



H.T. HARVEY & ASSOCIATES  
Ecological Consultants

Agenda Item F.1.c

Supplemental Public Comment (Electronic Only)

September 2015



# Coast Seafoods Proposed Expansion in Humboldt Bay, California

Potential Impacts, Monitoring, and Mitigation

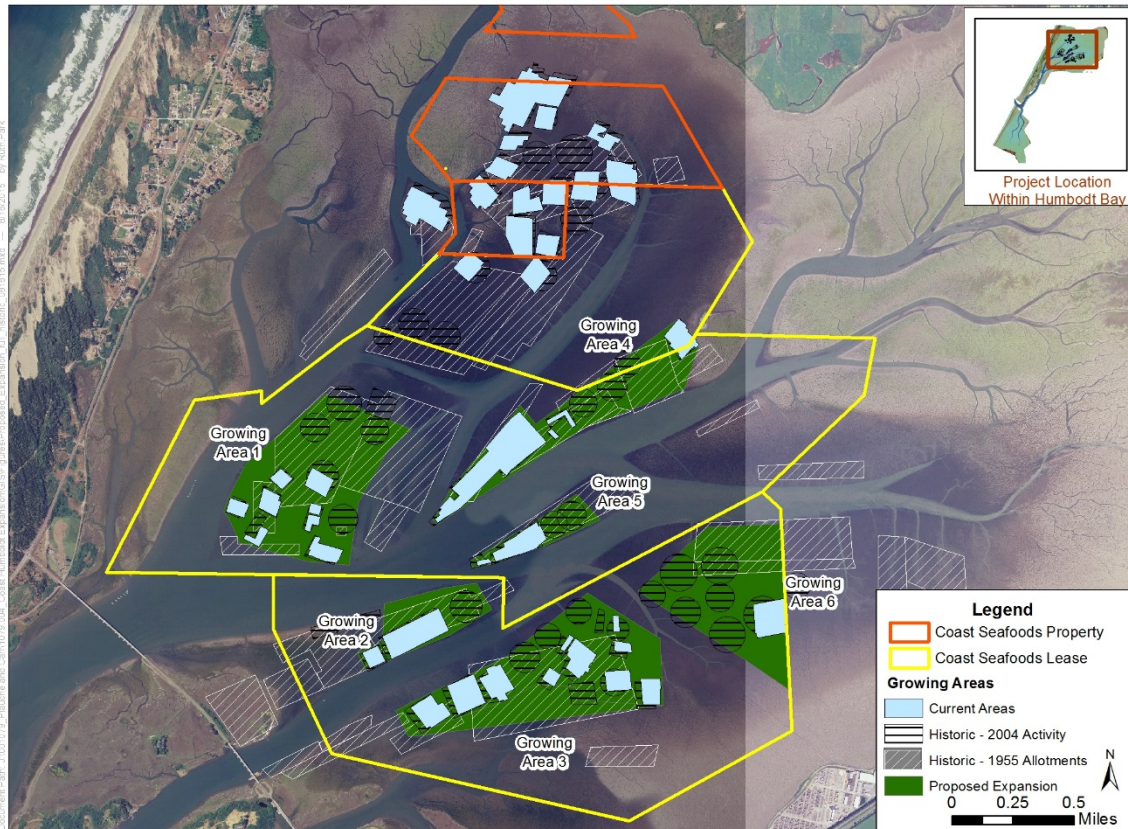
September 11, 2015

# Outline

- Key Project Revisions
- Eelgrass Impacts
- Fish Impacts



# Project Description



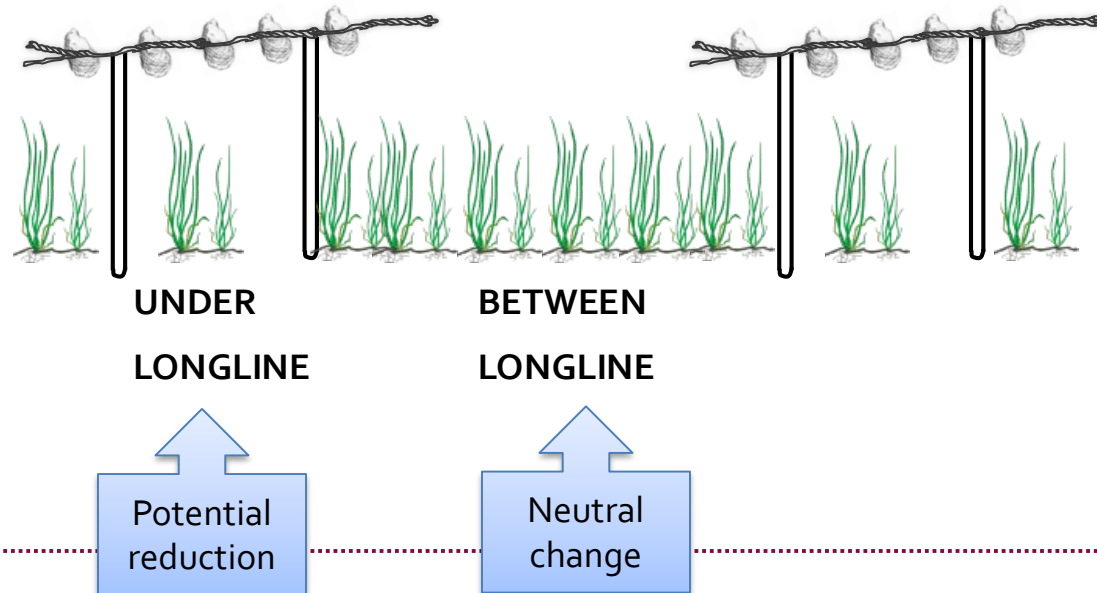
- Proposed Project
  - Existing Culture: 294.5 acres (removes 5.5 acres)
  - Expansion: 622 acres
- Proposed Culture Methods
  - Primarily (84%) includes cultch-on-longline operations
  - Remaining (16%) includes basket-on-longline and rack-and-bag culture
  - No rack-and-bag culture would be placed within 10 feet of existing eelgrass beds

# Project Description: Key Changes

- Longlines in expansion area (cultch and basket) will be at 5 ft intervals consistent with Rumrill (2015).
    - “Eelgrass beds and commercial oyster cultivation can coexist in Humboldt Bay, and that implementation of best management practices that include reduced density of oysters (i.e., oyster culture at 5 ft and 10 ft spacing between the longlines) may aid in the conservation of eelgrass communities.” – Rumrill (2015)
  - Despite analysis that concludes the project will not result in a loss of eelgrass function, Coast is proposing a combination of in-kind and out-of-kind mitigation using a watershed approach to account for reduction in eelgrass density.
  - Coast is coordinating the most comprehensive eelgrass survey in Humboldt Bay to-date, with two years of pre-project and two years of post-project monitoring. Monitoring plan designed to meet CEMP standards.
  - First privately funded EIR for a commercial shellfish aquaculture project in California – much more detailed environmental analysis.
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# Project Eelgrass Effects

