



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of  
Fish and Game**

DIVISION OF COMMERCIAL FISHERIES  
Headquarters Office

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December 5, 2017

Karen Cougan  
Aquatic Farm Program  
Southcentral Region  
550 West 7th Avenue, Suite 900C  
Anchorage AK 99501

Re: Alaska Department of Fish and Game Preliminary Review Comments  
Denkinger/Silver Bay Seafoods, LLC Proposed Aquatic Farm Site – Pt Olga  
**DNR File No.: ADL 232886**

Dear Ms. Cougan:

The Alaska Department of Fish and Game (ADF&G) has reviewed the subject proposal and has done a preliminary review and determination of this proposal relevant to authorizations regulating permitting of this activity (16.40.105 and 5 AAC 41.200–400). The subject proposal is being recommended for approval of an aquatic farm operation permit with stipulations to meet review criteria provisions specified in the Alaska Aquatic Farming Regulations. The preliminary review has not considered any other state agency or public comments. Any new information that may impact compliance with applicable department provisions will be considered in the final department review for an aquatic farm operation permit. A brief description of the proposed project and recommended stipulations are summarized below.

**Proposed Project Description**

The aquatic farm operation location encompasses a ten-sided parcel (3700 ft x 1085 ft x 985 ft x 490 ft x 730 ft x 630 ft x 405 ft x 850 ft x 845 ft x 2310 ft, Parcel 1), totaling 182 acres, near Olga Point in waters of Krestof Sound, approximately 11.3 nautical miles from the community of Sitka, Southeast Alaska, on state-owned submerged lands. Access to the site is by boat from Sitka.

Silver Bay Seafoods, LLC proposes to cultivate a maximum of 34 million Pacific oyster annually with a three year increase to allow seed suppliers to expand to meet the seedstock market. The resulting annual harvest production is projected to be 4.8 million to 6.5 million oysters at marketable size with increases over all years.

The company proposes to use grow-out raft and tray culture system for cultivating Pacific oysters, consisting of a maximum of 132 grow-out rafts (27 ft x 27 ft) and 72 10-tiered tray stacks, suspended

from each raft at a maximum depth of 12 ft. A maximum 95,040 trays equivalent to 9,504 stacks will be used to hold the oysters during the operation. Each tray is made of coated steel measuring 22 inches x 22 inches x 6 inches. Convoys made up of 6 grow-out rafts will be configured together in a line approximately 1,250 ft in length, with 23 ft of chain connecting the rafts. A total of 22 convoys, spaced 165 ft to 500 ft apart, are proposed to be installed at the proposed location. The anchoring system for each convoy will consist of a set of three 2,500 lb 1-cubic yard concrete blocks at each end placed 20 ft apart with a line attached to a retrieval buoy. The marker buoy or surge buoy will consist of a 4 x 4 ft platform with 2 rotomold floats.

### **Recommended Stipulations**

Several concerns were raised during a preliminary review evaluation of the subject proposal (Attachment No. 1) relating to marine mammals, invasive species, and access and use of wildlife in adjacent lands by hunters and trappers. It is recommended that the stipulations listed below be added to the aquatic farm lease and aquatic farm operation permit authorizations, where appropriate, and an advisory of the recommendations be provided in the Department of Natural Resource Preliminary Decision that are provided to the applicant and the public.

#### **Marine Mammal**

There are concerns with the project as proposed including marine mammal disturbances during the aquatic farm operation installation and daily activities, competition for space as marine mammal habitat and farm area overlap in the project area, and exchanges with marine mammals and the large number of convoys, rafts, and anchor systems. Very little is known about the impacts to marine mammals for an aquatic farm operation of this size and configuration.

The following stipulations are recommended to minimize impacts to marine mammals in the area of the proposed aquatic farm operation:

- The lease holder/permit holder will implement best management practices to reduce impacts to marine mammals in the area of Olga Point including:
  - a. regular maintenance of farm structures (i.e. keep lines secured and anchor wraps under tension);
  - b. limit the use of underwater lighting;
  - c. ensure waste material and debris are collected and disposed of correctly;
  - d. use caution when operating vessels;
  - e. directing aquatic farm workers to avoid interacting with or feeding marine mammals; and
  - f. monitor marine mammal species in the vicinity of the farm.
- Any marine mammal entanglements should be immediately reported to the department aquatic farming coordinator (phone 907-465-6150 and [dfg.dcf.aquaticfarming@alaska.gov](mailto:dfg.dcf.aquaticfarming@alaska.gov)) and National Marine Fisheries Service Alaska 24 hr. Stranding Hotline, phone – (877) 925-7773.

