

MADE IN ALASKA

MARICULTURE

*Mariculture + Innovation =
Opportunity*



Alaska Mariculture Development Plan & Task Force

*Presented to:
**Senate Resources
Committee**
January 30, 2019*

*Presented by:
**Julie Decker, AFDF &
Mariculture Task Force***



AFDF
Alaska Fisheries Development Foundation, Inc.

A translucent, spiny marine crustacean, possibly a hermit crab, is shown against a black background. The creature has a pale, yellowish-orange body and several long, spiny legs. It is positioned in the upper half of the frame, with its legs spread out. The text "What is Mariculture?" is overlaid in white at the bottom.

What is Mariculture?

In Alaska, mariculture is NOT...

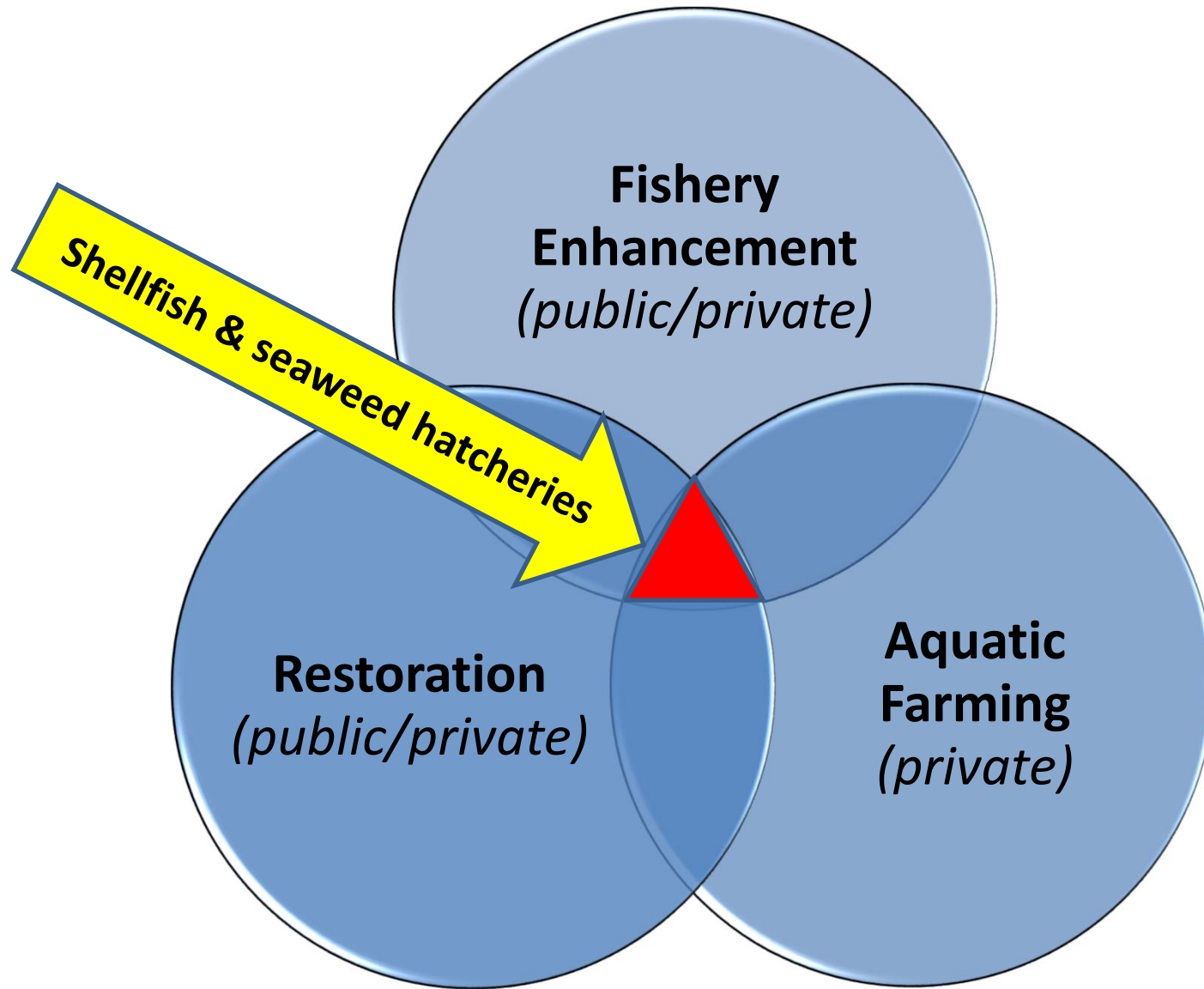


Finfish Farming

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



Mariculture is...