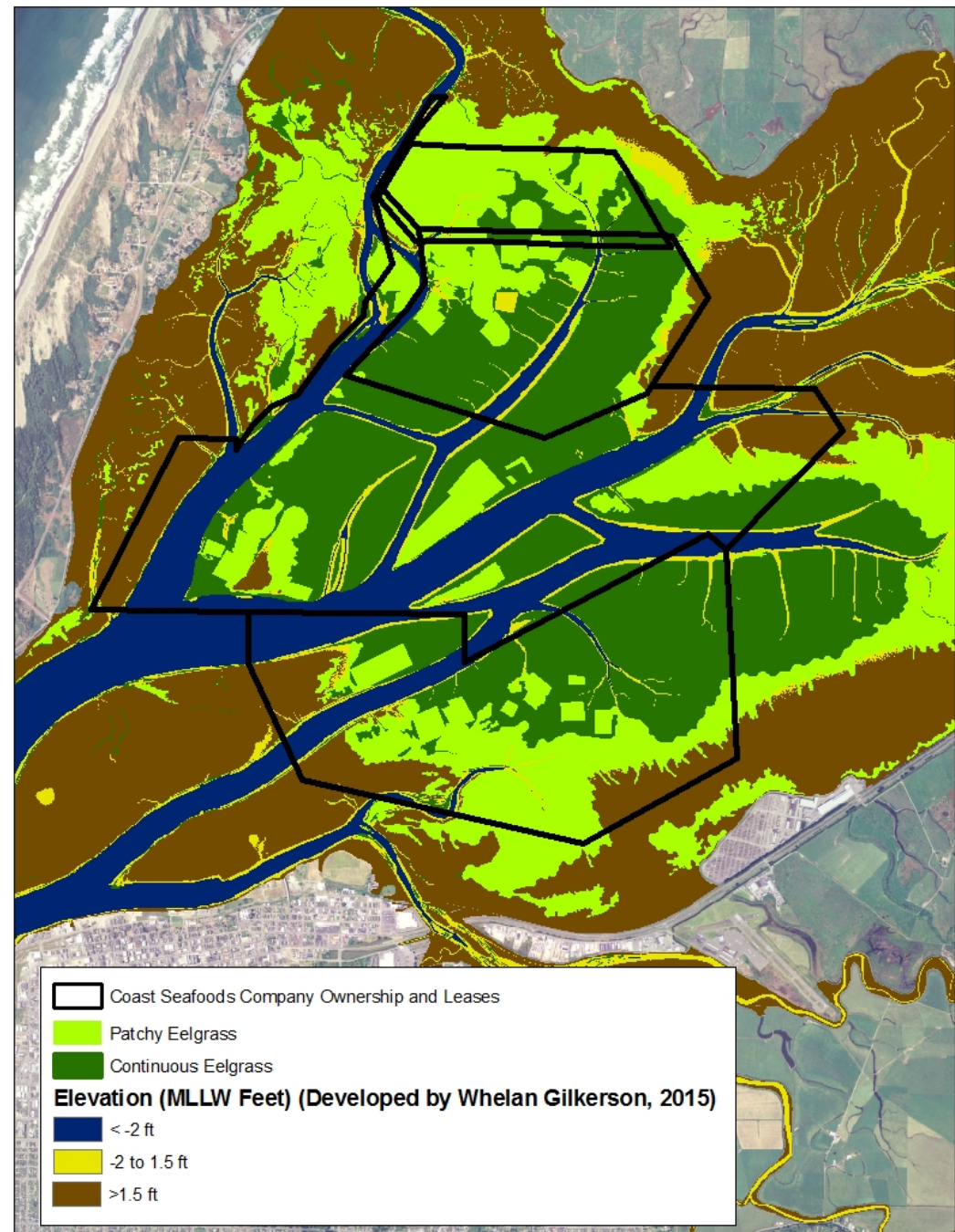
- Eelgrass is extensive, consistently present, and currently at historically high levels in Humboldt Bay (approx. 4,000 acres in 2009)
- No expected change to eelgrass bed areal extent – to be confirmed through monitoring
- Estimated reduction of 5% eelgrass density in culture areas
- Based on CEMP, reduction in eelgrass density is not likely to result in loss of eelgrass function



