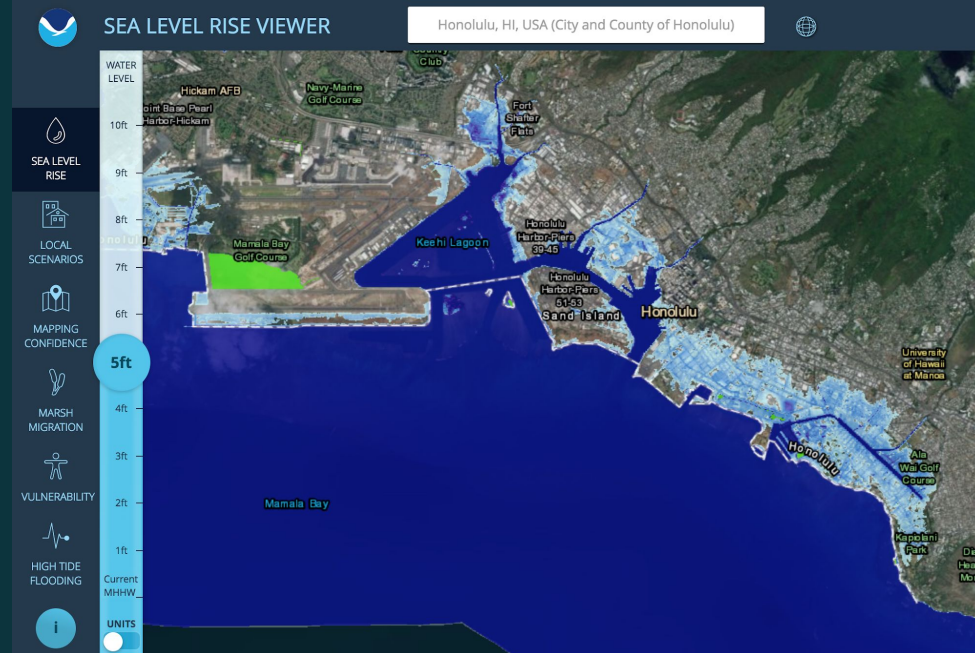


Loko Solutions: Policy Analysis for Carbon Sequestration Potential of Aquaculture in Hawai'i

Prepared by: Jonathan Fisk, Mia Iwane,
Kalani Quiocho, Lesley Davidson, and Alohi Nakachi

The Problem:

- Negative externalities
 - Climate change
 - Endogenous preferences
- Information asymmetry
- Limits to rationality



Aquaculture in Hawai'i:

- Loko i'a



Aquaculture in Hawai'i:

- Algae



Aquaculture in Hawai'i:

