

MADE IN ALASKA

MARICULTURE



Alaska Mariculture Initiative

*Presented to:
North Pacific Fisheries
Management Count*

October 3, 2019

*Presented by:
Julie Decker & Heather
McCarty, Mariculture Task
Force*



AFDE
Alaska Fisheries Development Foundation, Inc.

Today's Presentation:

- 1) *What is mariculture?*
- 2) *Why mariculture?*
- 3) *Comprehensive
planning process*
- 4) *Recent Developments*
- 5) *Questions & answers*



MADE IN ALASKA

MARICULTURE

ALASKA DIVISION of
ECONOMIC DEVELOPMENT

ALASKA
GOING TO OPPORTUNITY

ALASKA
DEPARTMENT OF
COMMERCE
COMMUNITY
AND ECONOMIC
DEVELOPMENT

AFDE

A translucent, glowing crab-like organism with a yellowish-orange central mass, set against a dark background. The organism has multiple spiny legs and a central body that appears to be a cluster of small, glowing particles. The overall appearance is ethereal and otherworldly.

What is Mariculture?

In Alaska, mariculture is NOT...



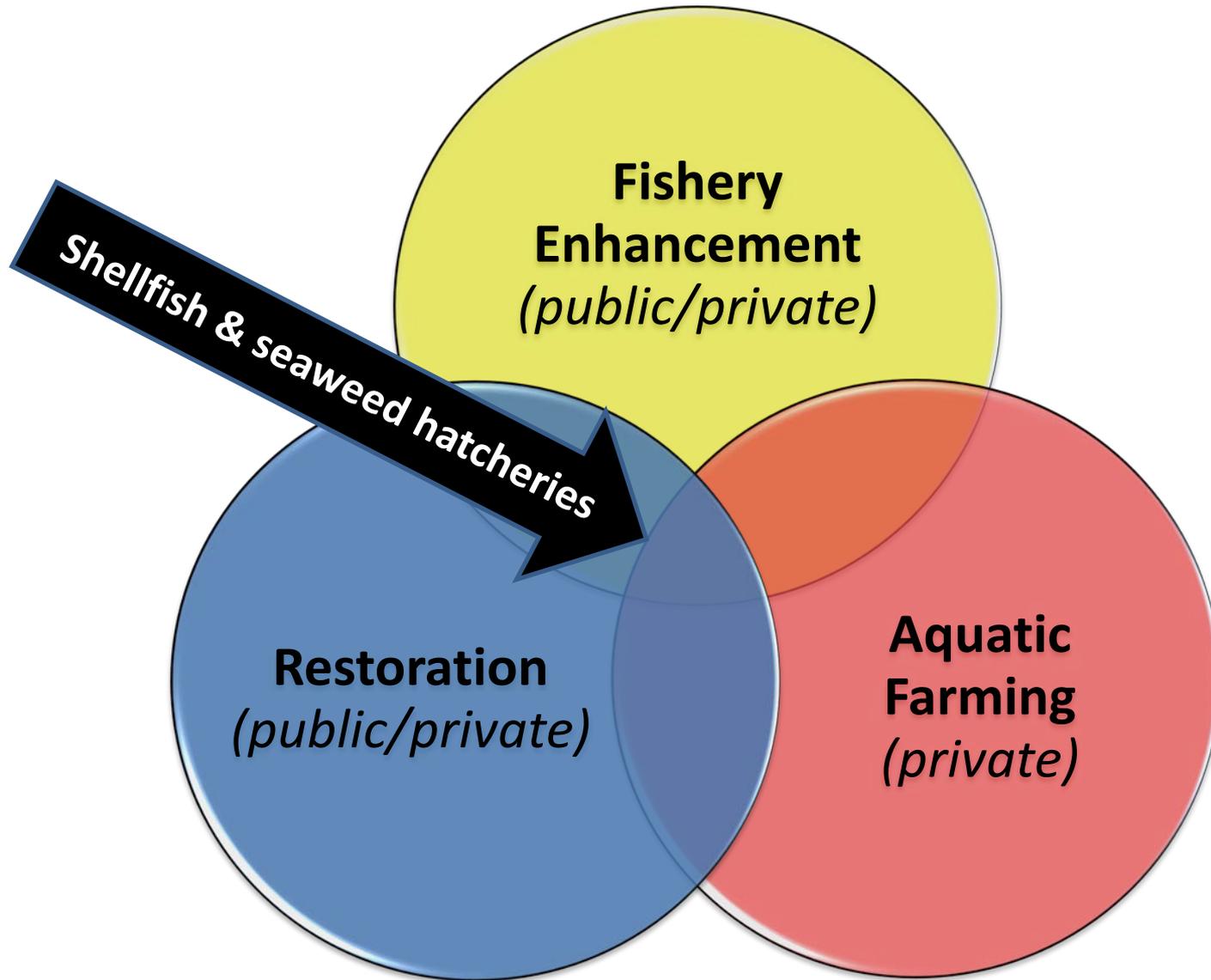
Finfish Farming

Finfish farming is prohibited by Alaska Statute 16.40.210.

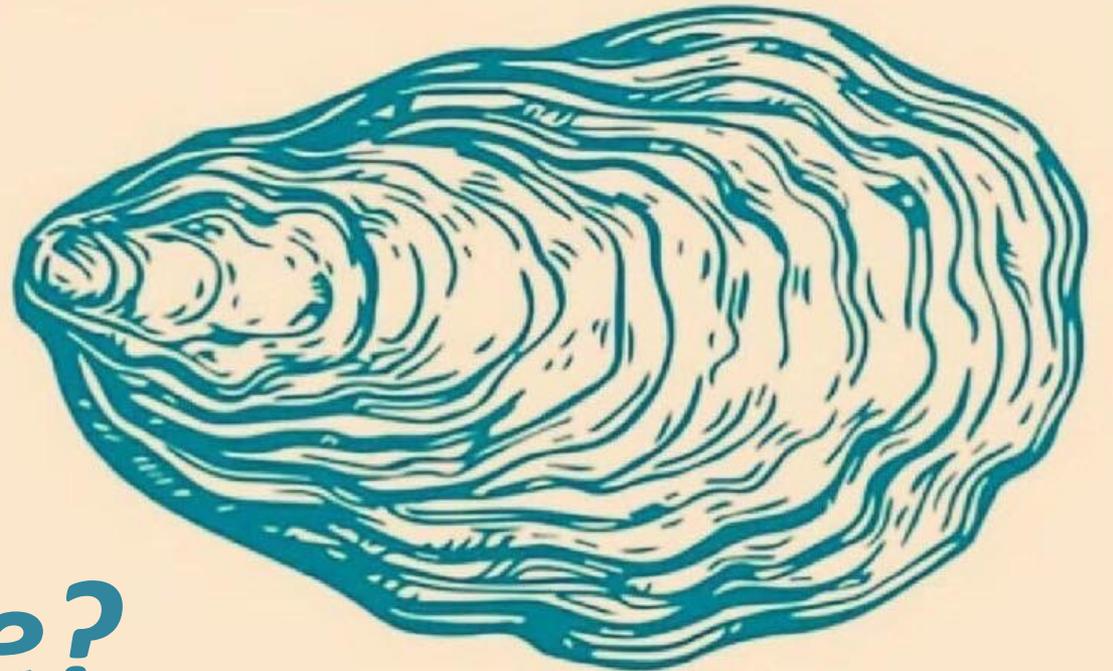
Mariculture is... enhancement, restoration and farming of shellfish and seaweeds.



Mariculture is...



I



*Why
Mariculture?*

Opportunities & Benefits: **Economic**



*Hump Island Oyster Co.
Wins 2016 Entrepreneur of the Year from
Ketchikan Chamber of Commerce*



Opportunities & Benefits:

Cultural

Connects Alaskans
with traditional
food sources,
harvesting
activities & skills

Opportunities & Benefits:

Food Security

Increases access to
local foods

Opportunities & Benefits:

Industrial

- Compliments & expands existing \$6 billion seafood industry
- Builds on assets – vessels, plants, sustainable fisheries, salmon hatcheries, Alaska seafood brand & ASMI