# Location of Aquaculture and Eelgrass

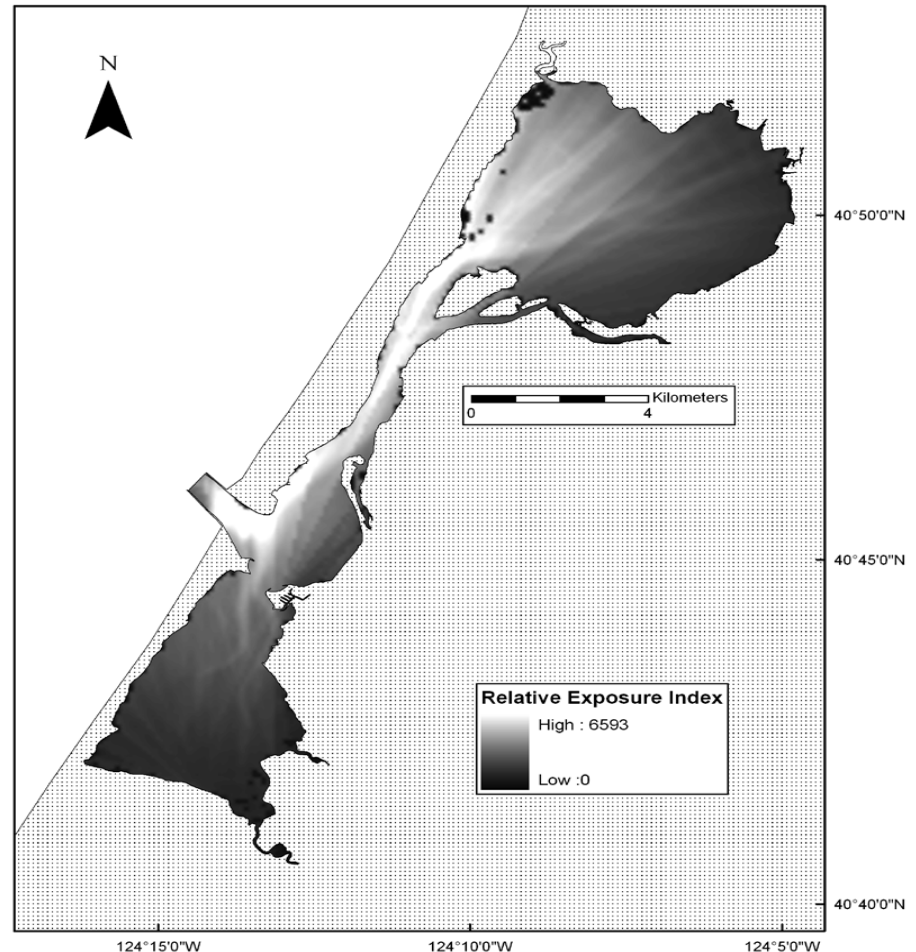
Very little area is available at an elevation of -2 to 1.5 feet that is not already occupied by eelgrass

Elevation Study indicates lower oyster weight and productivity at higher elevations (1.5 – 2.0 ft MLLW)

