

Bottlenecks in Alaskan Mariculture

What has been identified previously (2006-2011)?

Is there anything new?

What has been achieved?

What has not been achieved and why not?

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State of Alaska Shellfish Mariculture Industry Development Plan (2006)

Are any of these still relevant, and which ones are the most important? Is anything missing?

Task 1 – Designate lead agency for shellfish mariculture development

Task 2 – Mariculture Research Center

Task 3 – Optimal Size, Cooperative Marketing and Hatchery Structure Analysis

Task 4 – Formal Training Program

Task 5 – Comprehensive Financing Programs

Task 6 – Enhance Marketing Efforts

Task 7 – Technology Transfer

Task 8 – Regulatory Review

Task 9 - Improving Industry Infrastructure

Task 10 – Shellfish Enhancement

Oceans Alaska (OA) 2007 Strategic plan

1. Shellfish Mariculture Education and Training
2. Shellfish Mariculture R+D
 - best practices in culture and technology by species
 - mariculture demonstration farms
 - stock enhancement of wild shellfish
 - securing a reliable and supply of seed and bloodstock.
3. Product Development and Markets
4. Regulatory Change and Funding

This document has a list of R+D priorities which could be facilitated by the Marine Advisory Program activities at UAF (RL?)

Task 1: Species Diversification

Task 2: New Product Development

Task 3: Establish an enhancement program for commercially important shellfish.

Task 4: Explore the development of high quality and affordable shellfish seed.

Task 5. Technology transfer for improved efficiency and productivity in grading, planting harvesting, remote setting and other industry identified bottlenecks.

Shellfish Industry Research Priorities (Established October 2011)

Research priorities related to bottlenecks hindering the expansion of the shellfish mariculture industry

Topic 1. Secure seed supply, of existing seed types, oyster and geoduck: is the demand in Alaska sufficient for a stand alone hatchery? What business models are successful for smaller operations?

Topic 2. Cooperative studies/ research/ monitoring — does anybody care?

Topic 3. Increase shellfish production – improved farm efficiency, profits, expansion of existing farms, new farms — status?

Topic 4. Shellfish education, training and outreach — is there a program?

Topic 5. Shellfish disease and pathology management — is this happening?

Topic 6. Shellfish ecology / site selection — is anyone interested?

Topic 7. Enhancement and restoration of native shellfish stocks — is there a successful economic model to make this happen?

Topic 8. Invasive species management — are regulations and industry practices adequate?

Topic 9. Human health and shellfish — are state regulations, sampling and cost acceptable?

Topic 10. Water quality — what are the risks to water quality hazards?

Topic 11. New methods and new products — is technology transfer, new species development and value added processing happening?

Topic 12. Marketing strategies — does Alaskan shellfish have a good image? How can it be improved?

Topic 13. Policy and regulations — what regulations are hampering industry growth and what regulations could accelerate industry development?

Categories in industry bottlenecks

- 1. Factors leading to profitability** in existing Alaskan mariculture ventures
 - Culture technology and efficiency - *tech transfer, innovation, training, automation*
 - Cost and availability of quality seedstock – *hatchery capabilities*
 - Site selection and growth rates – *oceanography, husbandry*
 - Value added processing, distribution and marketing
 - HAB and vibrio closures – *costs, risks*
 - Product diversification – *adding value to farms and existing infrastructure*
- 2. Factors contributing to industry growth**
 - Wild stock enhancement as a market for hatcheries
 - Labor and workforce development - *especially in remote areas*
 - Streamlining regulations
 - Reducing barriers to new start-ups
 - Access to capital, markets and distribution network
 - Identifying new sites and technologies
- 3. Leadership in private and public sectors**
 - Aquaculture Research Working Group – New Zealand Example (focus stays on industry defined bottlenecks and priorities)
 - Mariculture Innovation Center – Scottish Example (public/private partnerships make priorities into projects and solve them)

ASGA Meeting 2016 Anchorage, Alaska Shellfish Culture Bottlenecks Workshop: Notes

Seed security for shellfish farms – still an issue, but improved with OA hatchery

Financing Programs – USDA Farm Service Agency best bet, loans with payoff 7-10 years, PCSGA and ESGA also have resources

Ongoing Issues – with shellfish closures and Harmful Algal Blooms (HAB's), PSP

Regulations - Mariculture Task Force – a regulatory review is underway to streamline regulations. There is an interest in smaller, less onerous permits for pilot scale projects

Enhancement – might be good for the state, but growers not very interested. Might also provide income diversification for hatcheries, helping the seed security issue (above).

Best practices – there is a need to review and document this in Alaska, and make it available to growers (on the Web?). Technology transfer is still a major priority, and a dozen growers are participating in the Sea Grant project Alaskan Mariculture Diversification, Innovation, and Technology Transfer (2015-2017), trying alternate oyster gear and participating in sugar kelp and winged kelp grow-out trials.

Information sharing – is there a platform for this (best practices, development of seaweed industry, red tide and water quality information, efficiencies in shipping, wholesale discounts? Is the ASGA website or Alaska Sea Grant good for this?

Remote sites and cost issues a big concern still – how to reduce costs?

Farm tours are valuable but could be better defined, including the intentions of the groups and the outcomes desired.

Training programs – University of Alaska SE Fisheries Technology program may be the best platform for vocational mariculture training – and have some experience with shellfish modules

Kelp – lots of interest and participation – need help with marketing and sales. Unclear if ASGA is going to take the lead on the new industry or if it should start a new group.

*thumbs up/thumbs down of the Oceans Alaska 2011
research bottlenecks update as it applies in 2016*

Seed supply YES

Site knowledge (oceanography, growing conditions, etc.)

YES

Production technology (cost, efficiency, suitability to Alaska) **YES**

Training – for new and existing growers, including business planning **YES**

Disease – monitoring, control, preventative measures **YES**

Human health and marketability – vibrio, fecal coliforms, PSP, DSP, ASP **YES**

Enhancement – not a big priority for growers but might help hatcheries

Invasive species – we have to deal with it

Discussion notes

- There was a discussion of the fact that many of the bottlenecks identified in 2006 and 2011 are still the same in 2016 in Alaska, and there is the need for an industry-led group to address some of these in order to accelerate industry growth.
- The Alaskan Mariculture Initiative may be an opportunity to address some of the issues and apply some resources to solving them.
- Progress is being made to reduce grow-out times of oysters from 5 years to 3 years through a combination of flupsy, surface trays, and suspended stacked trays in longlines or rafts.
- Growers are increasing inventories and receiving premium prices for their high quality oysters.
- We expect a steady growth of oyster sales in the coming years, with other species (mussels, seaweed, geoducks) coming online.
- University of Alaska Fairbanks and Juneau – Sea Grant is based in Fairbanks and need a mariculture extension agent .
- Mike Stekoll in Juneau – great resource for developing seaweed industry.
- At both universities - large expertise in marine sciences to tap and could be helpful for new species development (seaweed, scallops, urchins, crabs, abalone, cucumbers?), site oceanography, HAB's, disease monitoring, and training the next generation of entrepreneurs. A mariculture center could help focus these efforts.
- Need new faculty in invertebrate mariculture and mariculture engineering.
- A basic need by all farms is a trained workforce willing to work in remote areas.