

**STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER  
SOUTHCENTRAL REGION LAND OFFICE**

**PRELIMINARY BEST INTEREST FINDING  
AQUATIC FARMSITE LEASE**

**APPLICANT: JERRY JOHNSON  
ADL #108095**

**LOCATION: SOUTHEAST DOYLE BAY**

The Department of Natural Resources is accepting public comment on the following preliminary decision document for the approval of an aquatic farm site. **Written comments must be received on or before 5:00 p.m., Thursday, September 15, 2011.**

**PROPOSED ACTION:** The applicant is requesting the approval of 2 parcels for littleneck and geoduck clam culture. The parcels are located in the southeastern portion of Doyle Bay, approximately 6 miles southeast of Craig, Alaska. Parcel #1 is proposed to be 250 ft. x 250 ft. totaling 1.4 acres. Within the parcel will be one work raft for holding clams until sale and for holding clam seed to acclimate it before planting. Parcel #2 is proposed to be a 310 ft. x 675 ft. x 491 ft. x 780 ft. area totaling 5.9 acres for on-bottom littleneck clam and geoduck culture. The parcel will be divided into 5 sections, each section further divided into 40 ft. sub-sections. If approved, in year one of the lease the first sub-section will be harvested to take off excess littleneck clams and then reseeded. In year two, the second sub-section will be harvested and then re-seeded. This will continue each year for the first five (5) years of the lease. The process will then start again in year six(6) on sub-section one (1).

The total combined acreage of the sites is 7.3 acres, more or less.

The proposed farm site locations are only accessible by boat or floatplane. A location map is attached to this decision.

**AUTHORITY:** AS 38.05.035; AS 38.05.070; AS 38.05.075; AS 38.05.083; AS 38.05.127;  
AS 38.05.128; 11 AAC 63.020

This decision addresses and is based on those issues under the authority of the Department of Natural Resources (DNR) under Title 38. While other issues may be addressed that are not within the scope of DNR's responsibilities, this decision's purpose is to determine whether or not to issue a DNR lease and does not make any determinations whatsoever on the issuance of other agency authorizations that are necessary for aquatic farming activities. Information included in the original preliminary decision document may not be included in this document if conditions have not been altered. Original preliminary decisions for this lease can be obtained by contacting the aquatic farm program manager for the DNR in Anchorage.

**ADMINISTRATIVE RECORD:** The administrative record for this renewal application is **ADL 108095**

**LOCATION:**

**USGS MAP COVERAGE:** Craig (B-4) Quadrangle

**NAUTICAL CHART:** 17405

**LEGAL DESCRIPTION:**

Those tide and submerged lands located in southeast Alaska lying within:

Township 74 South, Range 81 East, Copper River Meridian,

W ½ of Section 36 – located in the southeast portion of Doyle Bay, encompassing two parcels of tide and submerged land. Parcel one is proposed to measure 250 ft. x 25 ft. with work rafts within the parcel area. Parcel two is proposed to measure 675 ft. x 491 ft. x 780 ft. x 310 ft for planting geoduck clams in the lower sub-tidal area and littleneck clams in the inter-tidal area., according to the site drawings attached and made a part of the lease authorized under ADL 108095 and labeled Attachment B, containing 7.3 acres, more or less;

Parcel #1 – Workraft and Nursery Area - 250 feet x 250 feet = 1.4 acres

NE Corner: Latitude 55 24.470 N Longitude 133 02.547 W  
SE Corner: Latitude 55 24.436 N Longitude 133 02.587 W  
SW Corner: Latitude 55 24.459 N Longitude 133 02.647 W  
SE Corner: Latitude 55 24.093 N Longitude 133 02.608 W

Parcel #2 – Littleneck Clam and Geoduck Clam Grow-Out Area –  
675 ft. x 491 ft. x 780 ft. x 310 ft = 5.9 acres

NE Corner: Latitude 55 24.772 N Longitude 133 02.473 W  
SE Corner: Latitude 55 24.667 N Longitude 133 02.413 W  
SW Corner: Latitude 55 24.672 N Longitude 133 02.556 W  
SE Corner: Latitude 55 24.801 N Longitude 133 02.547 W

Parcels are located in the Ketchikan Recording District.

**GEOGRAPHIC:** The proposed farm site is located on state-owned tide and submerged lands off the southeast shore of Doyle Bay approximately 6 miles southeast of Criag, Alaska.

**POLITICAL INFORMATION:**

**BOROUGH/MUNICIPALITY:** This existing aquatic farm application is outside of an organized borough.

**REGIONAL CORPORATION:** Sealaska Corporation

**FISH AND GAME ADVISORY COMMITTEES:** Region 2 – Southeast, (1A) Craig Fish and Game Advisory Committee, Klawock Fish and Game Advisory Committee and the Hydaburg Fish and Game Advisory Committee.

**PLANNING AND CLASSIFICATION:**

**LAND MANAGEMENT PLAN:** Prince of Wales Island Area Plan Amendment, Unit 17 –  
**Craig/Klawock – Management Summary/Intent for State Tidelands:** Tideland areas within Regional

Management Unit 17 contain important areas of wildlife habitat and commercial and non-commercial fishery harvest opportunities. Where these values are especially spatially concentrated, the designation of either Habitat (Ha) or Harvest (Hv) is applied or where both resources exist, they are assigned a co-designation of Habitat/Harvest (HaHv). Tidelands with these designations are to be managed so that the resources identified in the specific tideland unit within the Resource allocation Table are to be maintained and protected.

Tidelands designated Habitat areas often consist of one or more of the following resources: estuarine wetlands, marine mammal concentrations, shorebirds/waterfowl and trumpeter swan concentrations, herring spawning areas and high density eelgrass or kelp beds or salmon spawning or rearing areas. Areas designated as harvest are characterized by commercial salmon, geoduck, sea cucumber, Dungeness crab, kelp and spawn-on-kelp harvest concentration areas or intensive personal use harvest areas. Three areas are designated or pre-authorized aquatic farm sites reflecting the 2003 State of Alaska Aquatic Farm Auction Booklet. These areas are to be managed consistent with the booklet and with other state and federal requirements. The closest pre-authorized aquatic farm site is located in south Trocadero Bay.

**CT-17, Doyle Bay:** The proposed aquatic farm site is within Unit CT-17, which has a tideland designation of Habitat (Ha). The management intent is to protect estuarine wetland areas, associated waterfowl concentrations and anadromous stream.