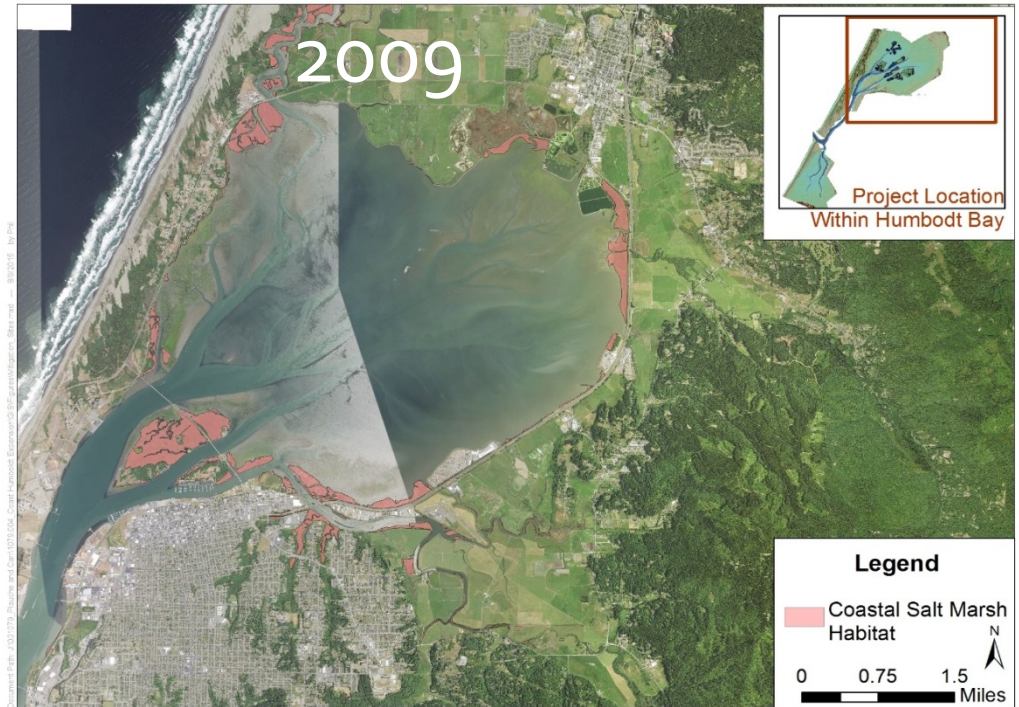


# In-Kind Mitigation Options: Buoy-Deployed Seeding System

- Location
  - Humboldt Bay, North Bay
- Habitat
  - Former dredge harvest locations
  - Patchy eelgrass habitat
  - Locations that show signs of wind/wave disturbance
- Potential Partners
  - Humboldt Bay Harbor District
  - Humboldt State University
  - San Francisco State University
- Total Acreage
  - 1 to 5 acres



# Mitigation Options: Watershed Approach



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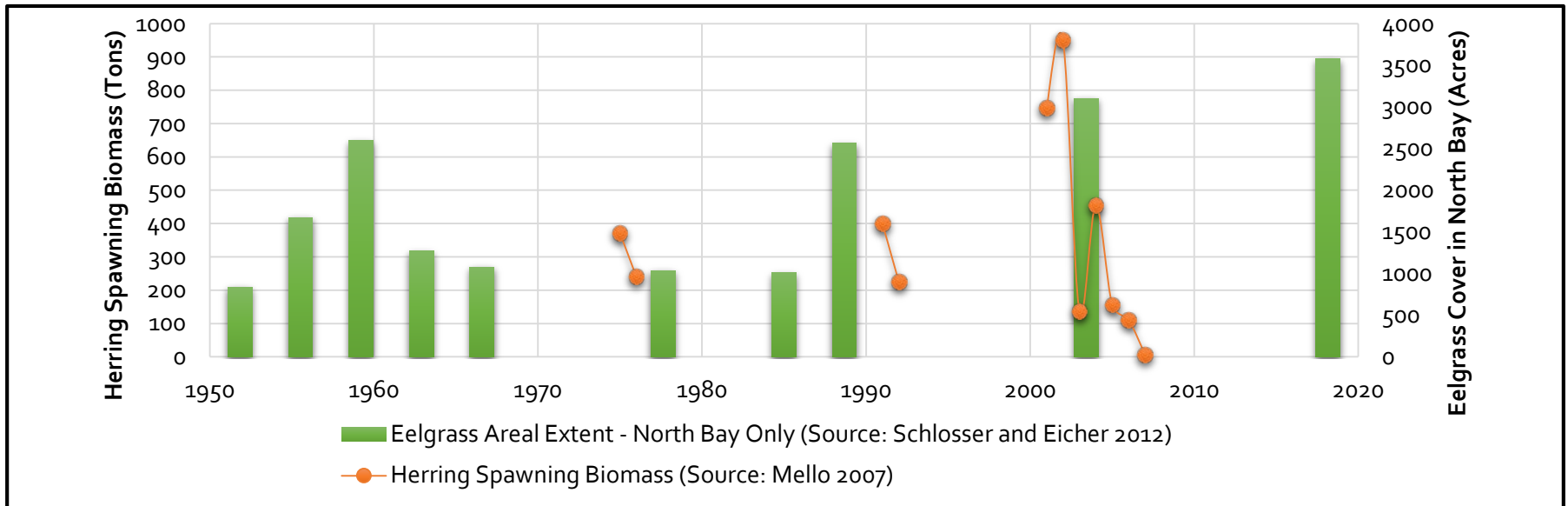


# Mitigation Options: Salt Marsh Restoration

- Parcel 4 Restoration
    - 14.8 acres
    - Key partners include: City of Eureka, California Coastal Commission, Redwood Regional Audubon Society
  
  - Elk River Estuary Enhancement
    - 23 acres
    - Key partners include: City of Eureka, Humboldt Bay Harbor District, PG&E, Private owners
  