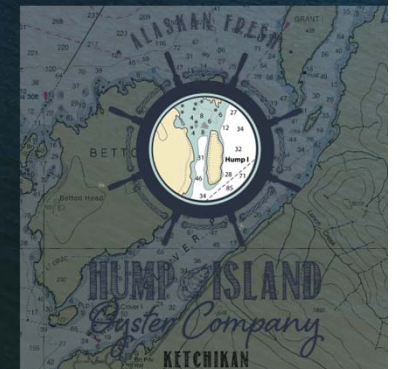
An underwater photograph showing large, green, textured seaweed (likely giant kelp) and several orange sea urchins. The scene is set against a deep blue background, suggesting a marine environment. The text "Why Mariculture?" is overlaid in white, italicized font at the bottom.

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



Salmon hatchery – Prince William Sound

Opportunities & Benefits: **Industrial**

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



Commercial fishing vessels – Bristol Bay



Processing plant – Kodiak

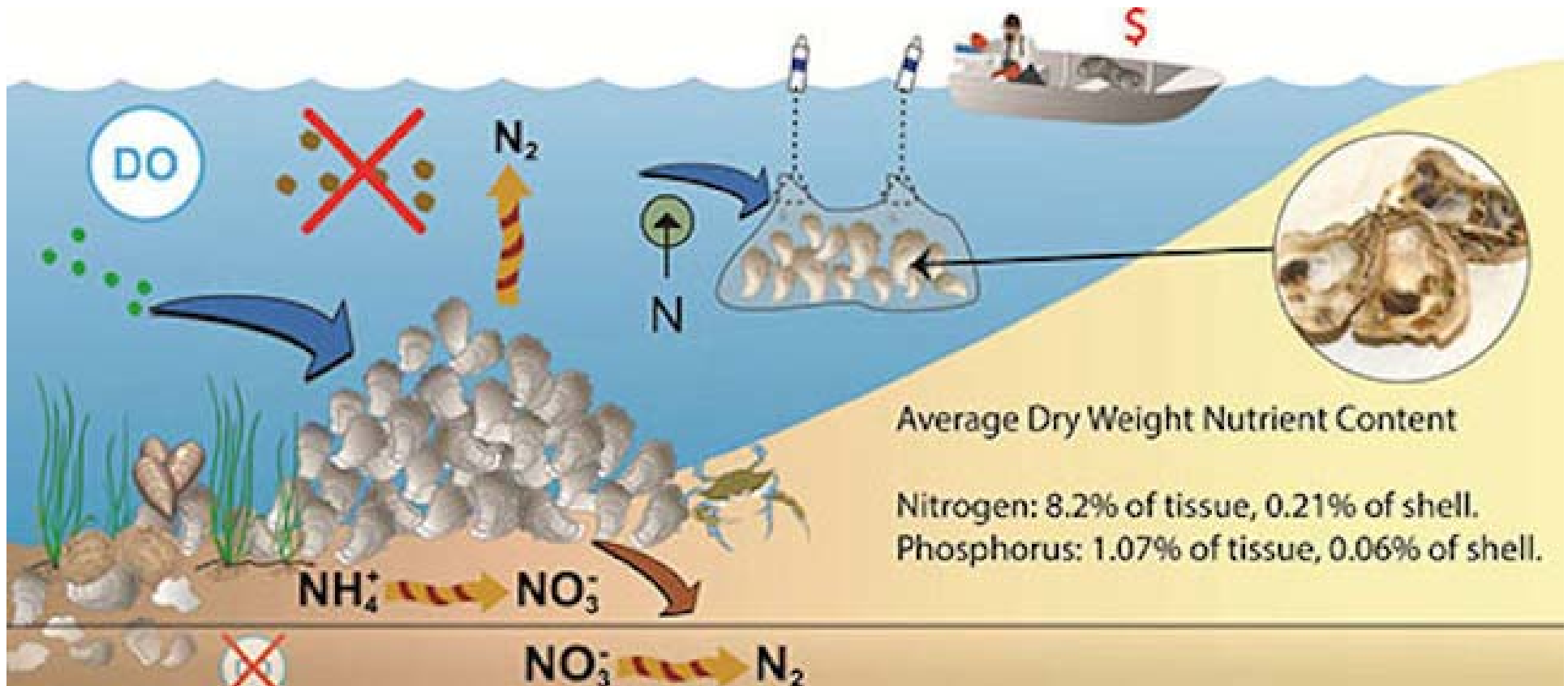




Opportunities & Benefits:

Environmental

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



Mariculture in the World



Chinese Companies to invest \$200 Million for Scallop Growing in Russia

SEAFOODNEWS.COM [China Aquatic] Translated by Amy Zhong
Dec 7, 2016

According to the government of Primorsky Krai, some Chinese companies plan to invest US \$200 million to raise scallops, sea cucumbers and mussels there.