Resources, Uses, Additional Information – Occupying tidelands at the end of Doyle Bay, the shoreline area consists of gravel beaches, exposed tidal flats and estuarine/marine wetlands. Four anadromous stream outlets provide habitat for coho, chum and pink salmon and the wetland areas provide habitat for waterfowl concentrations. The adjacent uplands are Native corporation owned.

**SURFACE MINERAL ORDERS:** With the exception of the mouths of four anadromous fish streams, all state lands in this subunit are open to mineral entry.

**CULTURAL RESOURCES:** Prince of Wales Island has a long history of settlement. The Office of History and Archaeology reviews state authorizations to determine if there may be adverse effects on cultural resources and makes recommendations to mitigate those effects.

## **SURVEY AND APPRAISAL:**

**SURVEY:** A survey is not required by law before issuing a 10-year negotiated lease. However, the department has the right to require one in the future, at the applicant's expense, if boundary conflicts or disputes over acreage arise.

**APPRAISAL:** The Division of Mining, Land and Water has approved an administrative lease fee schedule for aquatic farm sites that meet the conditions listed within the schedule. The most current lease fee schedule will be used to establish the fair market rental each lessee must pay. The applicant has the option to have a site-specific appraisal done, at the applicant's expense, before the lease is issued, if he or she does not wish to use the fee schedule. If an applicant opts for a site-specific appraisal, the division-approved appraisal will establish the rental for the lease and the fee schedule will no longer be an option.

**PUBLIC/AGENCY NOTICE AND COMMENTS:** Public notice of the proposal has been sent to various newspapers, post offices, agencies, boroughs/cities, native corporations, Fish and Game Advisory committees, etc. Public and agency comments are welcome during the comment period and will be considered in the final

best interest finding. Only those who provide written comments during the comment period or who testify at a public hearing will be sent a copy of the final best interest finding and will be eligible to appeal. The final best interest finding will include an explanation of the appeal process. **The public comment period begins on August 17, 2011 and will end at 5:00 p.m. on Thursday, September 15, 2011.**

The preliminary best interest finding is subject to public comments received during the comment period. The final best interest finding will consider and address any comments related to the subject proposal and will be available on or about October 10, 2011. If significant changes occur to this decision as a result of public comments received, additional notice will be sent to those who provided comments, either in writing or by testifying at a public hearing.

### **Evaluation by the Alaska Department of Fish and Game**

***I. Physical and Biological Characteristics:*** Based on the information provided by the applicant on the site physical and biological characteristics, the proposed sites appear capable of supporting the farm activities proposed. Details listed for the proposed areas are summarized below.

***Protection from Oceanographic and Atmospheric Extremes:*** The physical exposure notes from Alaska ShoreZone imagery mapped data<sup>1</sup> shows the area as “protected” defined as a maximum effective fetch of < or = to 10 km. The proposed support facility structures and intertidal farm culture gear have a sound configuration and anchoring system and are comparable to existing farm gear used in Southeastern Alaska that can withstand ocean and atmospheric conditions.

***Sufficient Environmental Conditions:*** The proposed aquatic farm operation project is in an area that appears to have sufficient water exchange, water temperatures, currents, salinity, and primary production to support an aquatic farm and maintain healthy environment for other marine organisms.

***Sufficient Water Depth:*** No depth information was provided by the applicant on depth of gear and depth of water at site at low tide. Based on the NOAA Chart 17405, the water depth at the aquatic farm site Parcel 1 is in depths between 8 and 19 fathoms (48 ft to 114 ft range) and is sufficient to prevent gear from grounding and impacting the benthos under floating structures. This criterion is not applicable for the proposed intertidal site and culture gear on Parcel 2.

***Eelgrass and Kelp Beds Maintained:*** Eelgrass and kelp habitats are among some of the most productive and biologically diverse. Among other things, eelgrass and kelp beds helps prevent erosion and maintain stability of near-shore environments and provide food, breeding areas, and protective nurseries for fish, shellfish, crustaceans, and many other animals. Operations must be done in a manner to minimize turbidity in the area and to prevent any trampling or shading that may impact the health and abundance of eelgrass beds.

Imagery data for intertidal areas shows patchy bio-bands of eelgrass, *Zoster* sp., adjacent to one intertidal site and one suspended site parcels, Parcels 1 and 2. There is the potential that access to Parcels 1 and 2 and/or structures and gear used at these parcels, may result in trampling or shading continuous eelgrass beds that may significantly and adversely impact the health and abundance of eelgrass beds near these sites. The following operation permit conditions for the intertidal parcel will apply to this amendment to maintain the health and abundance of eelgrass beds and avoid significant adverse impacts to this important resource:

<sup>1</sup> NOAA (National Oceanic and Atmospheric Administration), Fisheries, National Marine Fisheries Service. Alaska ShoreZone: Coastal Mapping and Imagery. <http://akr-mapping.fakr.noaa.gov/szflex/> (Accessed July 2011).

**A 10-foot buffer zone will be required around established eelgrass beds (*Zostera* sp) to maintain the health and abundance of eelgrass beds in the area. You will not conduct operational activities or place culture gear within the buffer zone. If new data becomes available on eelgrass beds in the area, further measures to increase or decrease this buffer may be required. Entrance to and exit from intertidal parcels must occur where eelgrass is least dense or absent.**

If health and the abundance of eelgrass and kelp beds in the area are not properly maintained, project modifications to the aquatic farm operations permit will be made to correct the condition.

**Anadromous Fish Streams:** Anadromous streams catalogued for various salmon species are located near the proposed project parcels<sup>2</sup>. However, the proposed aquatic farm site parcels are not located within 300 feet of the mouth of an anadromous fish stream. There are four (4) anadromous streams in the head of Doyle Bay. The nearest stream is approximately 1,100 ft away from Parcel 1 and the nearest anadromous streams close to Parcel 2 is approximately 1,100 ft away. Pink salmon have been observed to school and stage in the area prior to entering these stream systems. The applicant must be warned that fecal coliform levels may be high due to the presence of fish populations congregating in the area at the mouth of these streams that may impact state water classification of the area.

It is unlikely that the current design of the proposed project gear on Parcel 2 and structures and gear on Parcel 1 will significantly affect fish rearing habitats for salmonids and other marine fishes and will allow adequate fish passage for salmonid adults that may be in the milling or migrating through the area. Floating structures in the bay could impede salmon migration enough to draw sportfish angler use to the area during August and September for coho salmon and increase angler efficiency and thereby causing concern for nearby salmon stream coho stocks. This could be remedied later by a local seasonal angling closure if it was an issue.

