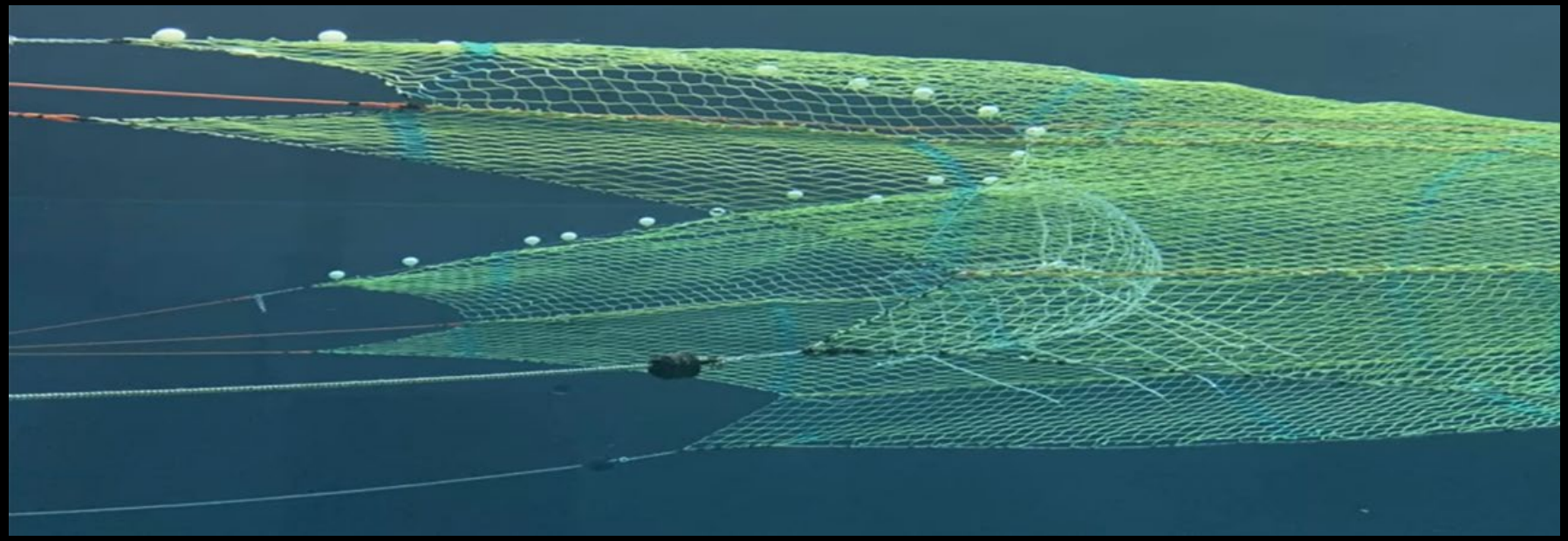
Amendment 80 Update on Killer Whale Gear Modification and Research