  - Hoff Parcels, Eureka
    - Acreage TBD (portion of 53 acre site)
    - Key partners include: Westervelt Ecological Services, Humboldt Bay Harbor District
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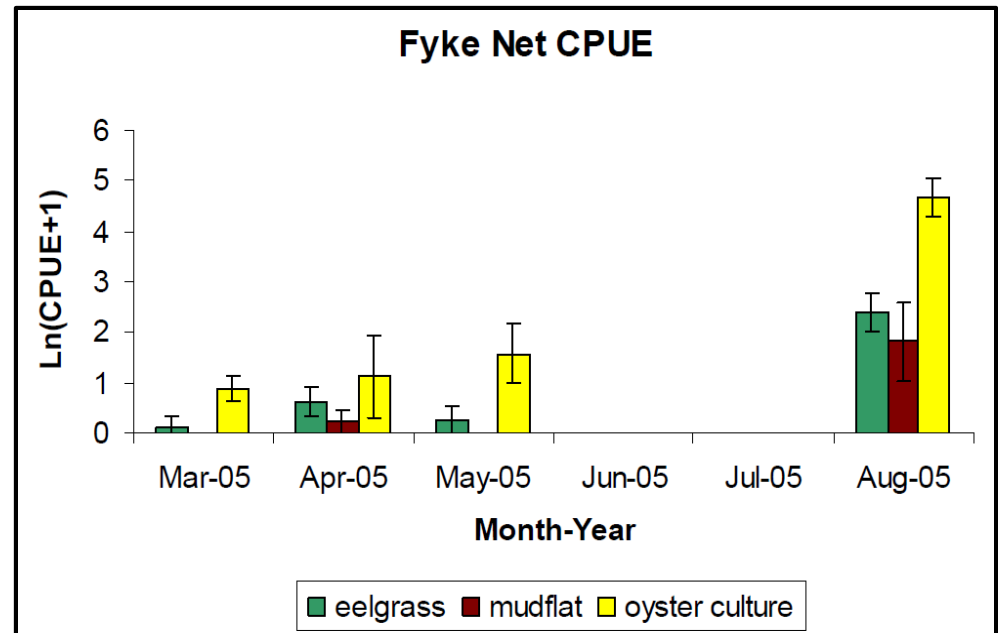
# Pacific Herring

- Typical spawning event uses <10% of available eelgrass
- No apparent substrate limitation
- Population trends unrelated to eelgrass or shellfish aquaculture
- Mitigation measure to halt harvesting activities if herring spawn are detected