**II. Existing Uses not Significantly Altered:** The proposed aquatic farm site will not significantly alter an established use defined in regulations as a commercial fishery, sport fishery, personal use fishery, or subsistence fishery.

**Commercial Fisheries:** The proposed aquatic farm is located in ADF&G Commercial Fisheries Division statistical area sub-district 103-60. The proposed aquatic farm site project is not expected to cause any significant alterations to the existing commercial fishery uses in the area as long as conditions are attached to their operations permit. Details on each commercial fishery and conditions are listed below.

**Geoducks:** No commercial geoduck dive fishery takes place at either intertidal site parcel. Harvest data shows commercial geoduck dive fishery landings took place in 2008 and 2010 for this area. Landings did Geoduck clam wild stock are not known to grow naturally in intertidal areas in Alaska.

**Sea cucumber:** Harvest data shows commercial sea cucumber fishery landings took place in 2009 for this area.

**Red Sea Urchins:** No commercial red sea urchin dive fishery takes place at the site.

<sup>2</sup>Johnson, J. and K. Klein. 2009. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, Effective June 1, 2009. Alaska Department of Fish and Game, Special Publication No. 09-03, Anchorage.

**Salmon:** Harvest data shows commercial salmon fisheries using purse seining (sockeye, coho, pink, and chum salmon), hand trolling (Chinook, sockeye, coho, chum, and pink salmon), and power trolling (Chinook, sockeye, coho, pink, and chum) in this area during 2010. No salmon set netting or gillnet salmon fisheries occurred for this area in 2010. It is common to see pink salmon schooling and staging in the Bay before entering anadromous streams at the head of Doyle Bay. The average pink returns for the area follow:

Subdistrict	Area	Salmon Type	Numbers
103-60-065	Doyle Creek	Pink	19,300
103-60-066	Doyle Bay East Side	Pink	4,000
103-60-067	Doyle Bay South Head	Pink	1,500
103-60-068	Doyle Bay SE Side	Pink	1,200

**Herring:** Commercial Pacific herring landings occurred in this statistical area in 2010.

**Shrimp:** Commercial spot shrimp landings occurred in this statistical area in 2010.

**Dungeness crab:** Harvest data shows landings from commercial Dungeness crab fishery in 2010 from this statistical area 103-60. Aerial surveys of the Dungeness grounds in central and northern Southeast are conducted every June after the commercial fishery opens. Statistical area 103-60 is not part of the annual aerial survey so effort data can only be described for the statistical area itself, and not for any of the bays or inlets that are part of statistical area 103-60. However, sea otters have likely already reduced Dungeness numbers in Doyle Bay, and have likely already displaced much of the commercial, personal use, and subsistence Dungeness effort in Doyle Bay.

**Sport Recreational Fishery:** The area is not a significant site for Sport Anglers. Traditional troll and bottom fishing area for sport fishers is not known to occur in this area. It is likely that the project area is also used by personal use Dungeness fishermen. Due to their design, oyster farms have not seemed to have significant negative impact on anglers. The proposed aquatic farm site is not expected to cause any significant alterations to the existing sport recreational fishery use.

**Subsistence Use:** Statistical area 103-60 lies within Section 3-B. There is a customary and traditional use finding for Dungeness in this section, so fishing for Dungeness under subsistence regulations is allowed in Doyle Bay. Since no permit system is in place for the personal use and subsistence fisheries, the amount of effort and harvest in the area would be difficult to gauge. The Statewide Harvest Survey does tally Dungeness personal use harvest in Southeast but summarizes these data on a wider scale than district or statistical area. The proposed aquatic farm site is not expected to cause any significant alterations to the existing subsistence use.

**Anchorage:** This area is not known to have any critical vessel anchorages.

**III. Compatible with Fish and Wildlife Resources:** The proposed aquatic farm site is compatible with fish and wildlife resources in the area.

**Predator and Pest Control Methods:** Predator exclusion devices to be used at the proposed site

are expected to be utilized in a manner that minimizes impacts on non-targeted fish and wildlife resources in the area.

**Sensitive Wildlife:** The proposed aquatic farm site is not expected to adversely impact seabird colonies, sea lion haulouts and rookeries, seal haulouts and pupping areas, and walrus haulouts.

**Sea Bird Colonies:** There are no sea bird colonies identified within 1 mile of the proposed sites.<sup>3</sup>

**Eagle Nest:** There are no eagle nests within 330 ft of the proposed project site parcels<sup>4</sup>

**Sea Mammal Habitat:** There are no sea mammal haul outs within 1 mile of the proposed sites<sup>5</sup>.

**Endangered species:** The proposed aquatic farm site will not adversely impact endangered and threatened species recovery and habitat efforts.

#### **IV. Operation and Development Plan:**

**Increase Productivity:** The operation and development plan for this project sufficiently describes how the operation will improve the productivity of the species intended for culture above what would occur in natural conditions using approved methods. Approved methods would include predator exclusion, reduction of competing species, destiny manipulation, import of naturally-produced seed, import of hatchery produced seed, programming harvest to optimize growth and shellfish condition, and habitat improvements.

**Maintenance:** The operation and development plan for this project indicates that support facilities and culture gear and anchoring system will be installed with sufficient anchors and maintained.

**Rotation Schedule:** The projected rotation schedule is consistent with the life history of the species intended for culture.

#### **V. Species to be Cultured and Site Suitability**

Pacific geoducks (*Panopea generosa*) are reported to occur from Newport Bay California, north to Kodiak Island<sup>6</sup>, but other sources indicate the northern extreme of the range is Sitka, Alaska<sup>7</sup>. Known geoduck beds in Southeast Alaska are patchily distributed in central and southern Southeast Alaska in subtidal areas; primarily in protected waters near the outside coasts (ADF&G unpublished data).

The patchy distribution results from the habitat requirements of the geoduck, which ranges from the lower intertidal to subtidal areas, to depths of over 110 meters<sup>8</sup>. Geoducks occur in soft mud, sand, or pea gravel substrates, in which adult clams burrow to depths for 1 meter<sup>9,10</sup>. The applicant

<sup>3</sup> U.S. Fish and Wildlife Service, (current year). Beringian Seabird Colony Catalog -- computer database. U.S. Fish and Wildlife Service, Migratory Bird Management, Anchorage, Alaska 99503.

