Alaska Mariculture Initiative

Why not Alaska?

Comparative case studies of successful mariculture industries & their potential relationship to a statewide strategic plan to develop the mariculture industry in Alaska

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Mission - Turn challenges into opportunities for Alaska’s seafood industry, while balancing economic benefits with sustainability principles

Current Projects:

1) Alaska Symphony of Seafood
2) Fishing Vessel Energy Efficiency Project
3) Sustainability certification (RFM & MSC)
4) Maritime Works
5) Salmon Protein Powder & Market Testing
6) Alaska Mariculture Initiative
Alaska Mariculture Initiative

AMI - What is it?
A project to expedite the development of the mariculture industry in Alaska (funded by a NOAA grant).

Vision: Grow a $1 billion industry in 30 years
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What does “mariculture” mean in Alaska?

Species in Alaska = indigenous shellfish + aquatic plants + Pacific oysters
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Goal #1:
• Expand stakeholder base, create partnerships, collaborate & increase capacity to be effective

Goal #2:
• Develop a clear & comprehensive strategic plan
  • Economic analysis – Phases I, II, III
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Economic Analysis

Phase I:

• Comparative case studies (9) which outline examples of successful mariculture industries in different regions of the world
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Economic Analysis

Phase II:

• Given the results of Phase I, develop a preliminary economic analysis, including a model or framework, to support & inform the development of Alaska’s statewide strategic plan
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Economic Analysis

Phase III:

- Analysis of the costs, benefits & economic impact of the final statewide strategic plan developed as part of the AMI, given implementation
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Economic Analysis

Contract awarded to the following Team:

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Maine Shellfish Research & Development
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Economic Analysis: Phase I – Case Studies

1) Alaska - salmon enhancement
2) Alaska - King crab restoration & enhancement
3) Washington – geoduck farming
4) Florida – hard shell clam farming
5) Ireland – seaweed farming
6) Spain – mussel farming
7) Prince Edward Island (CN) – mussel farming
8) New Zealand – mussel farming
9) British Columbia – First Nations shellfish aquaculture
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Economic Analysis: *Phase I – Case Studies*

Each case study includes:

1) Current status & economic impact of the industry
2) History & growth of the industry
3) Investment climate
4) Private & public investment & capitalization
5) Lead state agency support
6) Level of coordinated R & D
7) Regulatory process
8) Development strategies & key stakeholders
9) Coastal Zone Management Plans
10) Species present
11) Biophysical characteristics
12) Culture & processing technology
13) Cost/benefit analysis
14) Relevancy to Alaska
15) References
Key Elements in Mariculture Development

- Development plan & coordinated R+D strategy
  - New Zealand, Canada, Ireland

- Successful business plan & culture technology
  - New Zealand, Canada, Florida, Washington, Spain

- Favorable growing areas
  - All case studies

- Fishing and processing infrastructure
  - All case studies

- Workforce development
  - New Zealand, Canada, Florida

- Public acceptance & support
  - Spain, Canada, developed in New Zealand, Florida

Source: Maine Shellfish Research & Development, 2015
Key Elements for Growth

- Experimentation by early entrepreneurs
- Existence of wild fisheries and markets
- Seed grants
- Breakthroughs in culture technology
- Development of successful business models
- Successful marketing
- R+D support for culture bottlenecks, financing
- Strategic partnerships
- Fishermen training
- Improvements in efficiency
- Development of new products
- Clear articulation of development goals by industry
- Continued R+D support
- Workforce development

Source: Maine Shellfish Research & Development, 2015
## Critical Attributes, Case Study Areas Comparison with Alaska

<table>
<thead>
<tr>
<th>Area</th>
<th>Industry growth capacity</th>
<th>Rapid growth rates</th>
<th>Workforce development</th>
<th>Stakeholder supported development</th>
<th>Large Capture Fisheries</th>
<th>Advanced culture technology</th>
<th>Public and private investment</th>
<th>Coordinated research and development</th>
<th>Market access</th>
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<td>Maritime Works</td>
<td>AMI</td>
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<td>x</td>
<td>mostly private investment</td>
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<td>export</td>
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<td>x</td>
<td>x</td>
<td>re-training program</td>
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Spain - mussels: 
Relevancy to AMI

• Represents world-leader (#2) in large-scale mussel production (400 million lbs annually)
• Raft cultivation may be applicable to AK where increased protection from predators is necessary
• Wild fishery infrastructure provided backbone
• Small, family-owned businesses
• Establishment of areas/zones for large-scale development
• Strategic planning efforts (& potential pitfalls)
Prince Edward Island (CN)-mussels: *Relevancy to AMI*

- Demonstrates effective shellfish aquaculture development strategy
- Efficient production & processing sector
- Importance of involving local growers
- Strong government policy support (National Fisheries Act & DFO’s Aquaculture Policy Framework)
- Successful coordinated R & D support by government
- Existence of established seafood industry provides backbone
British Columbia & First Nations: Relevancy to AMI

- Positive impact of public investments in aquaculture planning & development
- Similar stakeholder groups
- Physical environment very similar to Alaska
- Similar species could be grown in Alaska
- Demonstrates ability to meet challenges of remote operations, transportation, workforce, which parallel Alaska
Cedar Key (FL) – hard clam: 

*Relevancy to AMI*

- Demonstrates ability to train & employ commercial fishermen, utilizing existing skill sets & resources (vessels, etc.)
- Success was not dependent on big national/statewide gov. strategy
- Success was built on local community & stakeholder driven approach
- Utilized flexible & nuanced regulatory policy
- Intelligent technical & scientific support
- Financial support provided for beginning farmers
- Existing infrastructure (roads, power & communication) supported rapid expansion
- Large # of nearby researchers, hatcheries & nurseries aided development
New Zealand - Relevancy to AMI: A model of strategic planning

• Government’s Aquaculture Strategy & Five-Year Action Plan
• Clear direction from & integration of industry
• Scale/size of industry – target $1 billion (NZ$) by 2025
• Workforce development efforts
• Development of profitable business model
• Wild fishery infrastructure provided backbone
• Promote sustainability (environmental, economic & social)
• Improvements in public understanding & support
• Marketing efforts
New Zealand – A Model Plan:
Government’s Aquaculture Strategy & Five-Year Action Plan
Conclusion: Why not Alaska (so far)?

- Negative public perception of aquaculture
  - Economic reasons – competition by farmed salmon
  - Environmental reasons – early stages of aquaculture
- Lack of coordinated planning by government agencies & industry
- Lack of coordination by industry
- Lack of recognition of benefits to existing seafood industry
- Lack of successful business model in Alaska
  - Lack of consistent supply & quality of seed
  - Remote sites & high costs of operation
  - Lack of trained workforce
  - Slower growth for some species
- Lack of focus on sustainability issues
Conclusion: Why Alaska (in the future)?

• Already successful with salmon enhancement ($100-300 M / year)
• Large-scale existing seafood industry & infrastructure (processing facilities, vessels, overlapping skill sets, seafood markets, etc.)
• Pristine environment & availability of room for expansion
• ASMI - Alaska seafood already branded for high quality & price
• Financing provided to farmers by $5M AK Mariculture Revolving Loan Fund
• Improvements in access to seed – OceansAlaska in Ketchikan
• Recent demonstration of successful business model by AK Dept. of Commerce feasibility study
• AMI – creation of strategic plan & partnerships for implementation