

Shellfish Farming on Alaska's Coast: Exploring Scale

What do we mean when we say 'scaling up'?



As scale relates to shellfish farming and cultivation in Alaska, it is a question of appropriate number or density of shellfish for a given farm within a local ecosystem.

We want to know the largest amount of shellfish a farm can produce in a given lease area without causing significant harm to the surrounding environment.

Thinking about scale brings up questions like...

- 1** What is an appropriate size for a shellfish farm in Alaska?
- 2** Farmed shellfish like oysters eat phytoplankton just like native shellfish... will farmed shellfish out-compete the locally present species?
- 3** Is there an ecological or social threshold, or carrying capacity, for successful operations?
- 4** How do we minimize risk of Pacific oysters entering or integrating with the nearshore environment in Alaska?

The answers to these questions are specific to location...



The point at which cultivated shellfish in an area would drastically change the balance of an ecosystem is very site specific. Characteristics like farm size and ecosystem area size really matter.

Here in Alaska, most shellfish mariculture sites are relatively small (on average around 13 acres) compared to the bays, inlets, straits, and waterbodies they are located in so **there is not an immediate concern of resource depletion or outcompeting other organisms that eat phytoplankton.**

In addition, state regulations minimize the amount of surface area within a bay that may be leased to aquatic farms to 1/3 or less of a bay, bight, or cove (11 AAC 63.050).

What about shellfish farms in other parts of the ocean?

There are some studied locations, such as Tracadie Bay, Prince Edward Island, Canada and the Ría de Arousa in Spain, where the size and prevalence of shellfish farming has altered the surrounding ecosystems.

However, the relative scale at which shellfish farming takes place in Alaska is small. **Potential impacts can be identified and prevented under the current permitting process requirements**, which provide for public comment and agency scrutiny for proposed sites.



Alaska has over 30,000 square miles of shoreline.

Currently, authorized aquatic farms (shellfish and aquatic plant farms) only make up around 1,200 acres of Alaska's waters, which is roughly 2 square miles.

While not all of the state's shoreline area will be suitable for aquatic farms, Alaska has a large ocean space relative to other places for marine activities, such as mariculture, to take place.

Want to learn more or get involved in mariculture? Visit us:

Alaska Mariculture Alliance

alaskamariculture.org

Alaska Fisheries Development Foundation

afdf.org/projects/current-projects/alaska-mariculture-initiative/

Alaska Department of Natural Resources

dnr.alaska.gov/mlw/aquatic/

NOAA Fisheries

fisheries.noaa.gov/alaska/aquaculture/alaska-region-aquaculture

Want training on kelp or oyster farming? Or information on the application process for an aquatic farm lease?

Alaska Sea Grant

<https://alaskaseagrant.org/our-work/aquaculture/>

Alaska Aquaculture Permitting Portal

<http://akaquaculturepermitting.org/>

Alaska Mariculture Training & Research Center



amrtc.org



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