<sup>4</sup> U.S. Fish and Wildlife Service, Migratory Bird Management. Alaska Bald Eagle Nest Atlas-computer database. 2008.

<sup>5</sup> Analysis completed by NOAA Fisheries Service, Alaska Region, Protected Resources Division. Specifically, the data used to complete this analysis were provided by researchers from NOAA Fisheries Service, Alaska Fisheries Science Center, and National Marine Mammal Laboratory.

<sup>6</sup> O'Clair, R. M. and C.E. O'Clair. 1998. Southeast Alaska's Rocky Shores: Animals. Plant Press, Auke Bay, AK. 564 pp.

<sup>7</sup> Foster. 1991. Intertidal Bivalves. A Guide to Common Bivalves of Alaska. University of Alaska Press. 152 pp.

<sup>8</sup> Goodwin, C.L. and B. Pease. 1989. Species profiles: Life Histories and environmental requirements of coastal fishes and invertebrates ( Pacific Northwest) – Pacific geoduck clam. U.S. Fish and Wildlife Service Biol. Report 82(11.120). Us Army Corps of Engineers, TR EL-82-4. 14 pp.

<sup>9</sup> Goodwin, C.L. and B. Pease. 1989. Species profiles: Life Histories and environmental requirements of coastal fishes and invertebrates (Pacific Northwest) –

description for the proposed intertidal site, Parcel 2 indicated that the substrate is sandy and muddy. ShoreZone substrate data<sup>11</sup> noted that the beach near Parcel 2 consisted of gravel and sand.

Predation rates decrease with age for geoducks with the highest mortality occurring at the early life stages. As the clam digs deeper into the substrate the survival increases. Once established in the substrate, juvenile geoducks are subject to predation by epigenetic fish, Lewis moonsnail (*Euspira lewisii*), worms, sea stars, and crabs. Sea stars such as *Pisaster brevispinus* and *Pcycnopodia helianthoides* can prey on geoducks down to a depths of 24 inches (60 cm), but once adult clams reach normal depths, they are susceptible to only sea otters (*Enhydra lutris*) and humans. Siphon grazing by spiny dogfish (*Squalus acanthia*), cabezon (*Scorpaenichthys marmoratus*) and Halibut (*Hippoglossus stenolepis*) also has been documented (Goodwin and Pease, 1989). Predator netting is highly recommended for geoduck aquatic farm sites. The applicant plans to utilize predator exclusion devices for geoducks, but does not mention any netting for covering littleneck clam seeds. The applicant did not submit any information about the duration for leaving the tubes and netting at the beach site, Parcel 2.

Other species that occur in the substrate with geoducks include tube dwelling polychaete worms, whose tubes serve as attachment points for juvenile geoducks, and horse clam (*Tresus capax*), another clam typically burrows in the substrate to about 18 inches (45 cm).<sup>12,13</sup> Although they may occur in commercial quantities in some areas, horse clams are not generally harvested commercially.<sup>14</sup>, but they are generally harvested for sport.<sup>15</sup> Horse clams removed from the substrate as a result of geoduck harvesting or culture would die, because adult clans are unable to burrow back into the substrate.<sup>16,17</sup> Other taxa commonly observed on the substrate of geoduck beds include sea urchins (*Strongylocentrotus* spp.), sea cucumbers (*Parastichopus* spp.), and Dungeness crab (*Cancer magister*).

Based on this information in the application, the proposed site is capable of supporting the activities proposed. The proposed parcels in this aquatic farm operation project are located in an area that will have suitable biological and physical characteristics to culture geoduck and littleneck clams.

## **VI. Request for Additional Information**

The applicant needs to provide the following information:

- 1) plans to utilize predator exclusion devices ( i.e. netting) for littleneck clam on Parcel 2, and
- 2) information about the duration for leaving the tubes and netting at the beach site, Parcel 2.

Pacific geoduck clam. U.S. Fish and Wildlife Service Biol. Report 82(11.120). Us Army Corps of Engineers, TR EL-82-4. 14 pp.

<sup>10</sup> Gordon, D.G. 1996. Field Guide to the Geoduck. Sasquatch Books, Seattle. 48 pp.

<sup>11</sup> NOAA (National Oceanic and Atmospheric Administration), Fisheries, National Marine Fisheries Service. Alaska ShoreZone: Coastal Mapping and Imagery. <http://akr-mapping.fakr.noaa.gov/szflex/> (Accessed July 2011).

<sup>12</sup> Goodwin, C.L. and B. Pease. 1989. Species profiles: Life Histories and environmental requirements of coastal fishes and invertebrates ( Pacific Northwest) – Pacific geoduck clam. U.S. Fish and Wildlife Service Biol. Report 82(11.120). Us Army Corps of Engineers, TR EL-82-4. 14 pp.

<sup>13</sup> Gordon, D.G. 1996. Field Guide to the Geoduck. Sasquatch Books, Seattle. 48 pp.

<sup>14</sup> Quayle, D. B. and N. Bourne. 1972. The clam fisheries of British Columbia. Fisheries Research Board of Canada. Ottawa.

<sup>15</sup> Feder, H. M. and A. J. Paul. 1974. Alaska Clams: A Resource for the Future. Alaska Seas and Coasts, Vol. 2:1. February 15, 1974. Sea Grant/Marine Advisory Program. University of Alaska Fairbanks, Fairbanks, AK.

<sup>16</sup> Quayle, D. B. and N. Bourne. 1972. The clam fisheries of British Columbia. Fisheries Research Board of Canada. Ottawa.

<sup>17</sup> O'Clair, R. M. and C.E. O'Clair. 1998. Southeast Alaska's Rocky Shores: Animals. Plant Press, Auke Bay, AK. 564 pp.

- 3) updated operation and development plan that reflects the year that the three rafts and associated anchors will be installed. The plan now indicates that the applicant plans to add one (1) raft to three (3) rafts a year. The plan also needs to reflect the equipment and/or gear type and numbers used for the intertidal site and when the applicant is projected to install equipment and gear (predator netting, PVC tubes etc.)

**ENVIRONMENTAL RISK ASSESSMENT:** The applicant has submitted a signed environmental risk questionnaire. The questionnaire asks for information on potentially hazardous materials, such as plans for onsite storage of fuel or chemicals. The applicant has indicated that no on-site use, storage, transport, disposal, or otherwise, of any petroleum products will be used during the course of the proposed activities.

