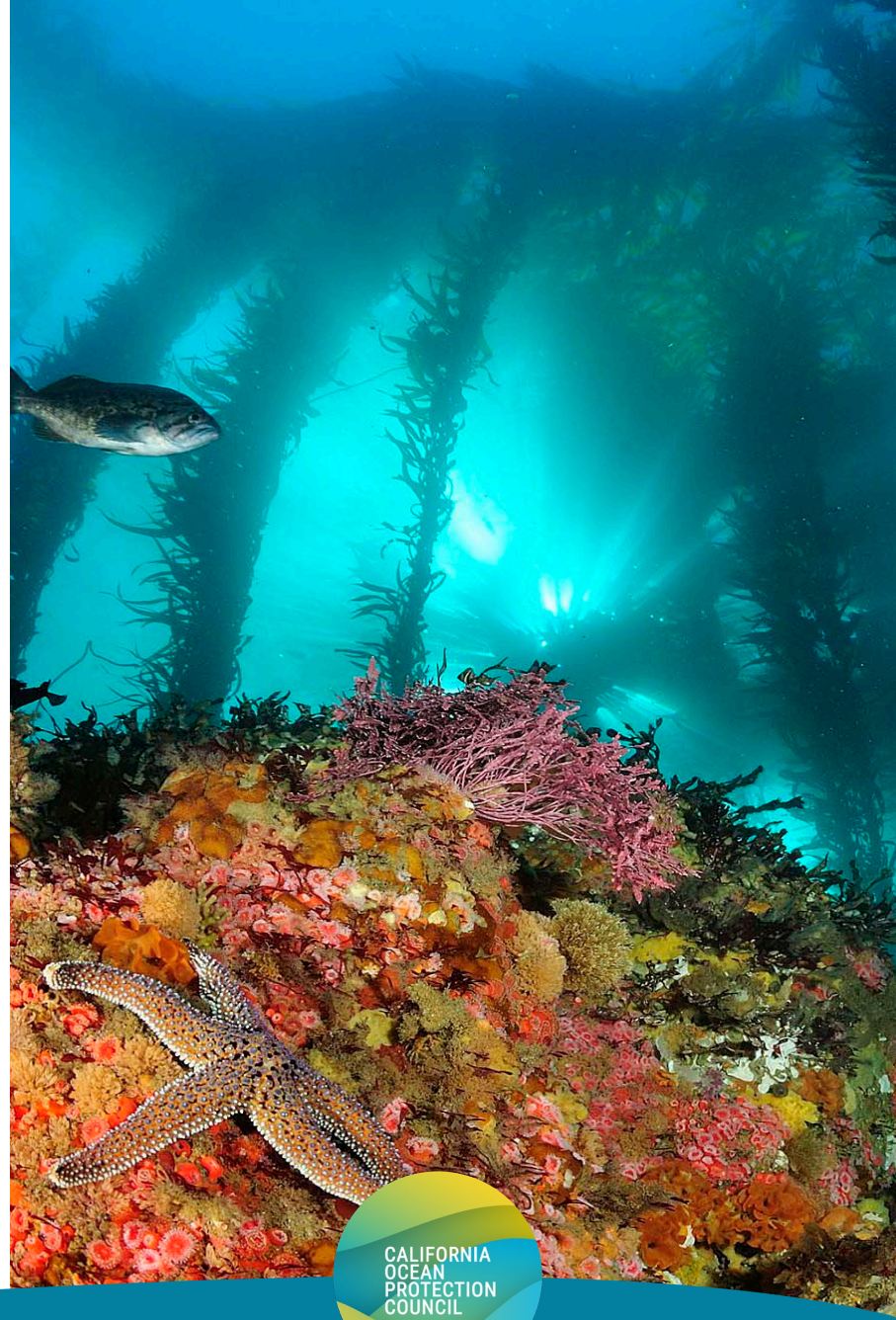
Displacement, Avoidance, Attraction

Offshore wind infrastructure will alter benthic and pelagic habitats and may cause behavioral changes in species that disrupt foraging and breeding, among other impacts.