The deputy secretary-general of China Overseas Development Association is reported to have met and talked with the vice governor of Primorsky Krai. And Chinese companies intend to start the operation of their aquaculture facility there in May, 2017. And this facility will create thousands of new jobs.

Chinese investors are attracted by the good conditions around Vladivostok and other advanced development zones, said the deputy secretary-general. Primorsky Krai is attractive for investment, especially its aquaculture industry.

According to investors, the trial stage of this project will last about three years. Dalian's Gourmet Ocean product is their important sales partner.

Seafood
investment fund
plans up to 10 new
deals by end of
2018



As geoduck, oyster demand rises, Taylor Shellfish eyes \$100m turnover



Shellfish move down a conveyor at Taylor Shellfish's Shelton, Washington location.

February 7, 2017, 1:57 pm

Jason Smith

With demand for the company's oysters and geoducks, particularly from Asia and the US, Washington-based Taylor Shellfish Farms eyes \$100 million in sales by 2019, up from \$70m in 2016.

Alaska Mariculture Task Force

Administrative Orders: By request of industry leaders, Governor Walker established the Alaska Mariculture Task Force (MTF) by AO #280 in 2016 and extended it by AO #297 in 2018.

AO #280 Directive - *“To develop a comprehensive plan for a viable and sustainable mariculture industry producing shellfish and aquatic plants for the long-term benefit of Alaska’s economy, environment and communities.”*

AO #297 Directive – *“The Task Force shall serve as an advisory panel to the Governor and will work with the appropriate State, Federal, and Tribal entities, industry and other stakeholders, to encourage and support implementation of the plan...The Task Force shall make recommendations to present to the Governor by May 1, 2021, along with a report regarding progress toward the Plan's goal to grow a \$100 million mariculture industry in 20 years.”*

Mariculture Task Force completes comprehensive planning process

- ✓Mariculture Task Force (11 members)
- ✓5 Advisory Committees (15+)
- ✓Webpage on ADFG website
- ✓Nearly two years long
- ✓Included iterative economic analyses
- ✓Includes dozens of recommendations, in eight categories
- ✓Includes five priority recommendations

State of Alaska

Alaska Department of Fish and Game

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Fish & Game State of Alaska

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Alaska Governor's Mariculture Task Force Overview

Overview Task Force Members Task Force Meetings Information Advisory Committees Reference Library

Overview

"To provide recommendations to develop a viable and sustainable mariculture industry producing shellfish and aquatic plants for the long term benefit of Alaska's economy, environmental, and communities".

With encouragement from ADFG and the industry, Governor Walker created an Alaska Mariculture Task Force (AMTF). An [Administrative Order #280](#) was signed on February 29, 2016. The AMTF has been directed to create a comprehensive plan to boost the mariculture industry, which includes aquatic farming and enhancement of wild fisheries in Alaska. The recommendations developed by the AMTF will include details on public and private investments, regulatory issues, research and development needs, environmental changes, public education, and workforce development. Eleven AMTF members will be appointed by the Governor to develop the comprehensive recommendations. Advisory committees will also be established to assist the AMTF members with their mission. The AMTF meetings will be open to the public.



Pacific oysters ready for Alaskan market.

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Alaska Governor's Mariculture Task Force

Overview



Collaborative Planning Process



PACIFIC
SHELLFISH
INSTITUTE



arpa.e
CHANGING WHAT'S POSSIBLE

Blue Evolution
BACK TO THE SOURCE



OceansAlaska
MARINE SCIENCE CENTER



DNFUUDE



SEALASKA



ALASKA CHAMBER



The Nature
Conservancy
Alaska





Alaska Shellfish Farm Size Feasibility Study



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



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

Prepared for
Alaska Fisheries
Development
Foundation

March 2015



In association with
Pacific Shellfish Institute

Maine Shellfish Research and Development

This publication was prepared with funds from Award #NA14NMF4270058 from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. The statements, findings, conclusions and recommendations are those of the authors and do not necessarily reflect the views of NOAA or the Department of Commerce.