**BONDING AND INSURANCE:**

**BONDING:** Bonding, or another form of security, is required under AS 38.05.083 and 11 AAC 63.080. The bond must cover the costs of site cleanup and restoration, any associated cleanup costs after termination of the lease, including any unpaid rentals or other obligations accruing until site restoration is complete. The regulations require the minimum security amount of \$2,500 (or \$1,250 with an association bond) for an aquatic farm lease. Factors such as location and amount of improvements at the site are taken into consideration when the bond amount is determined. Please refer to the Recommendation section at the end of this decision for the bond amount that was determined appropriate for this proposal.

**INSURANCE:** At this time the DNR does not require this type of activity to have general liability insurance. General liability insurance may be required in the future depending on the aquatic farming operations and the procedures of the department at the time changes are made to the lease or a renewal lease is issued. The lessee is responsible for acquiring other types of insurance, such as Workman's Compensation Insurance that may be required under other local/state/federal laws.

**POTENTIAL CONFLICTS/PENDING INTERESTS:** There are no known pending interests at the location of the proposal.

**TRADITIONAL USE FINDING:** The proposed aquatic farm would not appear to cause disruption of traditional and/or existing uses of the area, such as commercial and sport fishing, subsistence activities, boat travel, and recreation. Through agency and public input, more traditional and existing use information may surface. If such information becomes available, any potential and/or existing conflicts will be addressed in the final best interest finding.

**Upland Owner/Management Intent:** The uplands adjacent to the aquatic farm proposal are native owned.

**CONSIDERATIONS:** The following criteria set out in 11 AAC 63.050(b), has been considered and represents what is known at this time:

**Land Management:** There are no known land management policies or designations, other than those in the Prince of Wales Island Area Plan Amendment that may impact this proposal. Measures taken to mitigate impacts on the resources identified in the above-mentioned plans are listed below.

**Pending/Existing Uses:**

1. There are no known pending use conflicts or potential impacts to nearby communities or residential land due to the placement of this farm at the proposed location.

2. Information available suggests the aquatic farm will not disrupt traditional and existing uses of the site for use as an anchorage, commercial and sport fishing, recreation, and tourism.
3. There are no historic and cultural resources known to exist in the area.
4. There are no commercial or industrial facilities known to exist in the area.

**Public Access:** Public access has been and will be protected in accordance with 11 AAC 63.050(b)(6) and 11 AAC 53 and will be addressed in any resultant lease agreement.

**Public Trust Doctrine:** Any resultant lease agreement is subject to the principles of the Public Trust Doctrine in order to protect the public's right to use navigable waters and the land beneath them for navigation, commerce, fishing, and other purposes.

**Mitigation Measures:** In addition to the mitigation measures identified above under Pending/Existing Uses, paragraph 2, any resultant lease renewal may include additional stipulations necessary to mitigate conflicts identified during the public/agency comment period

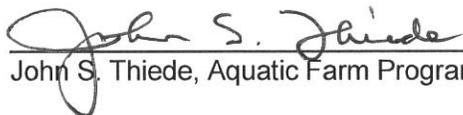
**Social, Economic, and Environmental Concerns:** There are no known significant social, economic, and environmental effects from the existing lease.

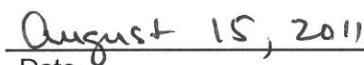
**Surface Area:** The proposal does not encumber more than a third of the surface area of a bay, bight, or cove in accordance with 11 AAC 63.050(c).

Aquatic farm sites have the opportunity to increase income and diversify the state's economy by utilizing state tide and submerged lands for this purpose. The advantage of issuing this lease on state owned tide and submerged lands is the continued employment opportunities as well as any secondary jobs created or increased from businesses involved in marketing, transport or sale of the farmed products.

After researching this proposal there seems to be no obvious disadvantages in issuing this activity on state owned tide and submerged lands. The public should be aware that access through the site, as well as access to any of the common property resources not being cultured at the site are public uses that remain intact. Therefore, and as mentioned above, any resultant lease would stipulate the requirement that signs be posted informing the public of their rights at the aquatic farm site.

**RECOMMENDATION:** Considering the information known at this time and described within this decision, it appears to be in the state's best interest to issue a 10-year aquatic farm lease for approximately 7.3 acres more or less to the applicant for oyster culture. Any resultant lease will include stipulations that may be identified as a result of public comments. Approval of the application is recommended with a security bond set at \$2,500 or \$1250 with an association bond.

  
\_\_\_\_\_  
John S. Thiede, Aquatic Farm Program Manager

  
\_\_\_\_\_  
Date

## Project description

### Doyle bay shellfish aquatic farm

The proposed aquatic farm site is located about 5.7 nautical miles S.E of Craig Alaska in Doyle bay. Doyle Bay is a small bay on Prince of Whales Island in southeastern Alaska. Access to the site is by skiff from Craig. Equipment and gear storage will be located in Craig.

The aquatic farm site will consist of 2 parcels. Parcel #1 will be located on state owned subtidal lands and parcel #2 will be located on intertidal land with a total of about 8.73 acres.

Parcel #1 will be 250ft by 250ft totaling 1.46 acres to be used for 1 work raft for holding clams until sale and holding seed till planted. Parcel #2 will be on bottom culture with sides measuring 310ft 675ft 491ft 780ft for a total acreage of 7.3. This parcel will be divided into 5 divisions each division will be split into 40 ft subdivisions. 1 division will be harvested and reseeded per year for a 5 year cycle of continuous and sustainable harvesting and planting. Clams will be harvested by hand with rakes and shovels and then reseeded for little neck clams. Geoducks will be planted on low side of beach in 4" pvc tubs sunk 12" into substrate 2" exposed 3 geoduck seed per tube.

Located in parcel#1 Work raft will be approximately 1150 ft away from parcel #2 and 100ft from shore. Bottom of gear will be 40 ft from bottom at mean low tide. Anchor system for rafts will consist of floating anchor lines attached to all four corners secured to 500 lbs concrete anchors. All components of raft and anchor lines will be within boundaries of parcel#1. Raft will be made from untreated local wood and floatation made of wrapped closed cell (extruded) expanded polystyrene.