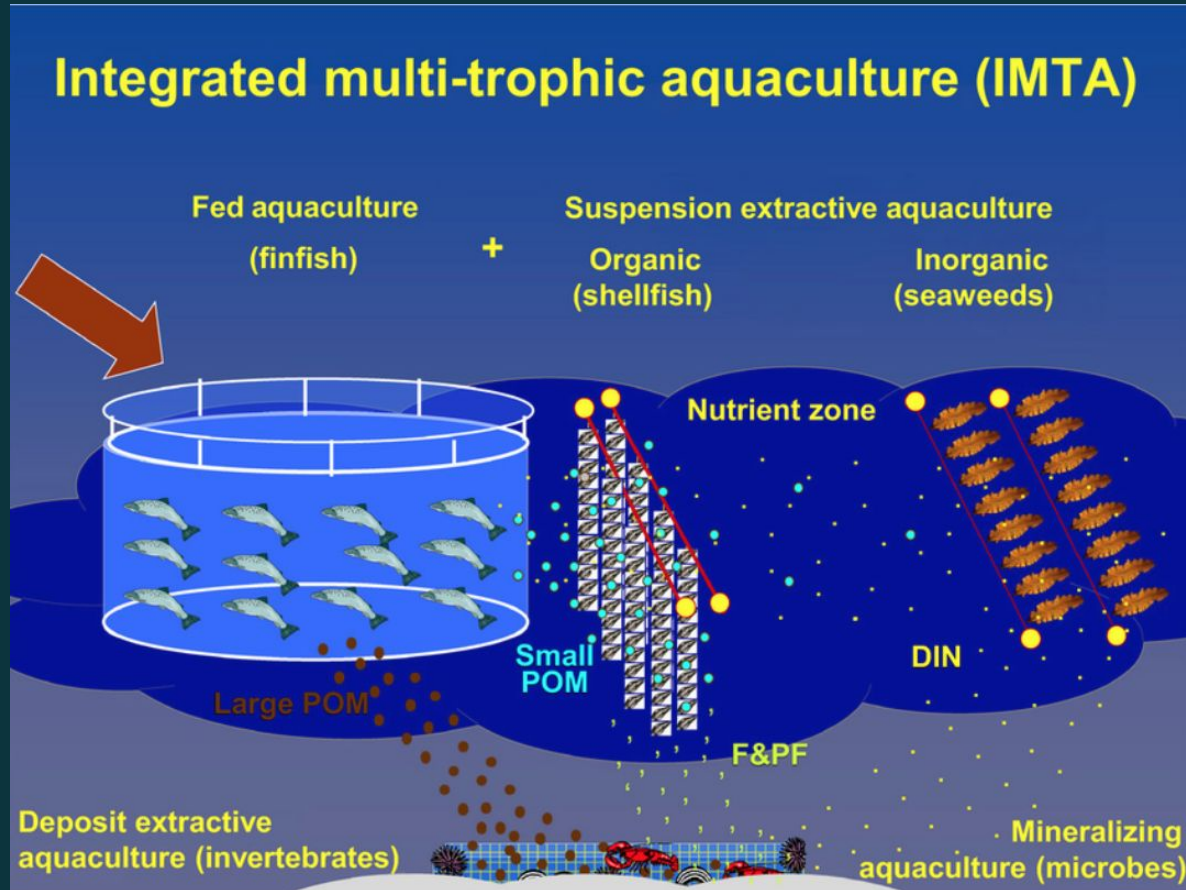
- Molluscs



Photos: Megan Spelman

Aquaculture in Hawai'i:

- Integrated Multi-Trophic Aquaculture (IMTA)



Best Management Practices (BMPs)

- Establish at least 2 trophic levels.

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- Maintain mollusks in shallow stands
- Use native seaweeds in loko i'a and IMTA
- Use renewable energy to meet their energy consumption needs

Policy Alternatives

1. Status Quo

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2. **Carbon Offsets**

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4. **Demand Side Policies**
 - a. **Demand side tax expenditures and subsidies**
 - b. **Vouchers**
 - c. **Demand-side commodity tax**

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5. **Supply-side Policies**
 - a. **Supply-side tax expenditures**
 - b. **Information provisions: certification**

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 - a. Demand side tax expenditures and subsidies
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 - c. Demand-side commodity tax
5. Supply-side Policies
 - a. Supply-side tax expenditures
 - b. Information provisions: certification
6. **Best Hits**
 - a. **Offsets**
 - b. **Supply-side tax expenditures**
 - c. **Deregulation**

- Policy Goals &
 - Impact Categories

- GHG Sequestration

- Rate of sequestration
- Trend over time



Instagram: @paepaeoheeia



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- Political Feasibility

- Stakeholder support
- Funding




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- Sequestration per cost
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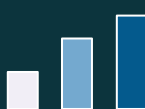
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- Equity

- Sociocultural benefits
 - Job creation
 - Food security
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Highlights from Analysis

GOALS		GHG sequestration potential		Political feasibility		Efficiency	Equity		
IMPACT CATEGORIES		Rate of sequestration [Low-High]	Upward trend [Low-High]	Stakeholder support [Low-High]	Funding [0-3]	GHG sequestration per cost [Low-High]	Sociocultural benefits [Low-High]	Job creation [Low-High]	Food security [Low-High]
POLICY ALTERNATIVES	Status quo	L	L	M	3	M	L	L-M	L
	Carbon offsets	H	M	M	2	H	M	M	M
	Cap and trade	L	L	L	2	L	M	L	L
	Demand-side policies	L-M	L-M	L-M	2	M	L-M	L	L-M
	Supply-side policies	M	M	M-H	2.5	M	L-M	L	M
	Best Hits	M	H	H	2	H	H	M	M

Implementation of Best Hits

- Supply-side tax expenditure
- Deregulation
- Carbon offset program

Implementation of Best Hits

- **Supply-side tax expenditure**
 - For: BMP-abiding/sequestering aquaculture
 - What: Tax breaks for permitting fees and income
- Deregulation

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- **Deregulation**
 - Update 2011 doc - Permits and Reg Requirements for Aquaculture in Hawai'i
 - For: Loko i'a
 - Streamline permit app process
 - Reduce state land leasing costs
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 - Streamline permit app process
 - Reduce state land leasing costs
- **Carbon offset program**
 - Compliance program + voluntary program
 - Select third-party standards organization
 - Incorporate value of co-benefits into offset price