Strategies to address impacts include:

- Baseline and ongoing monitoring
- Adaptive design measures



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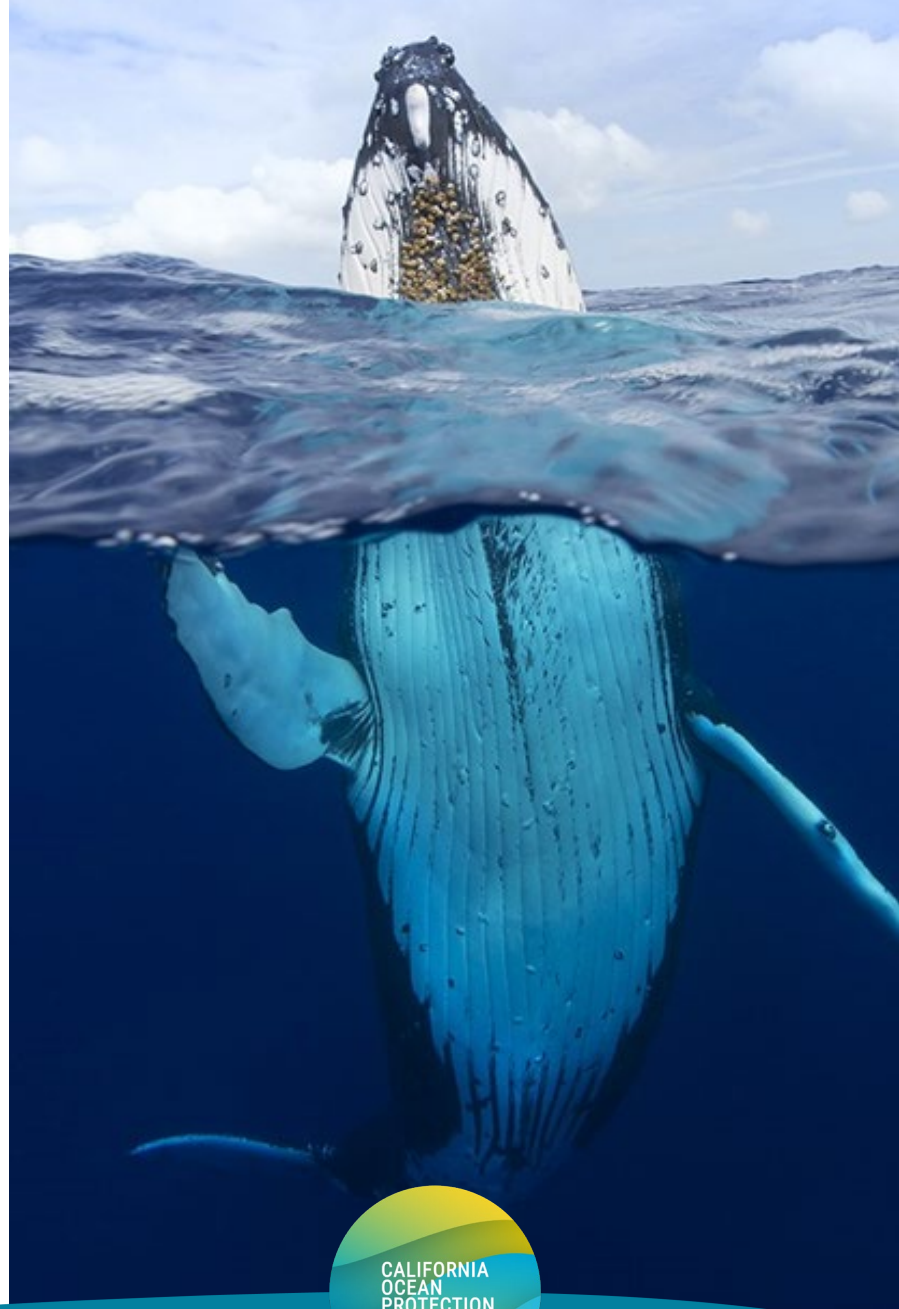
Ship Strikes

Increased vessel traffic through all phases of offshore wind development has the potential to increase whale and sea turtle injury or mortality from ship strikes.

Strategies to address impacts include:

- Reducing ship speeds to 10 knots and below
- Protected species observers



Oil Spills and Invasive Species

Increased vessel traffic can increase the potential for oil spills.

Strategies to reduce risk of oil spills include:

- Spill prevention and response measures
- Vessel operations and control plans

Mooring lines, anchor chains, ship ballast and hull fouling can be vectors for invasive species.

Strategies to address impacts include:

- Antifouling coatings
- Appropriate management of vessel ballast water

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Changes in Upwelling

Installation and operation of turbines could affect wind-driven upwelling by decreasing wind speeds at the sea surface, with potential impacts to ecosystem health and function.