### Record keeping

Each sub division will have a record of average size and type of species by date harvested weekly  
Value and weight of sellable product by size and species for each delivery, Date and name of buyer  
Amount of spat per subdivision date seeded #spat per sq ft. Time of harvesting planted subdivisions and  
average size and mortality rates  
Water temp will be taking on outgoing and incoming tides every time the beach is harvested minimum  
of 2 times weekly if no harvest is taking place during harvest season.  
Number and type of non targeted species and method of handling.  
Method of predator control and effectiveness

### Harvesting

Harvesting march through October

Parcel #2 shall be divided into 5 divisions each division will then be divided into 40ft subdivisions.  
1 division will be dug annually allowing continuous harvesting and planting on a 5 year cycle. Each  
subdivision will be dug with hand tools clams will be held in 5 gal buckets and marked with name of  
digger .after harvest each digger's clams will be sorted by size and species then weighed. Clams will then  
be put into purge cages until date of sale.

### Planting

All harvested areas will be planted at an average of 60 clams per ft. After planting subdivisions will be  
covered with predator netting for a minimum of 1 year

Geoducks will be planted in 4"pvc tubes sunk 12" into substrate 2" of tube exposed and covered with  
netting.3 geoduck seed per tube on low side of beach.

### Transporting

Once sold clams will be weighed put into net bagging or wet locks. Each container will be clearly labeled  
with date, species, weight, name and address of buyer. Once clams are ready for shipping they will be  
transported by truck to buyer or point of shipping.

Clam farm

### Maps

Aquaculture map for Doyle bay

Topographical map usgs

Nautical chart 17405

Make map with g.p.s locations for each parcel.

Make map with estimated clams per sq ft size and species and

Type of bottom material for each parcel

### Survey and marking

Corners of parcel #2 will be marked with 2 inch aluminum polls on each corner driven 3 ft into ground and 1 ft exposed. Each post is to be engraved with license# parcel# and gps ordinances.

Parcel#2 shall be divided into 5 divisions each division will be split into 40 ft subdivisions starting at boundary on high side of beach extending down to boundary line on low side.

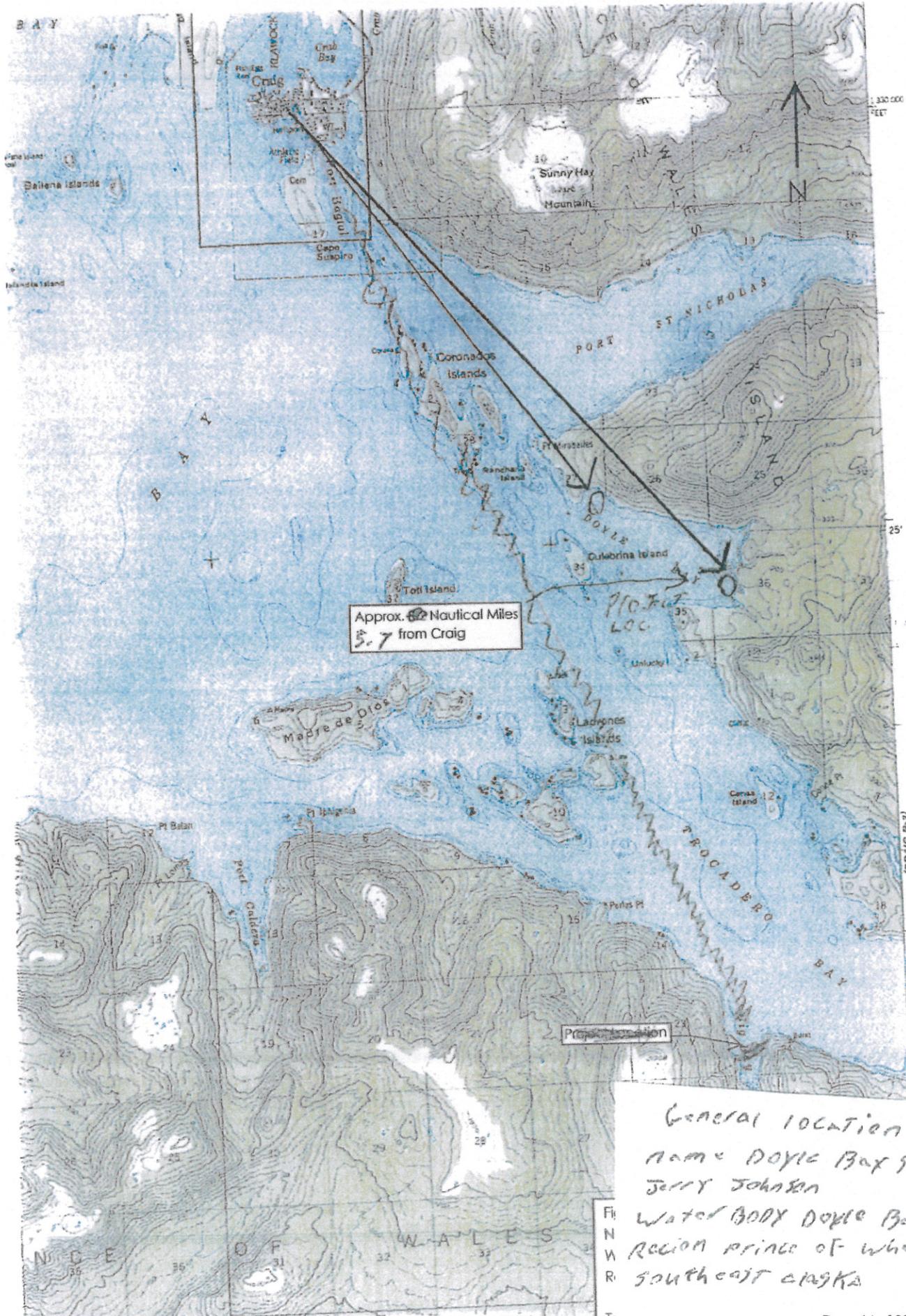
Subdivisions are to be marked with ¾ inch rebar driven 3ft into bottom 6 inches exposed. Tagged with sub# date harvested date replanted.

### Predator and none targeted species control

Predator netting shall be installed on subdivisions after reseeding predator netting shall be in place for minimum of 1 year.

Non targeted species control shall be handled in compliance with all state and federal laws

To ensure minimal damage or change to the environment and ecosystem surrounding farm site.



