



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

August 28, 2003

Joe Donohoe
State of Alaska
Department of Natural Resources
Alaska Coastal Management Program
302 Gold Street
Juneau, AK 99801

RE: Aquatic Farm Applications

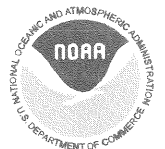
Dear Mr. Donohoe:

The National Marine Fisheries Service (NMFS) appreciates the receipt of several aquatic farm application notices. These notices contain a summary of proposed projects for the siting and operation of shellfish mariculture operations in the areas of El Capitan Pass, Slate Island, Hecate Island, Coho Cove, Point Alava, San Fernando Island, Aneskett Point, Naukati, and Kahli Cove. NMFS has Federal jurisdiction for marine and anadromous resources including fish and invertebrate species of commercial and recreational importance, marine mammals, endangered species, and Essential Fish Habitat (EFH as defined, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act). NMFS is interested in assuring that siting and operation of mariculture facilities does not pose risk of adverse impact to these resources.

The materials that NMFS received do not contain the full application, which presumably includes the applicant's evaluation of the site, identification of substrate at the site, a discussion of measures necessary to prepare the site for mariculture, and any mitigation measures being proposed for the sites. Therefore, rather than comment on each project individually, NMFS has prepared the following general recommendations for avoiding or minimizing impact to marine resources from subtidal, intertidal and suspended mariculture projects.

NMFS has reviewed the "Aquatic Farm Authorization Guidelines" developed by the Alaska Department of Natural Resources and the Alaska Department of Fish and Game. These guidelines identify "Unacceptable Areas" where mariculture operations will not be permitted, and "Sensitive Areas" where the applicant must demonstrate that the proposed mariculture operation will not cause significant impact. NMFS agrees with the designations for unacceptable and sensitive areas with the following caveat:

Kelp and eelgrass beds: These areas are currently listed as "Sensitive Areas." Mariculture operations would be allowed in these areas if the applicant can demonstrate that the activity would not have a significant impact. Kelp and eelgrass beds are known to be



highly productive marine habitats in southeast Alaska, which support a wide diversity of invertebrates and fishes, including species of commercial importance such as juvenile rockfish, juvenile cod, and juvenile Dungeness crab. These areas are also important for herring spawning. The background information included with the applications states that intertidal clam farming often requires raking of the substrate to remove rocks and algae prior to seeding, use of predator netting during grow-out, and hand raking of beds to harvest clams. Geoduck farming requires placement of rearing tubes in the substrate for grow-out of spat.

NMFS recommends against the siting and operation of any intertidal or subtidal mariculture in areas with existing kelp or eelgrass beds. Raking of the substrate both for site preparation and shellfish harvesting can easily uproot aquatic vegetation as can placement of rearing tubes. Predator netting and other equipment placed on the substrate (e.g. grow-out trays) directly kills vegetation and excludes regrowth. Because kelp and eelgrass beds are dynamic and can expand or contract over time, NMFS does not believe that it would be feasible to site any intertidal or subtidal mariculture operations within these beds. Additionally, if mariculture projects are to be located adjacent to existing kelp and eelgrass beds, the permit should include a requirement for monitoring these beds on an annual basis and moving mariculture operations if monitoring indicates that the beds are expanding into the mariculture area.

Herring Spawning Areas: These areas are also listed as sensitive areas under the guidelines. Herring is an important commercial species and is prey for many species under NMFS' jurisdiction. Herring generally spawn in eelgrass and kelp beds, and so the protections recommended above apply to these areas, as well. In addition, NMFS recommends that on-site activities be restricted during herring spawning periods. Mariculture facility operators should be prohibited from undertaking any activities that could adversely impact herring eggs until the eggs have hatched.

In addition to the siting issues discussed above, NMFS offers the following recommendations for the operation of shellfish mariculture facilities:

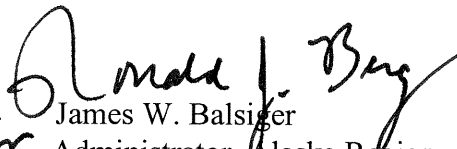

Processing: None of the applications provides any information on proposed processing methods or facilities. NMFS recommends that permits prohibit the dumping or discarding of shells or shell materials in the intertidal or subtidal zones.

Predator exclusion: The information provided by the Department of Natural Resources indicates that predator exclusion is often practiced for intertidal and subtidal mariculture sites. NMFS recommends against the use of structural predator exclusion techniques, such as cages or pens. In NMFS funded research in South Carolina, these structures caused significant changes to the hydrodynamic regimes in the vicinity of the structures resulting in changes in sediment attributes such as grain size and chlorophyll *a* concentrations. Mesh netting, while also having concerns such as algae growth, is likely to have less adverse impact on EFH than structural predator exclusion techniques.

Finally, NMFS recommends restraint in determining the density of mariculture sites within a given area. Little information is available on the carrying capacity of mariculture. Because mariculture excludes fish, invertebrate, mammal and bird predators, it has an adverse impact on marine species foraging in the intertidal and subtidal area. If mariculture sites are small and relatively dispersed, the potential impacts are also likely to be small. However, if mariculture utilizes a large portion of the intertidal and subtidal habitat within an area, the potential for locally significant adverse impacts to predator species increases. This issue has only recently begun to be evaluated in the United States, Canada and elsewhere. Until sufficient information on carrying capacity is available, mariculture operations should be designed to ensure that adequate intertidal and subtidal areas are available for predator use.

Please contact Katharine Miller at (907) 586-7643 if you have any questions.

Sincerely,


For  James W. Balsiger
Administrator, Alaska Region