Sarah Webster and John Gauvin

October 2024

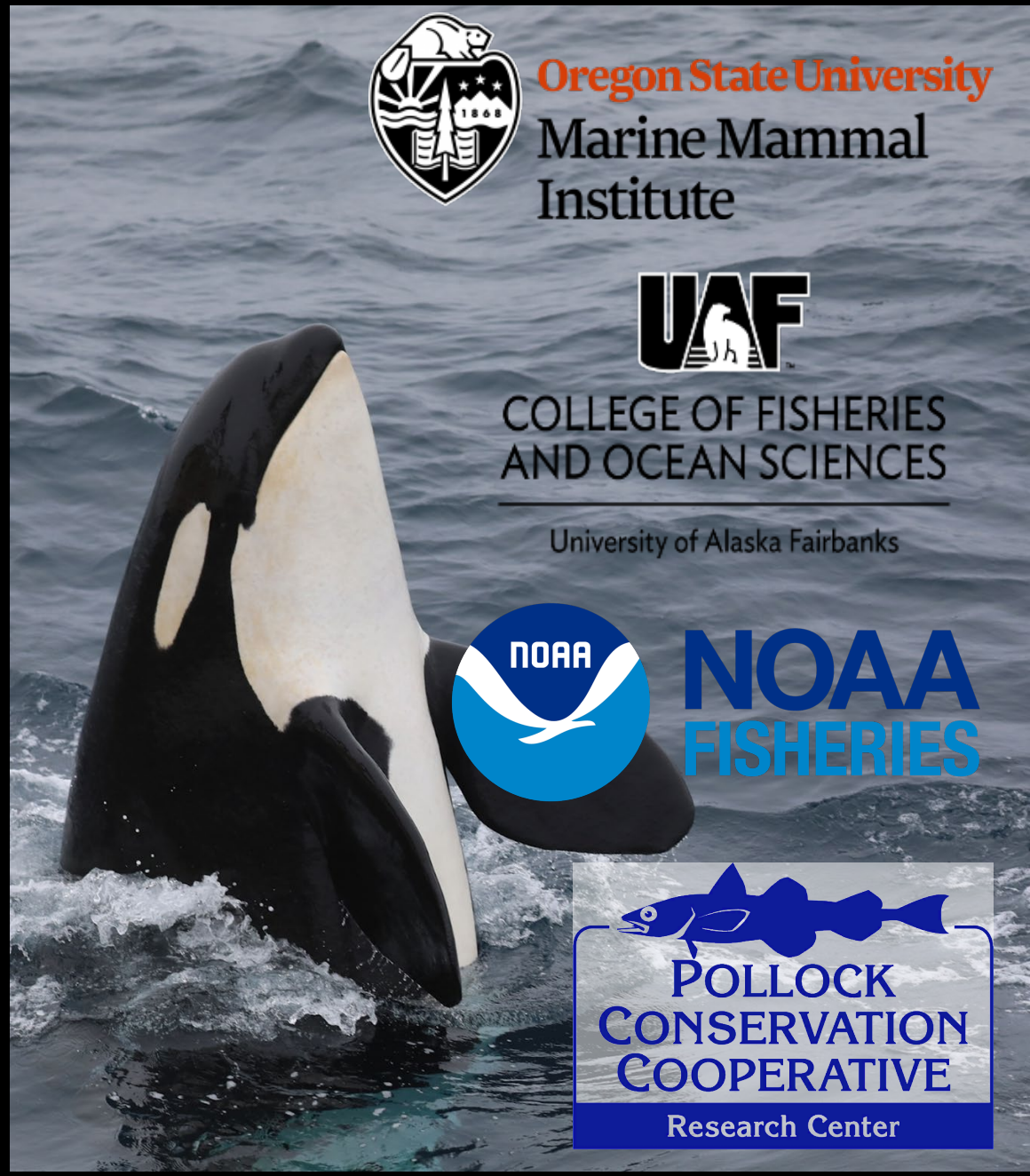


Collaborators

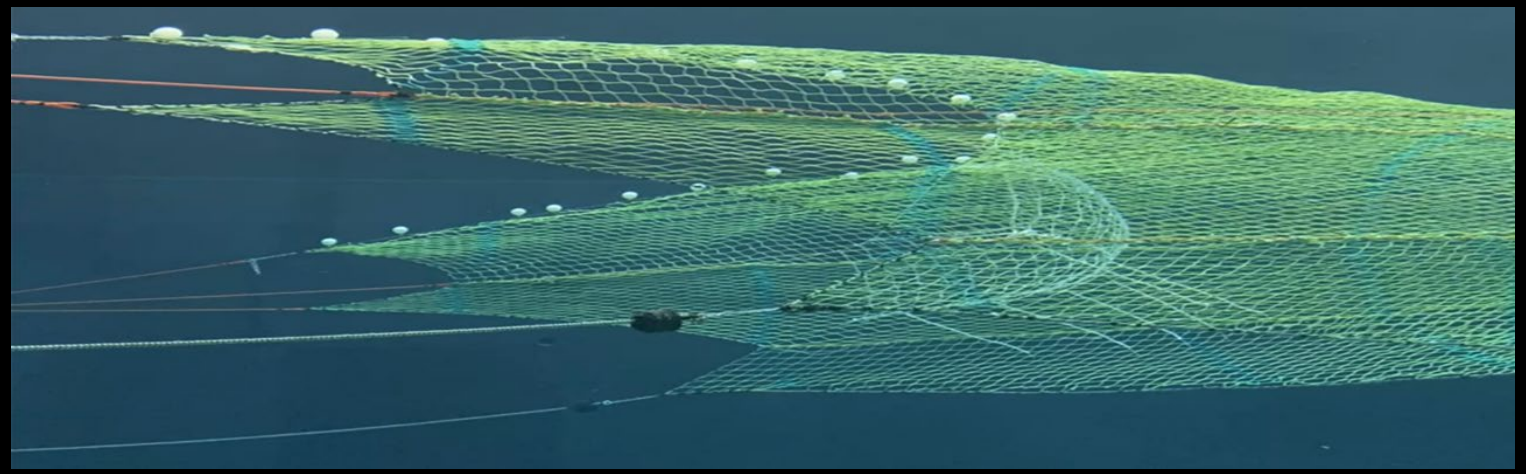
- Dr. Hannah Myers – Oregon State University and University of Alaska Fairbanks
- Poul Pedersen - DanTrawl
- Captains and crew of Amendment 80 vessels
- Beth Concepcion
- Jason Mulsow (Navy) and National Marine Mammal Foundation
- Stacey Hansen, Brennan Barringer, Alyssa Lopez – Saltwater, Inc.
- Paul Winger and staff at the Marine Institute of Memorial University

Funding

- NOAA Fisheries Alaska Regional Office Protected Resources Division
- Pollock Conservation Cooperative Research Center
- Amendment 80 Companies



Gear Modification – Killer Whale “Fence”



- Original concept developed by A80 Captain in 2023
- 2024 gear modification refined through collaborative effort at flume tank
  - Covers a more substantial portion of the net entrance
  - Moved ahead of the footrope
  - Designed to allow passage of target catch and avoid snagging on marine debris
  - Uses Eurostone webbing due to the echoreflective properties
  - Incorporates leadlines to expand coverage during setting and haulback
- Required for all vessels fishing in Bering Sea Deep Water Flatfish Fishery in 2024 by cooperative agreement