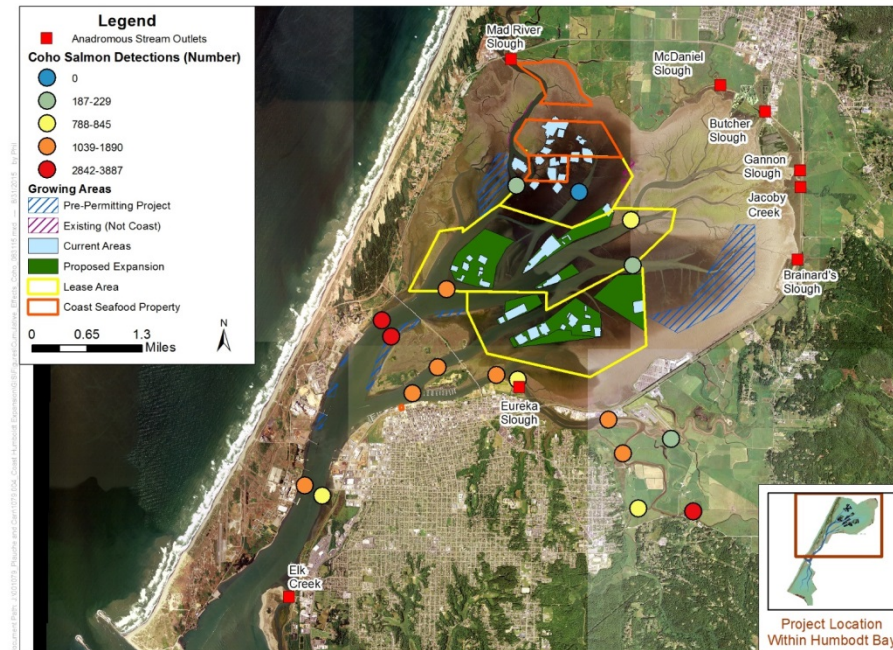
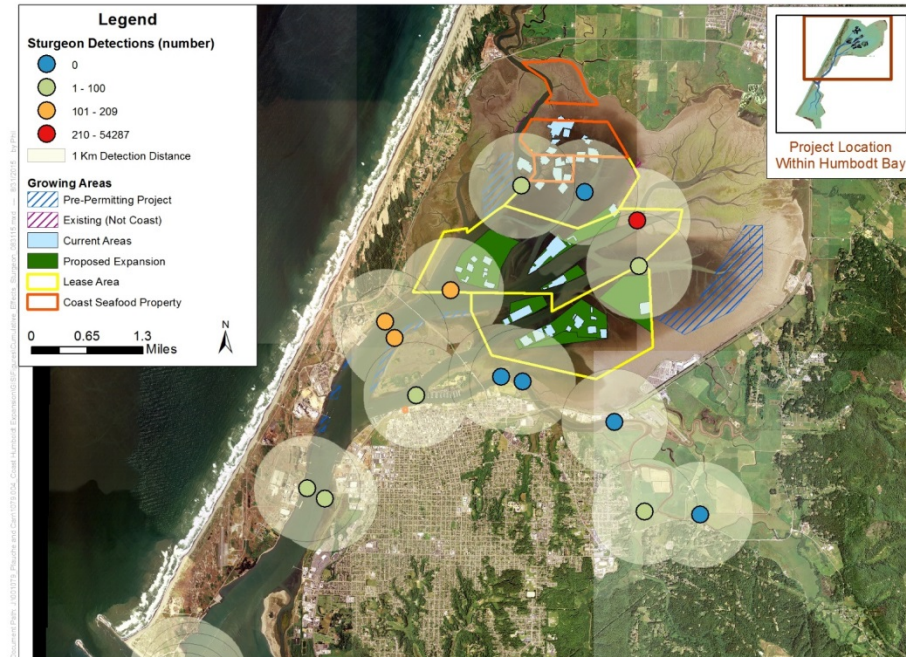
# Fish Impacts

- Effects are neutral (i.e. structured habitat similar to eelgrass)
- Species diversity and richness similar between oyster culture and eelgrass



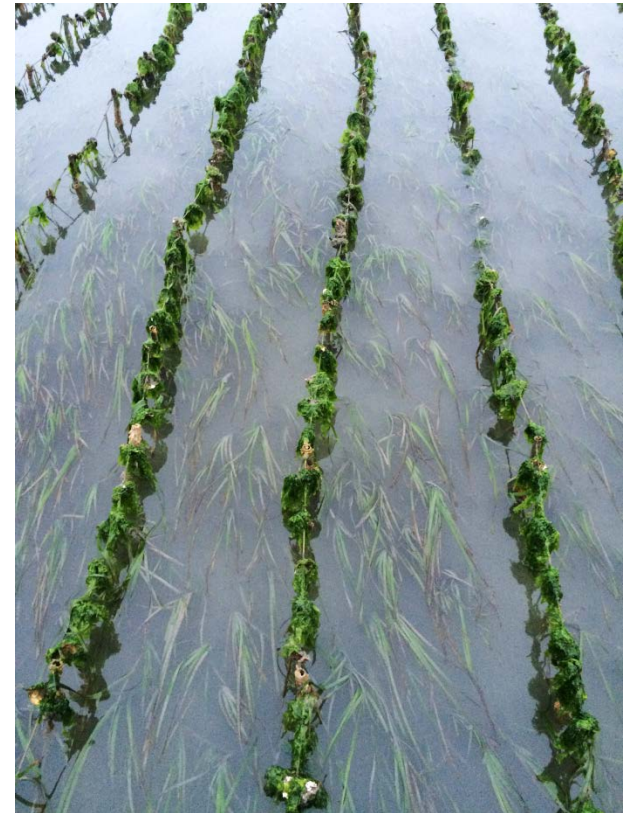
# Green Sturgeon & Salmonids

- Both species  
Associated with deep channels and channel margins
- Neutral effect (i.e.,  
structured habitat similar to  
eelgrass)
- No significant  
change to habitat or potential use



