Kelp Me Help You: A Qualitative Approach to Assessing Biodiversity and Community Composition on U.S. Seaweed Farms

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Background

- **Seaweed** is the fastest growing aquaculture sector in the U.S., offering **sustainable products** and **ecological benefits**
- The potential of seaweed farms to **attract biodiversity** and **influence community composition** is an emerging research area
- Studies focus on **ecological monitoring** (e.g., GoPro monitoring, transects, sonar, eDNA, etc.), but **qualitative insights** from those working directly with farms remain underrepresented
- **Growers and researchers** offer valuable **firsthand observations** of biodiversity, species interactions, and spatial variations that can **strengthen ecological understanding**
- This study amplifies **local and experiential knowledge**, identifying **common themes, regional differences,** and **perceived impacts** of biodiversity change

Research Questions

1. How do U.S. seaweed farmers and researchers perceive the impacts of seaweed aquaculture on local biodiversity & community composition?
2. How can these qualitative insights complement ongoing ecological monitoring?

Methods

- **Semi-structured interviews** (N=20)
  - Virtual, anonymous, and incentivized ($)
  - Inductively and deductively coded
  - Thematically analyzed
- **Focused on:**
  - Farm experience and demographics
  - Perceived biodiversity changes and seasonality
  - Environmental and fisheries impacts

Preliminary Findings

West Coast Interviews:

13 **Participants interviewed**

50+ **Years of experience**

~11 **Different kelp species cultivated across different sized farms, each situated in unique regions and environmental settings**

Key Takeaways:

- Community composition depends largely on site productivity before farm establishment
- Farms seen as having positive impact on environment, offering habitat and nursery areas, with calls for more quantitative data
- Fishing near farms viewed as compatible and low-conflict, highlighting the value of collaboration with fishers

Upcoming

- Begin East Coast **interviews** to include growers and researchers **nationwide**, enabling **regional comparisons**
- Develop a **digital survey** to:
  - **Quantify participants' experience**
  - Assess the **strength** of qualitative data
- **Analyze how interview and survey findings align with ecological monitoring data** from each region to identify **convergences, gaps,** and **complementary insights**

Implications

- Enhances understanding of ecosystem services provided by seaweed aquaculture
- Highlights environmental and ecological effects of farms
- Examines impact on local fisheries that may carry economic implications
- Informs management, policy, and site selection to guide sustainable aquaculture development across diverse U.S. regions
- Demonstrates the value of integrating social science and ecological approaches to strengthen understanding

Participate!

Are you a grower or researcher in the U.S. that has experience working seaweed farms?

Scan the QR code to enter your name, experience, and contact info to participate!

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