Attachment 1

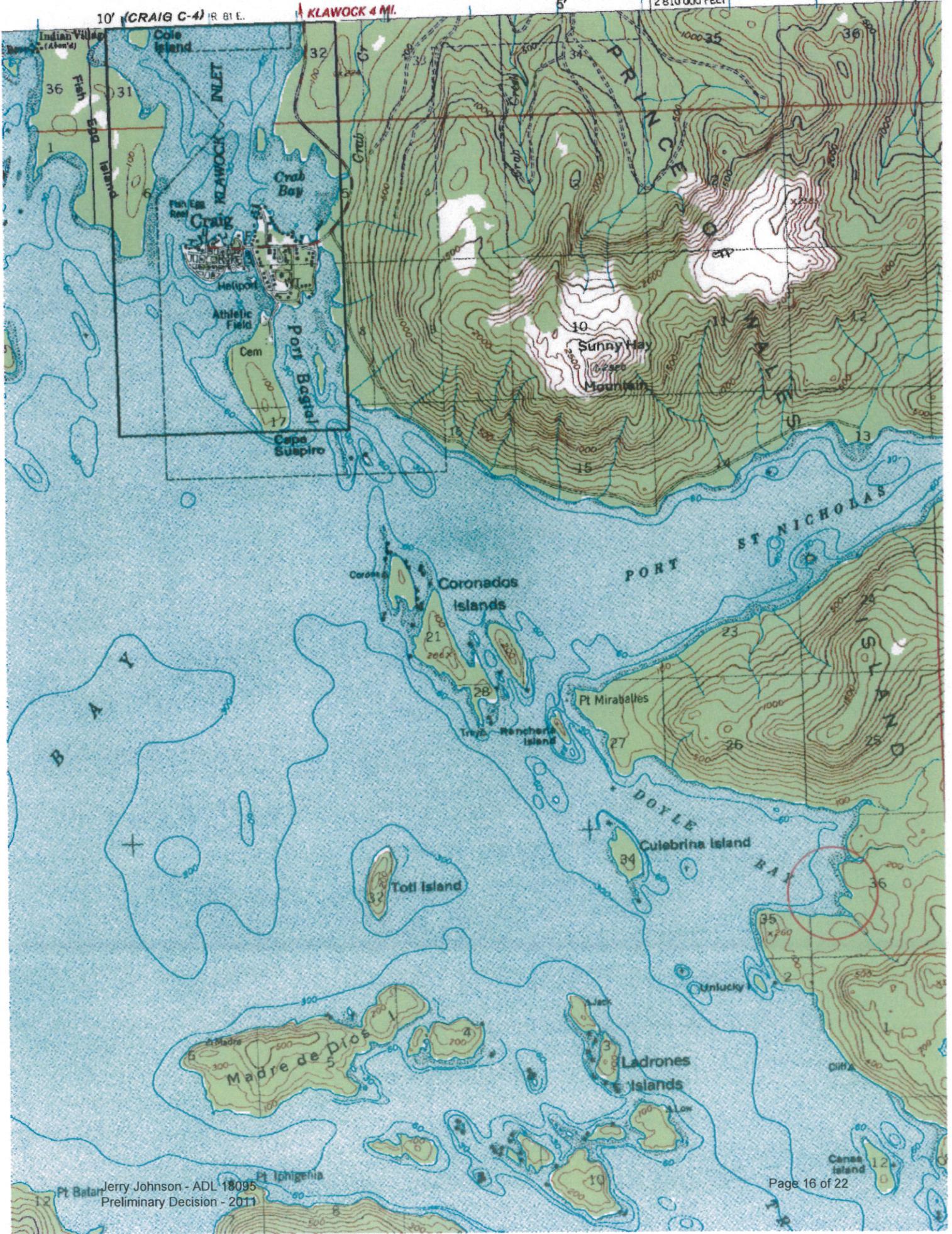
Approx. 5.7 Nautical Miles from Craig

Proposed location

General location map  
 name Doyle Bay Shellfish  
 Jerry Johnson  
 water body Doyle Bay  
 region Prince of Wales  
 southeast Alaska