Salmon hatchery – Prince William Sound

Commercial fishing vessels – Bristol Bay



Processing plant – Kodiak



Ocean Acidification in Alaska

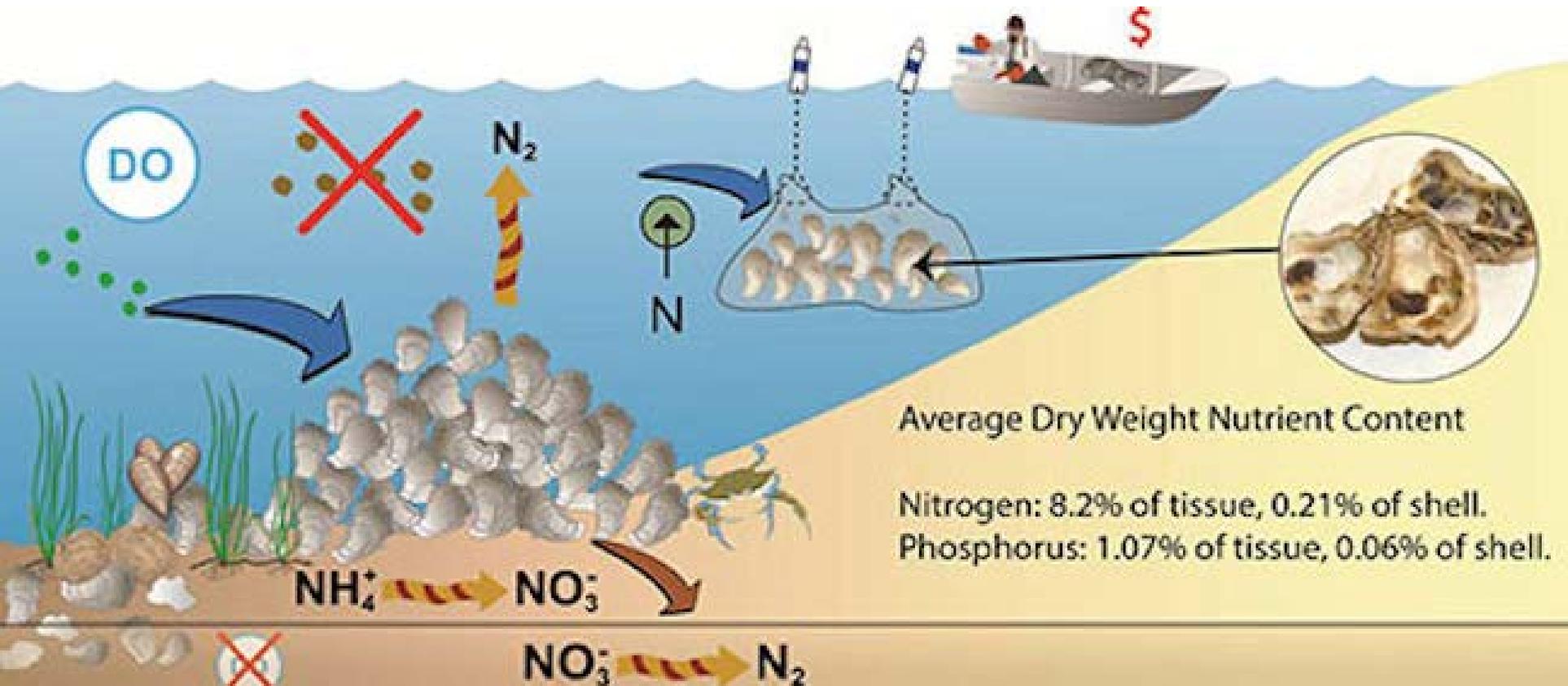
Learn about it. Discuss it. Build support for State action.



Photo by Shalita Busch

Opportunities & Benefits: Environmental

Potential climate change mitigation & habitat improvements through ecosystem services (ie. water filtration, carbon, nitrogen & phosphorus removal)





Collaborative Planning Process



PACIFIC SHELLFISH INSTITUTE



arpa.e
CHANGING WHAT'S POSSIBLE

Blue Evolution
BACK TO THE SOURCE



OceansAlaska
MARINE SCIENCE CENTER



AKCRRAB



ALASKA CHAMBER



SEALASKA



The Nature Conservancy
Alaska





KEY FINDING

- *“Regardless of farm type, larger farm size scenarios demonstrated better short and long term profitability than smaller farm sizes...new entrants into the Alaska shellfish farming industry should consider investments in medium and large scale farms.”*

Completed by:



