



Selecting an Aquatic Farm Site

Selecting your aquatic farm site is the single most important decision that you will make. It will be the most important factor in determining the success of your aquatic farm site. The organisms that you grow (i.e. the product that you will sell) are going to be totally reliant on the environment at your site for their survival. The Department of Fish & Game strongly recommends that you complete a site suitability study prior to settling on an aquatic farm site. The Mariculture Coordinator is available to assist in designing a suitability study specific to the site that you are proposing and the organism that you intend to grow.

HABITAT SUITABILITY CONSIDERATIONS

- **Water temperature**
Shellfish grow faster in warmer water as long as the water isn't too warm. Most of a shellfish's growth will occur in the summer when water temperatures are warmest. The water temperature profile at your farm site will give you an idea of when the growing season will be.
- **Food availability**
Shellfish feed off of the algae, or plankton, in the water. Clear water = no plankton. Secchi disks give an estimate of water clarity and can be used to estimate the amount of plankton in the water.
- **Substrate composition** (on-bottom farms only)
Substrate composition is very important for burrowing shellfish. Is it fairly easy to note the percentage of your site that is soft mud, firm sand, and rocky by eye. Different species of clams require different types of substrate to grow properly.
- **Intertidal exposure** (on-bottom farms only)
Farmers must consider the tidal bands (beach cross-section) in which the shellfish can grow. Long exposures to air can kill some species of shellfish. Watch your site carefully during several tidal cycles.
- **Water depth** (suspended farms only)
For suspended shellfish culture, you need to be wary of your gear hitting the bottom at low tide. This can cause damage to gear and product as well as destroy habitat for other organisms.
- **Suspended sediments**
Shellfish will smother if there is too much sediment suspended in the water. The suspended sediment will clog the gills that they use to breathe and they will die. Again a Secchi disk can tell you the approximate amount of sediment in the water. If the color of the Secchi disk appears grey or brown as you lower it into the water, sediment, not plankton, is the cause of the low water clarity.
- **Water movement**
You need adequate water flow to carry away wastes and supply nutrients but too much wave action will tear your farm site apart. Looking at the nearby shoreline can give you clues to the water movement at your site. For example, muddy shoreline means very little water movement while large logs perched high on the tideline means that the site gets a lot of big waves.
- **Fouling organisms**
Pay close attention to the number of mussels and barnacles near your site. This is a good indication of how much fouling your gear and product will be exposed to.
- **Predation**
Sea stars are the #1 predator of shellfish. Only diligent monitoring of your farm site will keep the predation low. For other predators, keep an eye out for sea otters and crab molts in the area.
- **Salinity**
Water salinity needs to be monitored for at least a year at a proposed farm site. Small creeks in the fall may become raging torrents with the spring thaw. Too much fresh water, even over the short term can kill shellfish.
- **Proximity to sensitive areas**
See the back of this sheet for a list of sensitive areas and critical habitats.
- **Pollution**
Nearby towns, cabins, haul-outs, or bird colonies can pollute your farm site and make your product inedible. Carefully consider the proximity to these areas when selecting a farm site.
- **Paralytic Shellfish Poisoning (PSP)**
Farms with high levels of PSP cannot harvest their product. PSP resides for approximately 3 years in butter clams. You can have the ADEC test the butter clams in the nearby area to get an idea of the PSP prevalence in your selected area.

SENSITIVE AREAS AS SET FORTH BY THE ADNR, ADF&G and ADEC

The following areas are considered sensitive and should be avoided when choosing an aquatic farm site. Applicants who apply in or near a sensitive area should contact the responsible state agency to determine how a farm site might be situated to avoid significant impacts.

- Herring Spawning Areas or Kelp and Eelgrass Beds (ADF&G)
- Shorebird, Waterfowl or Sea Otter Concentration Areas (ADF&G)
- Black and Brown Bear Concentration Areas and Travel Corridors (ADF&G)
- Shallow Areas - Less Than 40 Feet at MLW (mean low water) utilizing suspended culture - certain shallow areas serve as nursery areas for fish, shellfish or aquatic plants (ADF&G)
- Commercial, Subsistence or Personal Use Harvest Areas (ADF&G)
- Poor Current Circulation Areas - currents should be sufficient to disperse biological wastes (ADEC)
- Heavily Used Anchorages (ADF&G, Sport Fisheries Division; ADNR, Mining, Land and Water Division – management plans, and/or the applicable U.S. Coast Pilot)
- Floatplane Access Areas (ADEC; ADNR)
- Hatchery Harvest Areas: Aquatic farms or facilities sited within Special Harvest Areas (SHA) or Terminal Harvest Areas (THA) must have the approval of the hatchery operator/manager. (ADF&G)
- Oiled areas from the 1989 Exxon Valdez oil spill. For questions regarding specific areas contact the Pipeline Corridor Regional Office at (907) 271-4336. (ADEC)

There are some areas in the state that have been legislatively designated for purposes other than aquatic shellfish farms. The following areas are not compatible with aquatic farm development projects:

- State Game Refuges and Sanctuaries, State Parks and Marine Parks, State Critical Habitat areas and commercial geoduck harvest areas. The Fox River Flats and Kachemak Bay Critical Habitat Areas allow aquatic farms, but farms are limited to suspended culture only.
- Some Coastal Districts have designated areas for Subsistence, Natural Hazards, Recreation and Important or Critical Habitat.

Alaska Department of Fish & Game

Division of Commercial Fisheries

Mariculture Program

1255 West 8th Street

Juneau AK 99811

Ph: (907) 465-6150

Fax: (907) 465-4168

E-mail: cynthia.pring-ham@alaska.gov

<http://www.adfg.alaska.gov>

Alaska Department of Environmental Conservation

Division of Environmental Health

Food Safety & Sanitation Program

555 Cordova Street

Anchorage, AK 99501

Ph: (907) 269-7638

Fax: (907) 269-7510

E-mail: george.scanlan@alaska.gov

<http://dec.alaska.gov/eh/fss/seafood>

Alaska Department of Natural Resources

Division of Mining, Land, and Water

Aquatic Farming Program

550 West 7th Avenue, Suite 900C

Anchorage, AK 99501

Ph: (907) 269-8543

Fax: (907) 269-8913

E-mail: john.thiede@alaska.gov

<http://dnr.alaska.gov/mlw/aquatic>

Alaska Sea Grant Marine Advisory Program

Raymond Ralonde

Marine Advisory Program

1007 W 3rd Avenue #100

Anchorage, AK 99501

Ph: (907) 274.9697

Fax: (907) 277.5242

E-mail: ray.ralonde@alaska.edu

<http://seagrant.uaf.edu/map/aquaculture/index.html>