2024 Deep Water Flatfish Fishery Gear Modification Performance

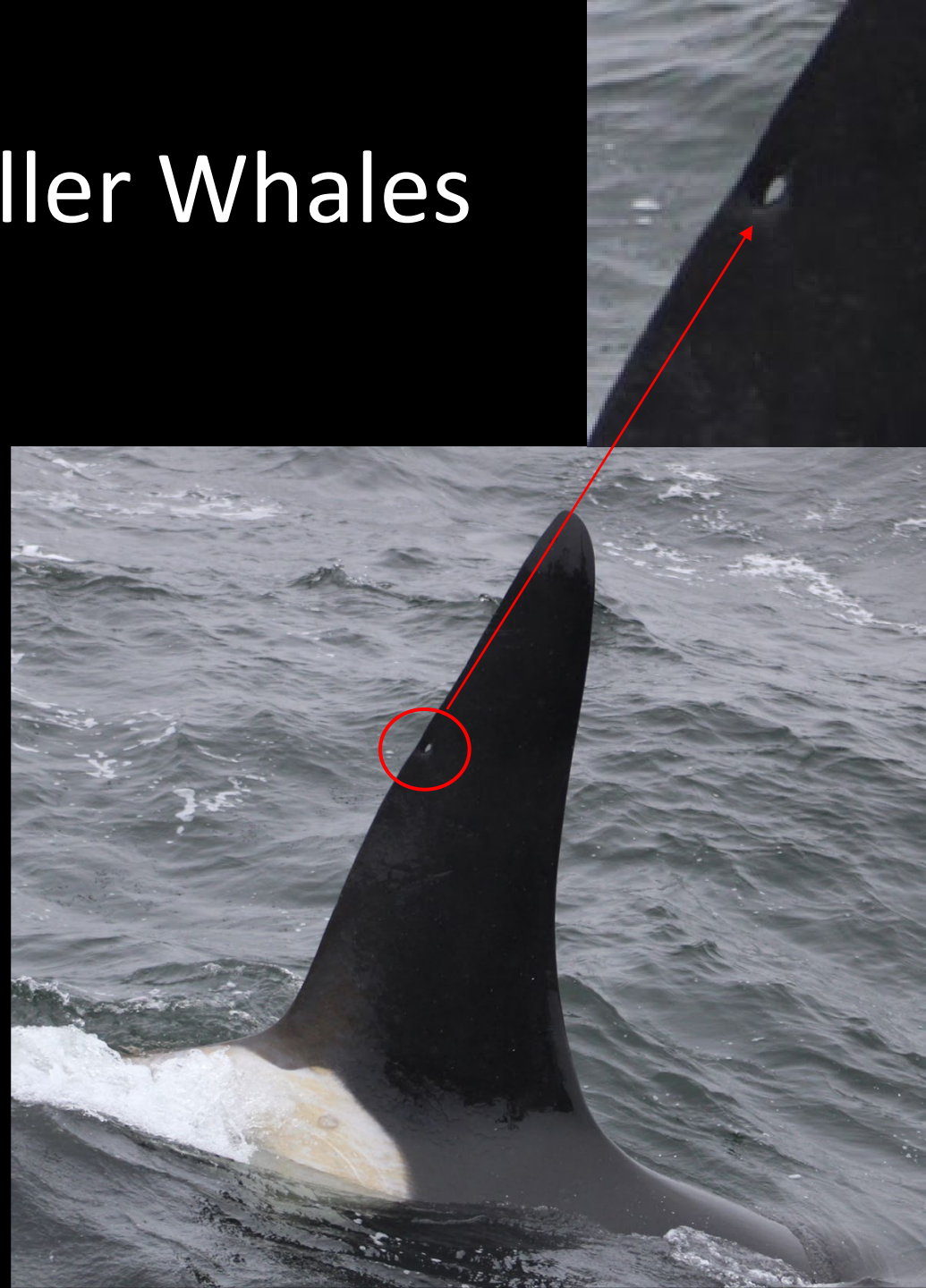
- Similar effort and catch relative to recent years
- Minimal issues with use of fence:
  - Generally good shape and placement
  - No substantial damage, low incidence of minor damage
  - No substantial issues with derelict pots
- Gear modification worked in a wide range of fishery and environmental conditions

2024 Deep Water Flatfish Fishery Gear Modification Performance

- 1 Killer Whale take in 2024
  - ~89% reduction in takes from 2023 to 2024
  - Fence rigging was adapted to trawl net design that was different from tested models
- Testing on a wider range of trawl net designs to occur in early 2025