ALASKA
NORTH TO OPPORTUNITY

Alaska Shellfish Farm Size Feasibility Study



KEY FINDING

Six key elements for successful mariculture development:

- 1) Pre-existing seafood industry
- 2) Public acceptance & support
- 3) Favorable growing areas
- 4) Existing development plan w/ coordinated R&D strategy
- 5) Successful business plans & growing technology
- 6) Workforce development



Economic Analysis to Inform the Alaska Mariculture Initiative: Phase 1 Case Studies

Prepared for
Alaska Fisheries
Development
Foundation

March 2015

Funded by:



In association with
Pacific Shellfish Institute
Maine Shellfish Research and Development

August 2017

Alaska Mariculture Initiative Economic Analysis to Inform a Comprehensive Plan

PHASE II

Prepared for
Alaska Mariculture
Task Force



ECONOMIC FRAMEWORK

- Six primary species
- 5, 10, 20, 30, 40, 50 yr targets
- Annual production & value
- Total economic output:
 - = \$100 million in 20 years
 - = \$275 million in 30 years
 - = \$445 million in 40 years
 - = \$570 million in 50 years

not adjusted for inflation

“Growth from the current \$1 million industry to almost \$6 million in five years...may be the most difficult phase along the trajectory...” McDowell Group

Funded by:



Prepared by
**McDowell
GROUP**

ALASKA MARICULTURE DEVELOPMENT PLAN



Completed in 2018

*Briefs & flash drives available here.
Also available at: www.afdf.org*

STATE OF ALASKA
MARCH 23, 2018

VISION

Develop a viable and sustainable mariculture industry producing shellfish and aquatic plants for the long-term benefit of Alaska's economy, environment and communities.

GOAL

Grow a \$100 million mariculture industry in 20 years.

Alaska Mariculture Development Plan

PRIORITY RECOMMENDATIONS

The priority recommendations of this comprehensive plan are listed below:

Secure seed supply through hatcheries

•

Pass State legislation to A) help fund hatcheries through the Mariculture Revolving Loan Fund, and B) allow shellfish enhancement

•

Establish an Alaska Mariculture Development Council

•

Establish a Mariculture Research Center at the University of Alaska

•

Fill key positions to enable the growth of the industry: NOAA Aquaculture Coordinator in Alaska and Alaska Sea Grant Mariculture Specialist

Mariculture: Latest Developments Personnel



*Adding three new mariculture positions
in Alaska in policy & research*

*Adding a mariculture research lead position
in Kodiak (on hold due to budget cuts)*



UNIVERSITY
of ALASKA
Many Traditions One Alaska



*Replacing Mariculture Specialist position
(on hold due to budget cuts)*



Mariculture: Latest Developments

AKCRRAB: Alaska King Crab Research Rehabilitation and Biology



FOCUS: Rehabilitation of depressed king crab stocks in Alaska, particularly Red King crab in Kodiak & Blue King crab near Pribilof Islands

Activities:

- Hatching & rearing at Alutiiq Pride hatchery
- Experimental releases near Kodiak (2 yrs)
- Planning releases near Pribilof Islands
- NEXT: Economic analysis

Mariculture: Latest Developments



**HB 76 signed into law
– amending
Mariculture Revolving
Loan Fund to allow for
hatcheries**



**Administrative Order
#297 signed –
reauthorizing the
Mariculture Task
Force**

Mariculture: Latest Developments

Demonstration Farm

- ✓ OceansAlaska in Ketchikan permitted seaweed demo farm
- ✓ Collaboration with ASG, Metlakatla & local schools
- ✓ Partnership with Seagrove Kelp to seed 127 acre seaweed farm in Craig, AK



Mariculture: Latest Developments

Tourism



Tourism partnership between Hump Island Oyster Company (Ketchikan) and Princess Cruises.