# Project Summary

- Oyster longlines do not inhibit eelgrass ecological functions
- Longlines are a type of structured habitat that is not permanent
- Presence of longlines does not inhibit use of the habitat by species protected under ESA or EFH
- Mitigation is proposed regardless of impact conclusions
- Monitoring will inform whether additional mitigation or adaptive management is needed
- Less than significant impact to black brant, fish, and other biological resources



# Questions?



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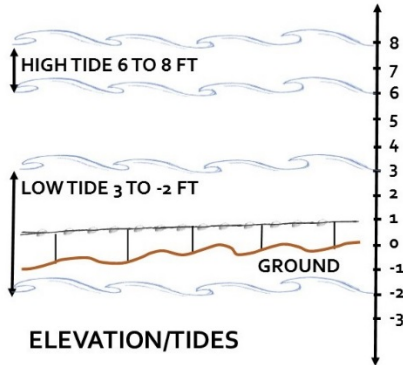
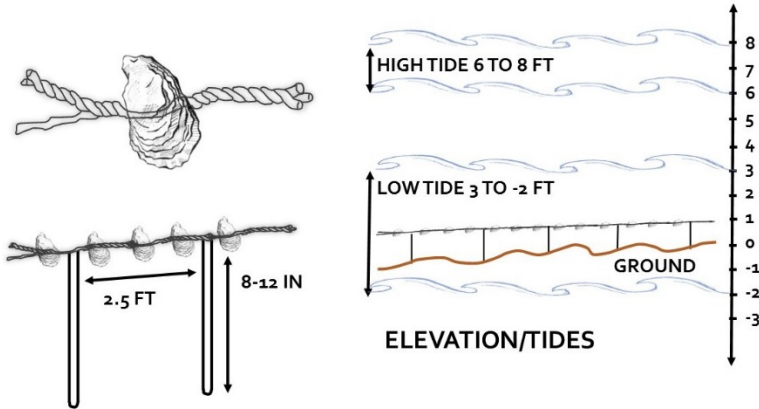
**(206) 588-4188**

[www.plauchecarr.com](http://www.plauchecarr.com)

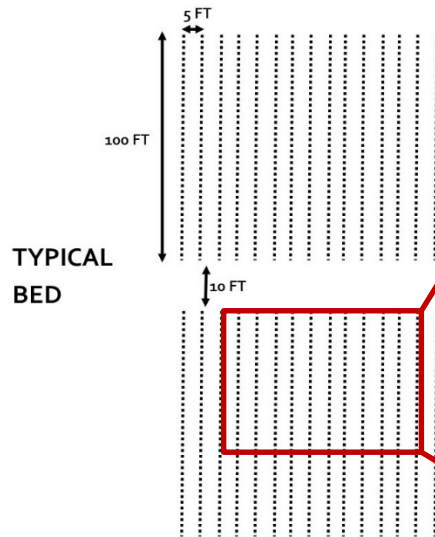
[robert@plauchecarr.com](mailto:robert@plauchecarr.com)

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# Project Description: Proposed Culture Methods



- Cultch-on-Longline
  - Total Area: 522 acres
  - Total in Eelgrass: 504 acres
- Proposed Spacing
  - Single 100-ft longline every 5 ft
  - Open row of 10 ft between shellfish beds



Note: photograph shows 2.5-ft spacing



# Project Description: Proposed Culture Methods

- **Basket-on-Longline/Rack-and-Bag**
  - Total Area: 100 acres
  - Total Basket-on-Longline in Eelgrass: 96 acres
  - Rack-and-bag culture would be planted at least 10 feet away from existing eelgrass beds