In addition, we recommend that the applicant contact NOAA Fisheries Small Take Program at (301) 713-2322 to assess any impacts to whales and other non-ESA listed species and evaluate if a disturbance (“take”) permit is necessary under the Marine Mammal Protection Act.

Potential introduction of invasive species

The following stipulation is recommended to minimize the potential introduction of invasive species:

- The lease holder/ permit holder will implement best management practices to prevent the introduction or spread of aquatic invasive species that can occur when aquatic farm activities translocate gear and product including:
  - a. Any previously-used in-water infrastructure must be inspected for nonindigenous or invasive species prior to relocation. If non-native species are detected, infrastructure must be decontaminated by removing it from the water. It may be left “high and dry” for at least 30-days or thoroughly washed with hot, pressurized water prior to being re-submerged. Contact the Invasive Species Coordinator at (907) 465-6183 for more details.
  - b. Use “hot dipping” protocols to remove fouling organisms from Pacific oysters; this is a common practice in aquatic farming.
  - c. Develop a monitoring schedule to periodically inspect in-water infrastructure for invasive species, such as *Didemnum vexillum*.
  - d. Develop a response plan that identifies steps for quickly responding to observance of invasive species in any aspect of in-water operations.
- Any observations of invasive species should be immediately reported to the ADF&G aquatic farming coordinator (907)465-6150; [dfg.dcf.aquaticfarming@alaska.gov](mailto:dfg.dcf.aquaticfarming@alaska.gov)) and to the ADF&G invasive species coordinator (907)465-6183; [dfg.dsf.invasivespecies@alaska.gov](mailto:dfg.dsf.invasivespecies@alaska.gov).

Access by Existing Fishery Uses

There are no concerns relating to existing commercial, sport, and personal use fishery uses for the location of the proposed aquatic farm. Subsistence use harvest for marine invertebrate, seal hunting, deer hunting, and salmon fishing is known to occur in the vicinity. The location of the aquatic farm is also near an established permitted aquatic farm in Krestof Sound.

The following stipulation is recommended to maintain access and minimize impacts for existing fishery uses in the area including commercial, sport, personal, and subsistence uses:

- The aquatic farm operation may not impede access to plants, fish, and wildlife resources, and shellfish other than the species being cultured at the site to the extent that such access does not disrupt the operation of the aquatic farm, disturb the species being cultured, or damage any of the shellfish aquatic farm culture equipment, facilities, or gear.

Access by hunters and trappers

There are concerns relating to access and use of the adjacent uplands for recreational and subsistence hunting and trapping. The location of the aquatic farm is popular for anchoring boats used by hunters and trappers as it is a sheltered location. The following stipulation is recommended to maintain access to the adjacent lands:

- The aquatic farm operation must maintain access and minimize impacts for wildlife use in adjacent lands to the extent that such access does not disrupt the operation of the aquatic farm, disturb the species being cultured or damaged any of the shellfish aquatic farm culture equipment, facilities or gear.

Thank you for the opportunity to provide comments on this aquatic farm proposal. If you have any questions, please contact me at (907) 465-6150.

Sincerely,

ckp

Cynthia Pring-Ham  
Aquatic Farming Coordinator

Enclosure: Preliminary Review

ecc: Sam Rabung, Aquaculture Section Chief, ADF&G, Juneau

## **Enclosure No. 1**

### **Preliminary Review**

#### **Proposed Project Description**

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Silver Bay Seafoods, LLC proposes to cultivate a maximum of 34 million Pacific oyster annually with a three year increase to allow seed suppliers to expand to meet the seedstock market. The resulting annual harvest production is projected to be 4.8 million to 6.5 million oysters at marketable size with increases over all years.

The company proposes to use grow-out raft and tray culture system for cultivating Pacific oysters, consisting of a maximum of 132 grow-out rafts (27 ft x 27 ft) and 72 10-tiered tray stacks, suspended from each raft at a maximum depth of 12 ft. A maximum 95,040 trays equivalent to 9,504 stacks will be used to hold the oysters during the operation. Each tray is made of coated steel measuring 22 inches x 22 inches x 6 inches. Convoys made up of 6 grow-out rafts will be configured together in a line approximately 1,250 ft in length, with 23 ft of chain connecting the rafts. A total of 22 convoys, spaced 165 ft to 500 ft apart, are proposed to be installed at the proposed location. The anchoring system for each convoy will consist of a set of three 2,500 lb 1-cubic yard concrete blocks at each end placed 20 ft apart with a line attached to a retrieval buoy. The marker buoy or surge buoy will consist of a 4 x 4 ft platform with 2 rotomold floats.

#### **Established Fishery Uses**<sup>1, 2</sup>

There are no concerns relating to existing commercial, sport, and personal use fishery uses for the location of the proposed aquatic farm. Subsistence use harvest for marine invertebrate, seal hunting, deer hunting, and salmon fishing is known to occur in the vicinity. The location of the aquatic farm is also near an established permitted aquatic farm in Krestof Sound.