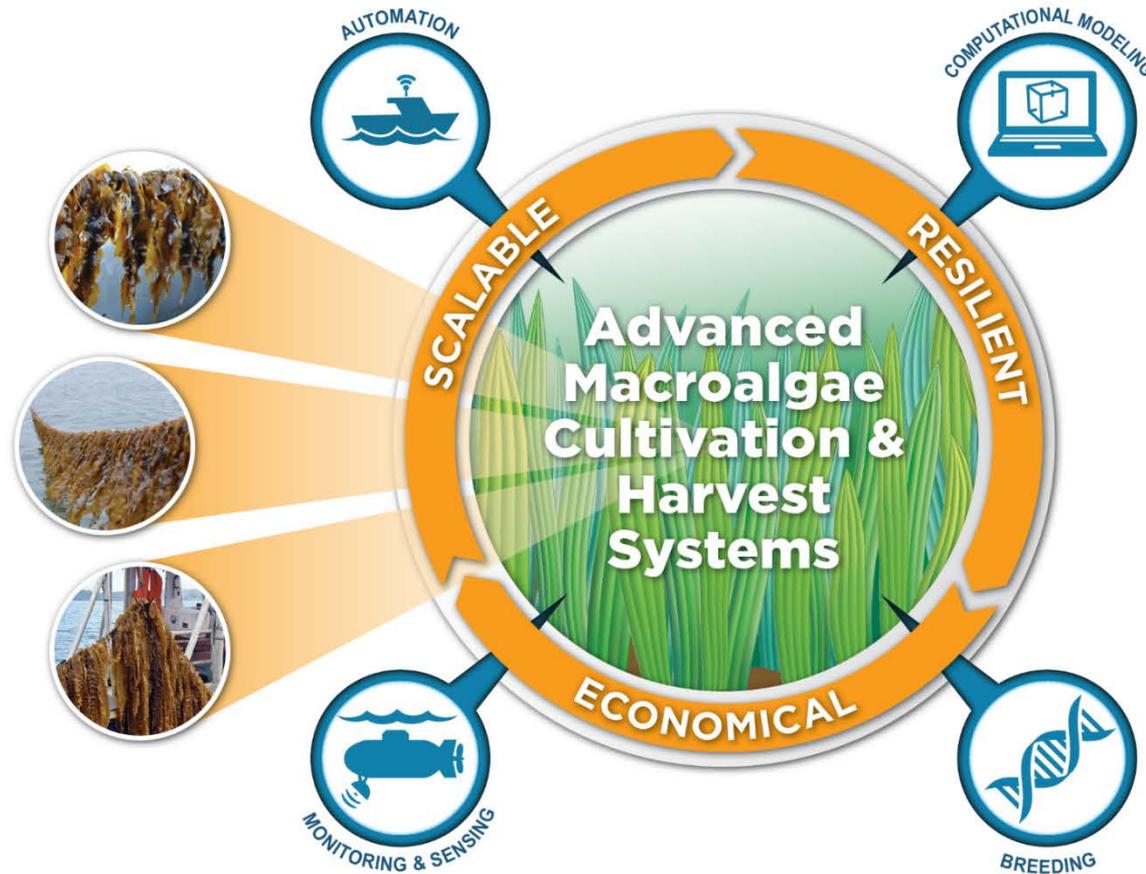
Mariculture: Latest Developments

Kodiak Seaweed Cluster



- ✓ BE/NOAA= CRADA for seaweed hatchery
- ✓ Blue Evolution & Ocean Beauty processing seaweed
- ✓ Trident developing products
- ✓ New farm sites on Kodiak Is.
- ✓ Part of ARPA-E Team

Mariculture: Latest Developments



Macroalgae Biomass:

No Land

No Freshwater

No Fertilizer

MARINER creates new biomass production opportunities for the vast ocean resources of the United States.