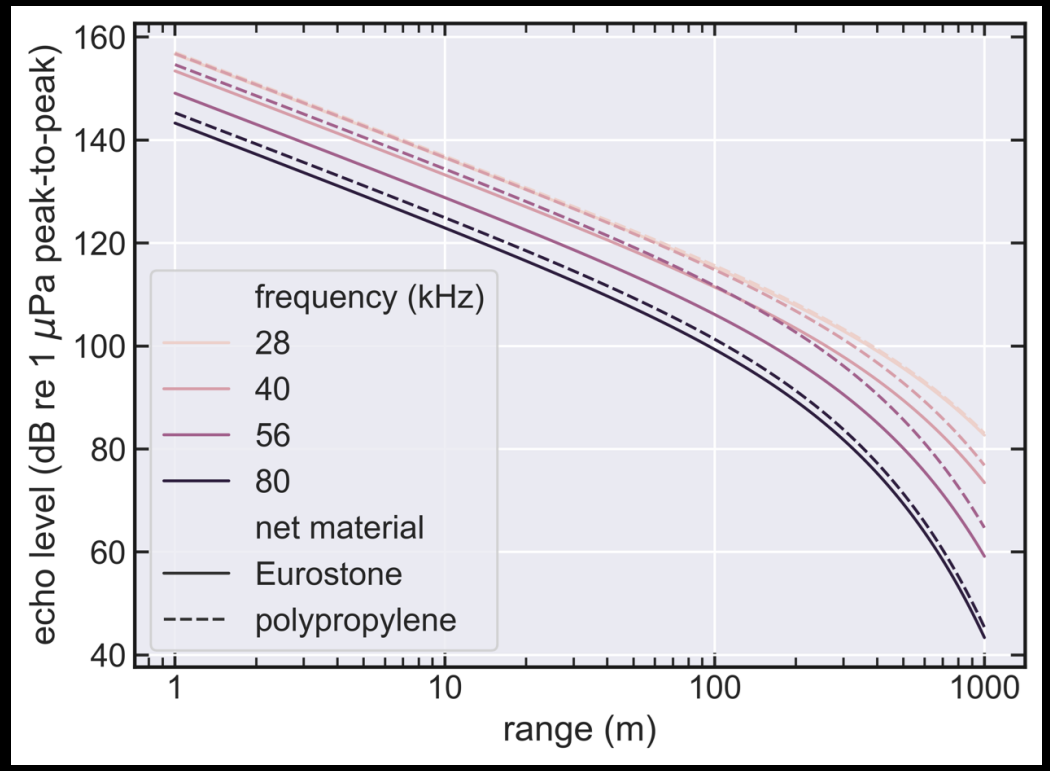
2024 Research Updates – Killer Whales

- Sea samplers or project staff were deployed on 7 trips in 2024
  - Acoustic (hydrophones)
  - Photo-ID
  - Field notes (behavior, position, estimated number of animals)
  - Species catch composition
  - Mean depth of tows
- Hydrophone and Photo ID processing is underway
- Whales were present throughout the range of the fishery
- Several individuals were seen across multiple trips, vessels, and years
- Whale sounds were detected on both headrope and codend hydrophones



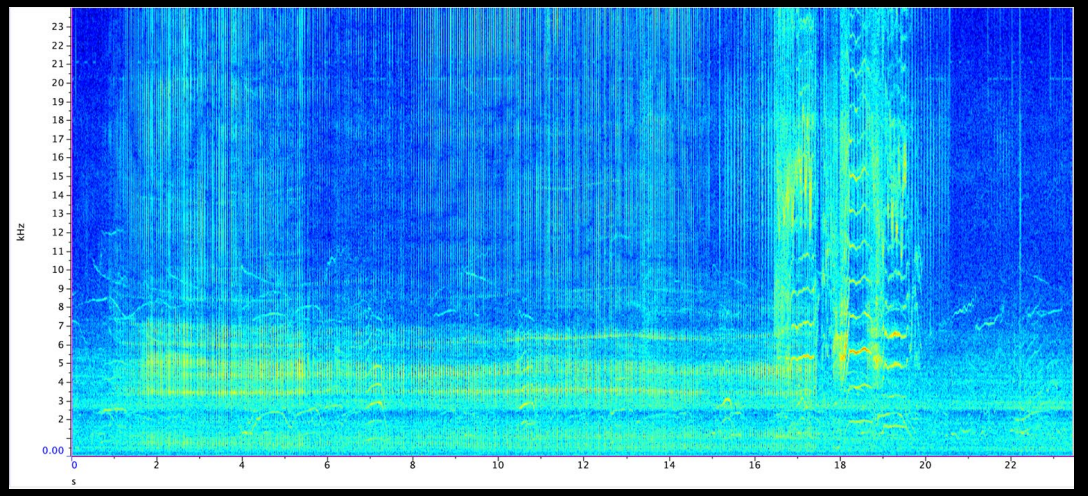
2024 Research Updates – Gear Modification

- Materials were tested for echoreflective properties at specific Killer Whale frequencies
- All materials were echoreflective
  - Polypropylene was the most echoreflective of all materials
    - Similar results for Eurostone
  - Killer whales can detect the gear modification from ~30 meters away
- Testing additional material configurations at flume tank in early 2025



Additional work for 2024 and 2025

- Return to flume tank in March 2025
  - Evaluate fence rigging in more trawl nets
  - Evaluate materials
  - Additional protections
- 2025 field season and data analysis
  - Where are killer whales positioned around the net?
  - Is foraging activity associated with catch composition or depth?
  - How many animals are involved?



Questions?

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