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

Funded by:



August 2017

Alaska Mariculture Initiative Economic Analysis to Inform a Comprehensive Plan

PHASE II

Prepared for
Alaska Mariculture
Task Force



Prepared by
McDowell
GROUP

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

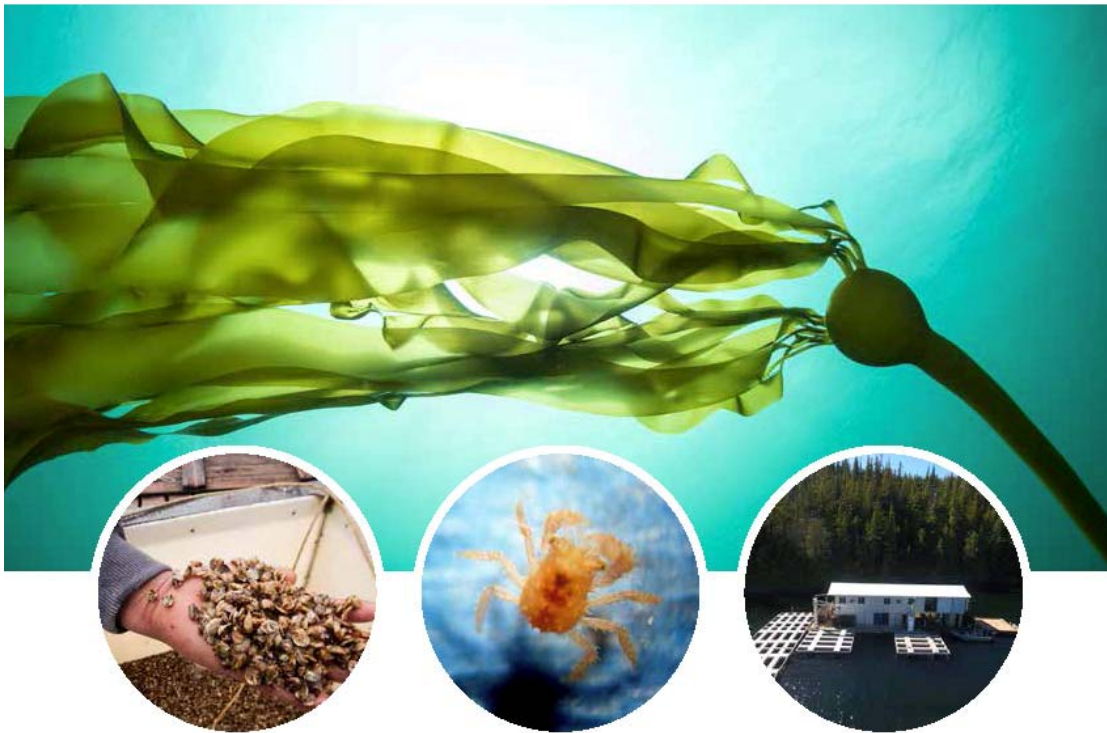
not adjusted for inflation

“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:



ALASKA MARICULTURE DEVELOPMENT PLAN



STATE OF ALASKA
MARCH 23, 2018

Completed in 2018

Available at: www.afdf.org

IN BRIEF

Alaska Mariculture Development Plan 2018



"Aquatic plants and shellfish present a significant and sustainable economic opportunity for coastal Alaska communities...I support this comprehensive plan and commit the State of Alaska to work in partnership with stakeholders and agencies toward its implementation."

—Governor Bill Walker

"This plan is intended to increase profitability, expand participation, and provide coordination...the Task Force members remain committed and are enthusiastic about expanding Alaska's mariculture industry."

—Alaska Mariculture Task Force

Alaska Mariculture Development Plan

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



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.

GUIDING PRINCIPLES

SCOPE: For the purpose of this plan, mariculture is defined as enhancement, restoration, and farming of shellfish (marine invertebrates) and seaweeds (macroalgae). Finfish farming is not legal in Alaska waters.

COORDINATION & LEADERSHIP: Effective implementation of this comprehensive plan requires coordination and commitment of time and resources from local, state, federal and tribal governments, industry, communities, the University, and other interested stakeholders.