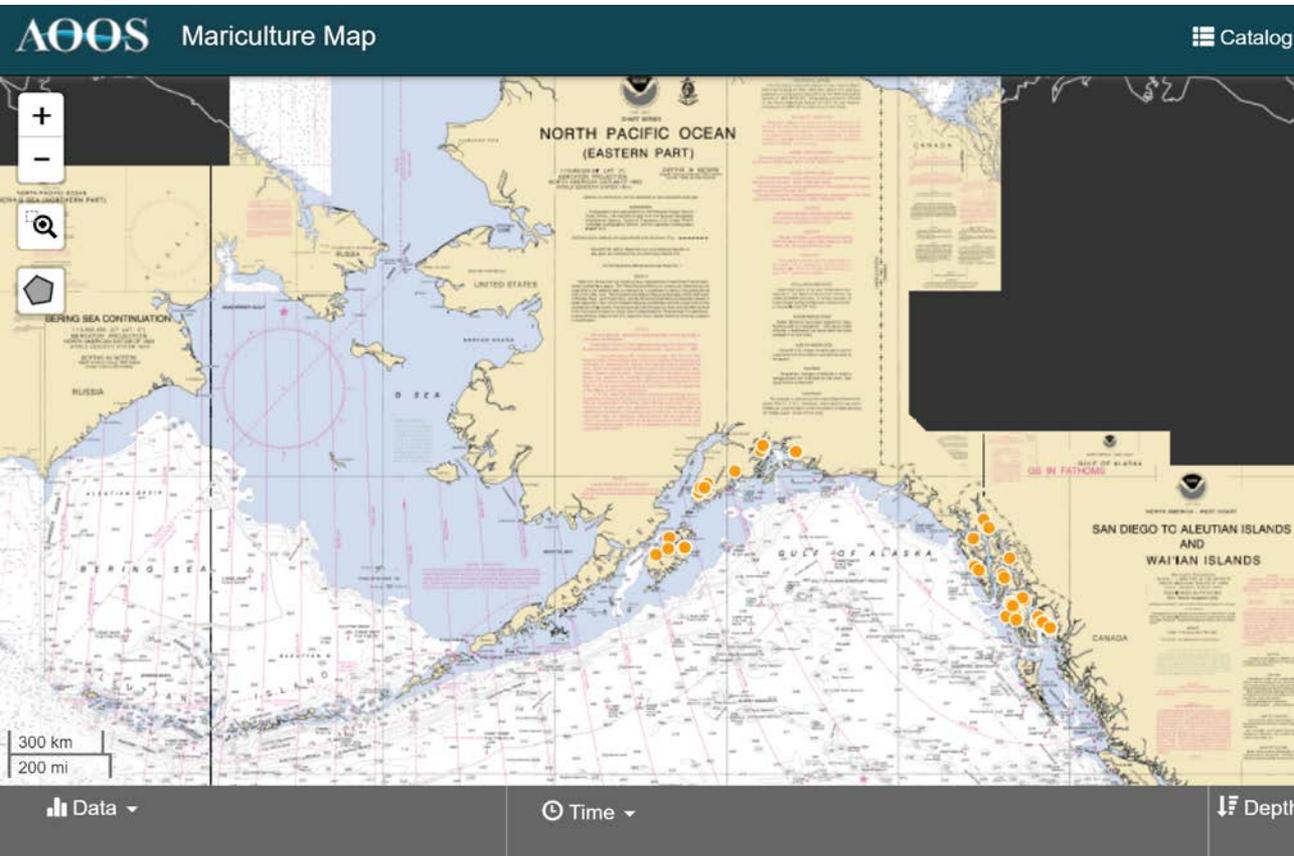
Photos copyright (top to bottom):
Daria Barbour/National Geographic; The Island Institute; Bren Smith/Huffington Post

ARPA-E 2019: UAF Team receives \$2.5 M to focus on growing and harvesting seaweed efficiently & cost-effectively.

Demo farm and vessels in Kodiak!