#### **Marine Mammals**<sup>3</sup>

The following is excerpted from Division of Wildlife, Marine Mammal Program, subject matter expert for the department on potential impacts to marine mammal in the area.

“Concerns with the project as proposed include marine mammal disturbances during the installation and operation of the aquaculture system, species overlap in the project area, and the

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<sup>1</sup> Comments from ADF&G Division of Commercial Fisheries subject matter experts

<sup>2</sup> Comments from ADF&G Division of Subsistence subject matter experts

<sup>3</sup> Comments from ADF&G Division of Wildlife marine mammal subject matter experts

engagement of marine mammals with a system this large is unknown. Please see the supporting information, below.

Recommendations include the possible use of deterrents (e.g. pingers) on the infrastructure to alert animals which may help reduce entanglements, however this would contribute to the issue of competition for space and noise (see below). Additionally, scaling down the size of the farm may allow time for impacts to be assessed through monitoring with the potential for an increase to the square footage during an amendment.

A 2017 NOAA report (Price et al. 2016) addressing potential impacts of aquaculture farms on protected marine species, including marine mammals, was unable to determine if farms posed little risk or if harmful interactions have not yet been detected due to the low number and density of farms in the U.S. (Price et al. 2016). Three key areas of potential impacts were identified: competition for space, entanglement and underwater noise disturbances (Clement 2013). Typically in the U.S. farms are being permitted at smaller scales (less than 100 acres) (Price et al. 2016). This applicant is requesting the use of 182 acres for this oyster farm near Olga Point, SE Alaska.

While it is largely unknown how marine animals perceive and respond to man-made structures in the water, animals using echolocation (toothed whales, dolphins, and porpoises) can generally navigate through or around them (Markowitz et al. 2004) while baleen whales (such as humpback, gray, and fin whales) are at higher risk of entanglement. Additionally, while entanglement of pinnipeds, including seals and sea lions, in active fishing gear and marine debris are well-documented, interactions with aquaculture gear have not yet been reported.

NOAA suggests comparisons between aquaculture and fishery gear are needed to thoroughly evaluate the similarities and differences between all components of aquaculture and fishing gear, and to assess the potential risk associated with all gear interactions. Entanglement of marine mammals in fishing gear and marine debris can cause serious injury and/or death (NOAA 2014). Noting, while oyster farming is not an attractant as a food source to all species (such as mussel or finfish farming), marine mammals can be attracted as a place of shelter or novel structure for exploration (Price et al. 2016).

Siting farms in areas which minimize the likelihood of overlap with migration routes, breeding and feeding habitats is recommended (Price et al. 2016, Clement 2013). There are no nearby recognized marine mammal haulouts to this proposed farm however this site is within two identified biologically important areas for cetaceans<sup>4</sup>: 1) for the migration route (November January and March –May) and feeding (May-November) of the gray whale which is a near-shore bottom feeding whale and 2) an important area for humpback whale spring feeding (March – May) (an ESA<sup>5</sup> listed species). Noting, other marine mammal species may be present in the area throughout the year.

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<sup>4</sup> <http://cetsound.noaa.gov/important>

<sup>5</sup> Endangered Species Act

If permitted, it is advised that in addition to the section 7 review which will occur under the Endangered Species Act<sup>6</sup>, we recommend that the NOAA Fisheries Small Take Program at (301) 713-2322 is contacted to assess any impacts to gray whales and other non-ESA listed species and evaluate if a disturbance (“take”) permit is necessary under the Marine Mammal Protection Act. The best known practices to reduce impacts to marine mammals include regular maintenance of farm structures, including keeping lines secured and anchor wraps under tension, limiting the use of underwater lighting, ensuring waste material and debris are collected and disposed of correctly, using caution when operating vessels, and directing farm workers to avoid interacting with or feeding marine mammals. Any marine mammal entanglements should be immediately reported to the NMFS Alaska 24 hr. Stranding Hotline: (877) 925-7773.”

References:

Clement D (2013) Effects on Marine Mammals. Chapter 4 in: Ministry for Primary Industries. Literature review of ecological effects of aquaculture. Report prepared by Cawthron Institute, Nelson, New Zealand

Markowitz TM, Harlin AD, Würsig B, McFadden CJ (2004) Dusky dolphin foraging habitat: overlap with aquaculture in New Zealand. *Aquatic Conservation: Marine and Freshwater Ecosystems* 14:133– 149

National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program. 2014 Report on the Entanglement of Marine Species in Marine Debris with an Emphasis on Species in the United States. Silver Spring, MD. 28 pp

Price, C.S., E. Keane, D. Morin, C. Vaccaro, D. Bean, and J.A. Morris, Jr. 2016. Protected Species & Longline Mussel Aquaculture Interactions. NOAA Technical Memorandum NOS NCCOS 211. 85 pp.”

