Adrift in the California Current:

Clustered drifting recorders describe spatial variation in soundscapes and marine mammal presence within offshore wind energy areas along the US West Coast

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BACKGROUND:

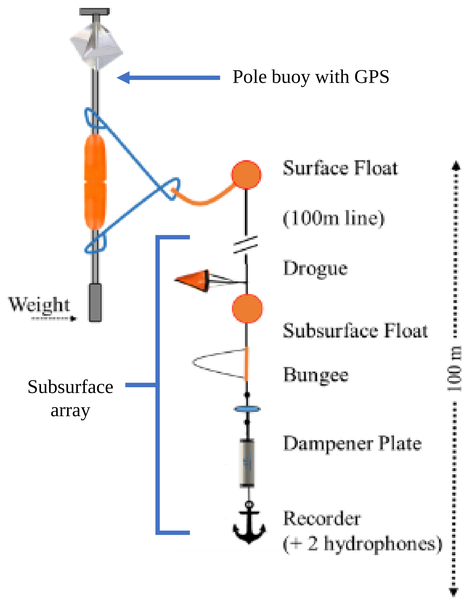
Baseline data on marine ecosystems is needed to inform the planning and management of proposed offshore wind energy areas along the US West Coast. However, there is scarce historical data on the seasonal presence of protected species and overall sound levels in these regions due to the expense and challenges of surveying offshore wind energy areas.

METHODS

All field and analysis methods freely available: https://github.com/SAEL-SWFSC

1. Collect passive acoustic recordings using clusters of 4-8 drifting buoys in Oregon, Humboldt, and Morro Bay wind energy areas
2. Describe seasonal and spatial variation in soundscapes and presence of 17 cetacean species including:
   - Baleen whales
     - blue, fin, gray, humpback, minke, Sei, Bryde's
   - Dolphins
     - Risso's, Pacific white-sided, unidentified
   - Beaked whales
     - Cuvier's, Baird's, Hubbs', Stejneger's, BW43, BWC
   - NBHF
     - Kogia spp., Dall's & harbor porpoise

Diagram of a drifter



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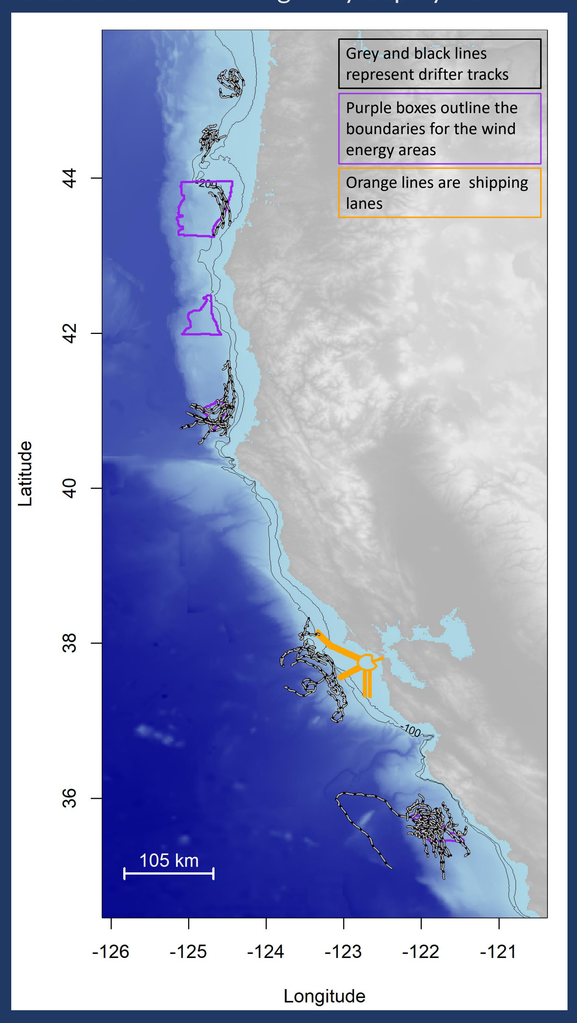
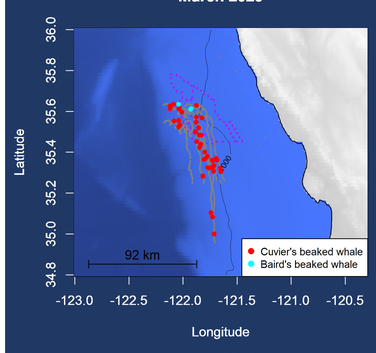
Clustered drifting recorders describe spatial variation in **soundscapes & habitat use**.

2021-2023: 90 drifting buoy deployments



Seasonal Acoustic Scenes

March 2023



July 2023

November 2023

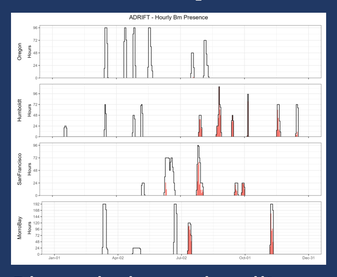
Beaked whale presence: Morro Bay wind energy area

Collaborative cruises leverage resources & build community

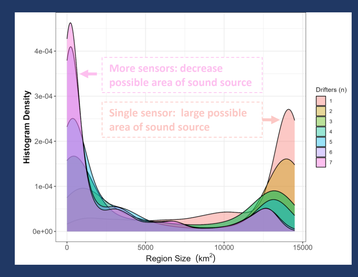
Clustered deployments complement long-term stationary moorings

- Beaked whale density estimation
- Species habitat models
- Validate sound propagation models

Blue whale presence



Blue whale peak calling period in WEAs during post-upwelling, consistent with seafloor studies in other regions



Baleen whale localization accuracy improves with more sensors in the cluster

Take a picture to contact me about the project