SUSTAINABILITY: Development of mariculture will be compatible with sustainability principles to maintain and improve environmental integrity, as required by the Alaska Constitution and ADF&G management practices.

ALASKA NATIVE PARTICIPATION: Mariculture development will benefit from the involvement of Alaska Natives in every element of the process.

INNOVATION: Alaska presents many unique challenges, and developers will look globally to applicable research and solutions to apply to Alaska's circumstances and geography.

COMPATIBILITY: Implementation of this plan must protect existing marine uses, such as subsistence, commercial fishing, and recreation. It will also utilize Alaska assets and infrastructure.

*Beach at St. George Island, Alaska.
Photo by Joshua Propiokoff.*

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

Bull kelp forest. Photo by
©"TheMarineDetective.com".

Mariculture: Latest Developments



Adding two new mariculture positions in Alaska (in policy & research)

Marine Aquaculture Act introduced in 2018 in U.S. Senate & House



Adding a mariculture research lead position in Kodiak



Mariculture: Latest Developments

Industry Activity

- 400% increase in new farm lease applications to DNR:
 - 4 in 2016, to 16 in 2017, and 17 in 2018. 2019 application period is open until April 30th.
- 1,500 acres of new farms would provide approx. \$150,000 of new revenue to state in annual lease fees
- Largest farm to date has been approved:
 - Premium Aquatics received approval for 127 acre farm site near Craig/Klawock
- Medium-scale operations (\$5-10 million initial investments) are forming
- Alaska seafood processors are taking interest in processing and farming
- Clusters of development emerging in multiple regions of the state:
 - Ketchikan, PWS, Homer, Kodiak (Aleutians under investigation)
- New interest by CDQ Groups and Alaska Native Corporations
- Fishermen interested in diversifying into seaweed farming

Mariculture: Latest Developments

Demonstration Farm

- ✓ OceansAlaska in Ketchikan permitted seaweed demo farm
- ✓ Collaboration with ASG, Metlakatla, POW & local schools



Mariculture: Latest Developments *Tourism*

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





Mariculture: Latest Developments

Kodiak Seaweed Cluster

- ✓ NOAA/private seed production
- ✓ Blue Evolution & Ocean Beauty processing seaweed
- ✓ Trident commits to processing
- ✓ New farm sites on Kodiak Is.
- ✓ Part of ARPA-E Team

Mariculture: Latest Developments

New Food Products



*Kelp Beer
from Kodiak!*

Blue Evolution™
BACK TO THE SOURCE





Seaweed Farming in Alaska



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Advisory Program
Ketchikan, Alaska
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907.226.4033

SEAgram

ALASKA SEA GRANT
MARINE ADVISORY PROGRAM
AND-65 2017
https://seagram.org/16-0001166/2017

Kelp Farming Manual

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

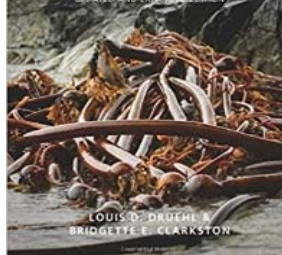


Katie Flavin
Nick Flavin
Bill Flahive, PhD

Ocean
APPROVED
CHANGING THE WORLD ATLANTIC

PACIFIC SEAWEEDS

A GUIDE TO COMMON SEAWEEDS OF THE WEST COAST
UPDATED AND EXPANDED EDITION



LOUIS D. DEUTHER
BRIDGETTE E. CLARKSTON

Mariculture: Latest Developments Seaweed Farming 101

- Learn to identify seaweed species (get a book)
- Find a site & determine which species are available w/in 50 km of the site (walk the beaches, take a boat ride)
- Learn about Alaska Dept. of Natural Resources (ADNR) Aquatic Farm Program & Lease Application Process: <http://dnr.alaska.gov/mlw/aquatic/>
- Find a market / product form
- Develop a business plan
- Find seed supply (Blue Evolution, OceansAlaska)
- Consider layout / design of farm



AKCRRAB

Alaska King Crab Research Rehabilitation and Biology

Rehabilitation of depressed king crab stocks in Alaska



Focus = red king crab in Kodiak & blue king crab near Pribilof Islands

Activities since 2006:

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

Mariculture Development: Immediate Needs

- Secure source of seed
- Reduce statutory, regulatory and policy hurdles
- Reduce backlog of permit applications at ADNR
- SB 22 – allow for shellfish enhancement and provide regulatory framework
- Coordination across stakeholders through Mariculture Task Force