**Wildlife Use**<sup>7</sup>

There are concerns relating to access and use of the adjacent uplands for recreational and subsistence hunting and trapping. The location of the aquatic farm is popular for anchoring boats used by hunters and trappers as it is sheltered location.

The following is an excerpt from the Division of Wildlife subject matter expert for the department:

“The Olga Point location is within Wildlife Analysis Area (WAA) 3001. WAA 3001 is the Nakwasina/Neva Straight area. In 2016, 352 Sitka based hunters spent 641 days hunting this WAA and reported harvesting 484 deer. This is roughly 30% of the deer taken by Sitka hunters on Baranof Island and is the highest total for any WAA in all of Unit 4 (Admiralty, Baranof,

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<sup>6</sup> The federal nexus is the project takes place in navigable waters which requires a U.S. Army Corps of Engineers permit

<sup>7</sup> Comments from the department subject matter expert

Chichagof). The next highest total is the Sitka road system which accounted for approximately 20% of the Baranof Island harvest by Sitka residents. So although the data can't be broken down to this specific location, it is within the WAA with the highest use and harvest by local deer hunters of any location in Unit 4.”

### **Advisory to Applicant and State and Federal Agencies**

Please inform the applicant that the following site specific conditions listed below are being recommended for the aquatic farm operation permit for this location.

To minimize marine mammal disturbances:

- The lease holder/permit holder will implement best management practices to reduce impacts to marine mammals in the area of Olga Point including:
  - g. regular maintenance of farm structures (i.e. keep lines secured and anchor wraps under tension);
  - h. limit the use of underwater lighting;
  - i. ensure waste material and debris are collected and disposed of correctly;
  - j. use caution when operating vessels; and
  - k. directing aquatic farm workers to avoid interacting with or feeding marine mammals;
  - l. monitor marine mammal species in the vicinity of the farm.
- Any marine mammal entanglements should be immediately reported to the department aquatic farming coordinator (phone 907-465-6150 and [dfg.dcf.aquaticfarming@alaska.gov](mailto:dfg.dcf.aquaticfarming@alaska.gov)) and National Marine Fisheries Service Alaska 24 hr. Stranding Hotline, phone – (877) 925-7773.

To minimize the potential introduction of invasive species:

- The lease holder/ permit holder will implement best management practices to prevent the introduction or spread of aquatic invasive species that can occur when aquatic farm activities translocate gear and product including:
  - e. Any previously-used in-water infrastructure must be inspected for nonindigenous or invasive species prior to relocation. If non-native species are detected, infrastructure must be decontaminated by removing it from the water. It may be left “high and dry” for at least 30-days or thoroughly washed with hot, pressurized water prior to being re-submerged. Contact the Invasive Species Coordinator at (907) 465-6183 for more details.
  - f. Use “hot dipping” protocols to remove fouling organisms from Pacific oysters; this is a common practice in aquatic farming.



- g. Develop a monitoring schedule to periodically inspect in-water infrastructure for invasive species, such as *Didemnum vexillum*.
- h. Develop a response plan that identifies steps for quickly responding to observance of invasive species in any aspect of in-water operations.
- Any observations of invasive species should be immediately reported to the ADF&G aquatic farming coordinator (907)465-6150; [dfg.dcf.aquaticfarming@alaska.gov](mailto:dfg.dcf.aquaticfarming@alaska.gov)) and to the ADF&G invasive species coordinator (907) 465-6183; [dfg.dsf.invasivespecies@alaska.gov](mailto:dfg.dsf.invasivespecies@alaska.gov) .

In addition, we recommend that the applicant contact NOAA Fisheries Small Take Program at (301) 713-2322 to assess any impacts to whales and other non-ESA listed species and evaluate if a disturbance (“take”) permit is necessary under the Marine Mammal Protection Act.

To maintain access and minimize impacts for existing fishery uses including commercial, sport, personal, and subsistence uses:

- The aquatic farm operation may not impede access to plants, fish, and wildlife resources, and shellfish other than the species being cultured at the site to the extent that such access does not disrupt the operation of the aquatic farm, disturb the species being cultured, or damage any of the shellfish aquatic farm culture equipment, facilities, or gear.

To maintain access and minimize impacts for wildlife use by hunters and trappers of the adjacent lands:

- The aquatic farm operation must maintain access and minimize impacts for wildlife use in adjacent lands to the extent that such access does not disrupt the operation of the aquatic farm, disturb the species being cultured or damaged any of the shellfish aquatic farm culture.