Mariculture Map v1.0

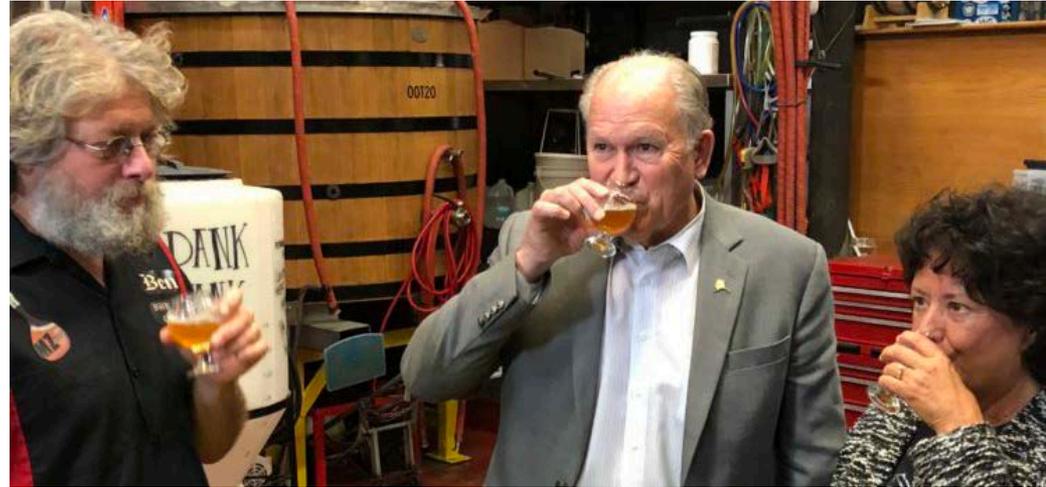
<https://mariculture.portal.aoot.org/>



- Phase 2 = version 2.0, to be completed August 31, 2020
- Complements NOAA's EEZ mapping tool: [National AquaMapper](#)

Mariculture: Latest Developments

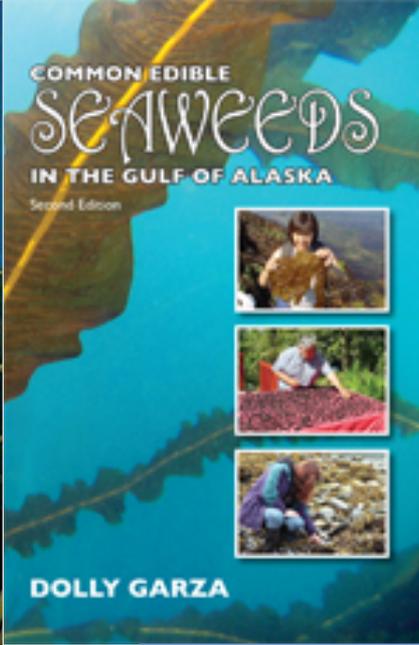
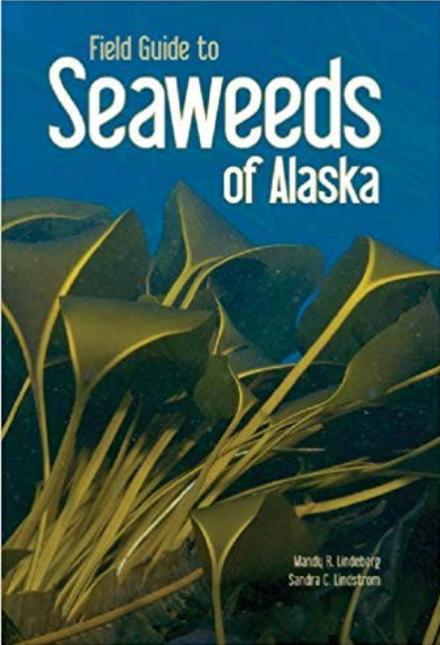
New Food Products



Kelp Beer from Kodiak!

Blue Evolution™
BACK TO THE SOURCE





Seaweed Farming 101: Workshops for Fishermen

- Workshops will occur in Ketchikan, Sitka & Kodiak in 2020 & 2021
- Project Partners: GreenWave, OceansAlaska, Alaska Longline Fishermen's Association and Blue Evolution
- Funded by NOAA
- Goal – provide initial training to 60 fishermen

Seaweed Farming in Alaska



Kelp Farming Manual

A Guide to the Processes, Techniques, and Equipment for Farming Kelp in New England Waters



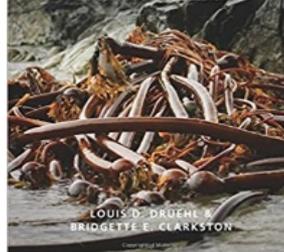
Katie Flavin
Nick Flavin
Bill Flahive, PhD



PACIFIC SEAWEEDS

A GUIDE TO COMMON SEAWEEDS OF THE WEST COAST

UPDATED AND EXPANDED EDITION



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ALASKA SEA GRANT
MARINE ADVISORY PROGRAM
ASG-02 2017
<https://www.sagepub.com/9781482717064/2017>



Mariculture Development: Immediate Challenges

- Seed security during early stage
- Reduce backlog of permit applications at ADNR
- HB 41/SB22 – shellfish enhancement
- Coordination across stakeholders
- Mariculture Research Center
- Increase public & private investment

GOOD NEWS: excellent interest, investment & cooperation from Federal, State govts & private industry!