Strategies to address impacts include:

- Ongoing monitoring
- Additional research on the impact of upwelling changes on primary production and ecosystem dynamics

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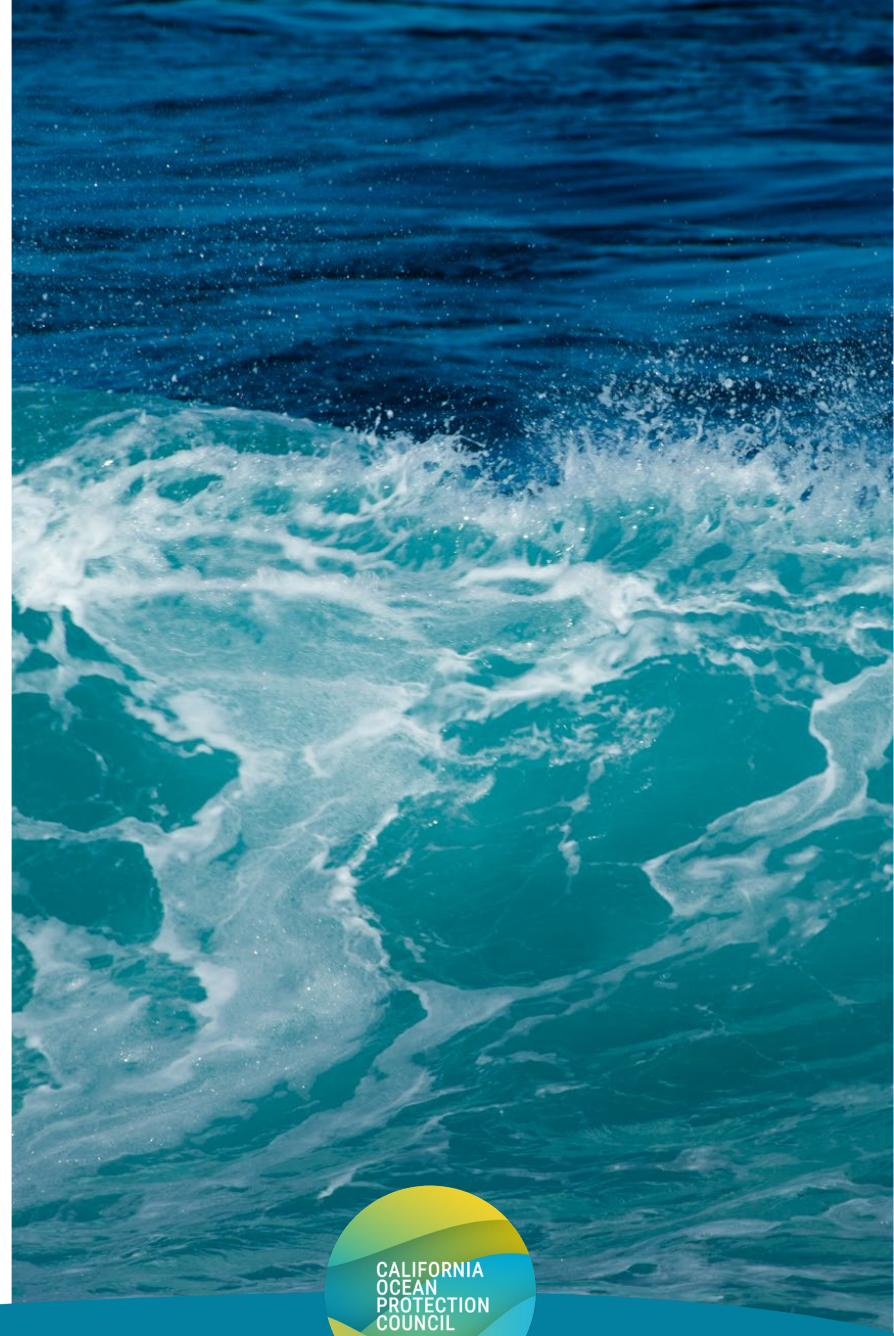
Electromagnetic Fields

Transmission of electricity through cables will produce electromagnetic fields that may impact navigation and behavior of marine species.

Strategies to address impacts include:

- Further study on possible impacts
- Consolidating cable routes to shore
- Burying cables
- Surveys to ensure cables remain buried/appropriately sited



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Impacts from Port Development

Port development has the potential to displace or destroy nearshore habitats and impact marine species through construction and operation activities.

Strategies to address impacts include:

- Vessel and site-specific spill prevention plans
- Concentrating vessel traffic in industrial areas
- Planning port development in partnership with communities

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Monitoring and Adaptive Management

Comprehensive monitoring and adaptive management are critical to protect marine ecosystems, given the high degree of uncertainty around the scope and scale of impacts.

Environmental Monitoring Guidance

- Marine mammals and sea turtles
- Birds and bats
- Fish ecology
- Habitats and ecosystems
- Data integration and sharing
- Monitoring technology
- Climate change

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Recommendations

- Support comprehensive environmental research and monitoring using best available science, including traditional ecological knowledge.
- Continue promoting coordination and collaboration among lessees to minimize environmental impacts.
- Develop a comprehensive mitigation framework and adaptive management strategies.

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