4/27/11



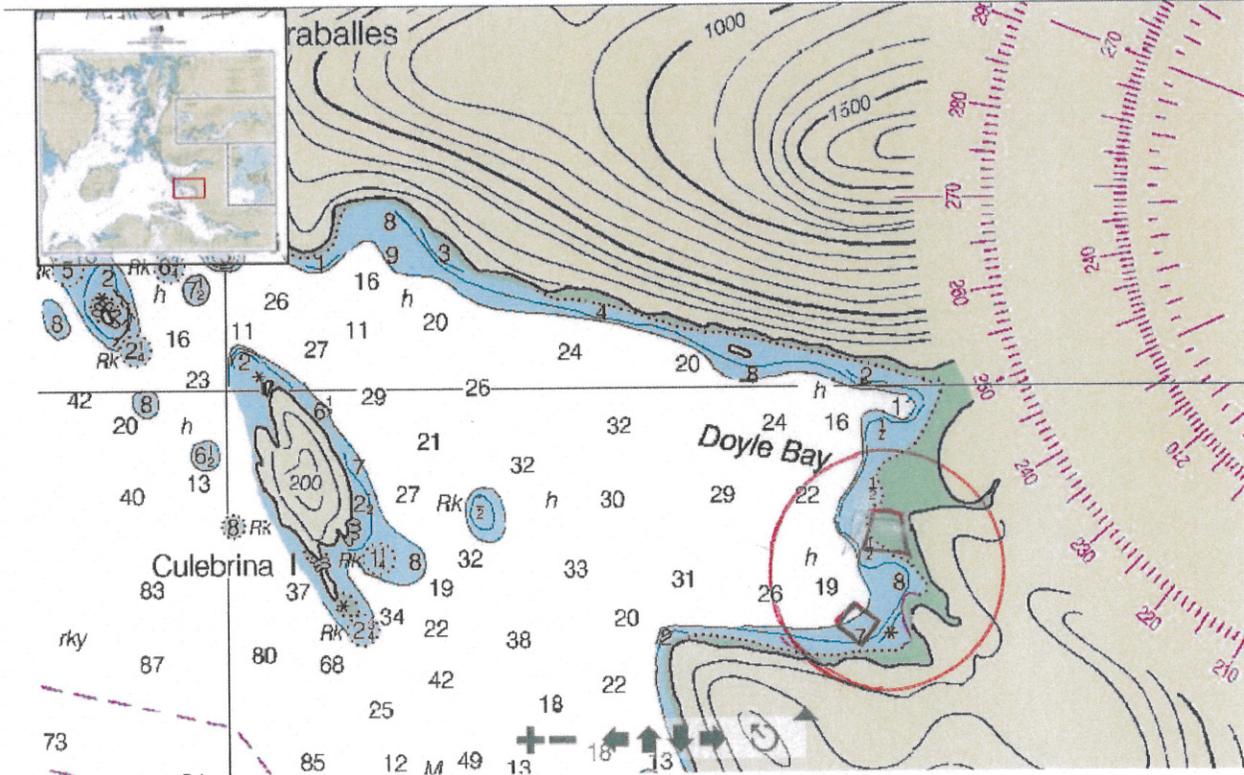


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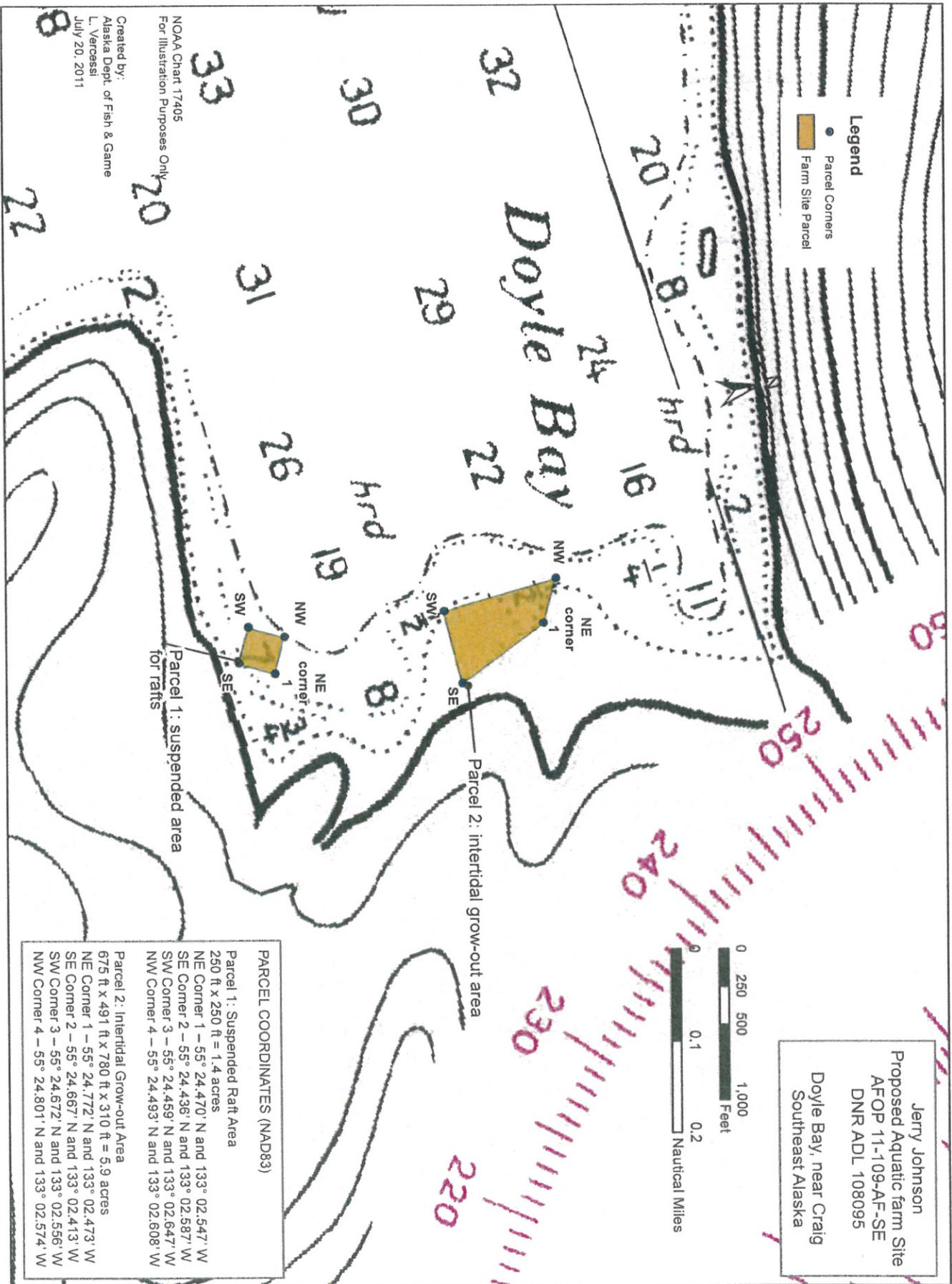
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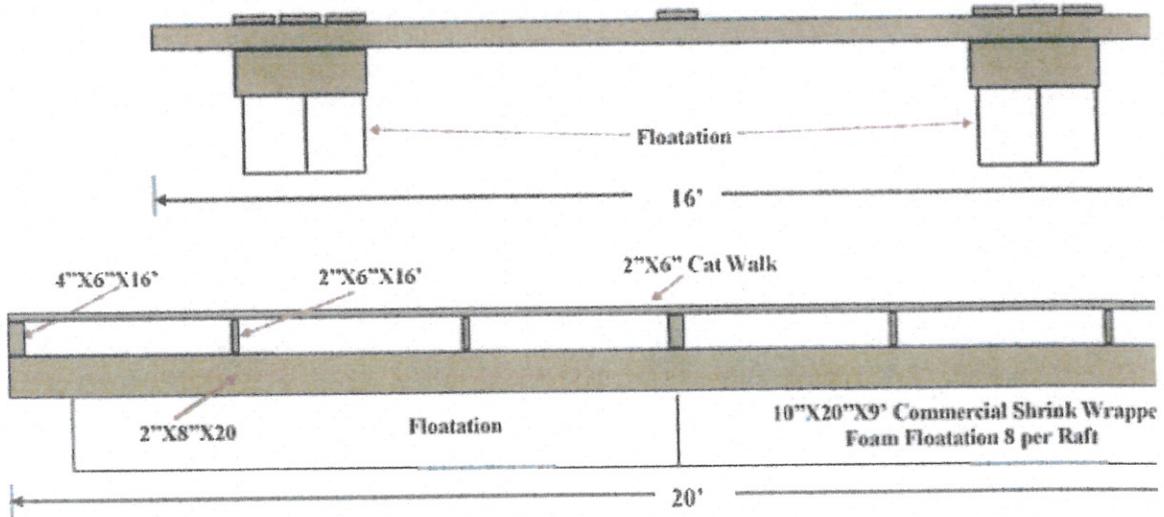


these rafts will be used for  
 holding trays of oysters and also will  
 need to be joined 2 rafts to be joined  
 together

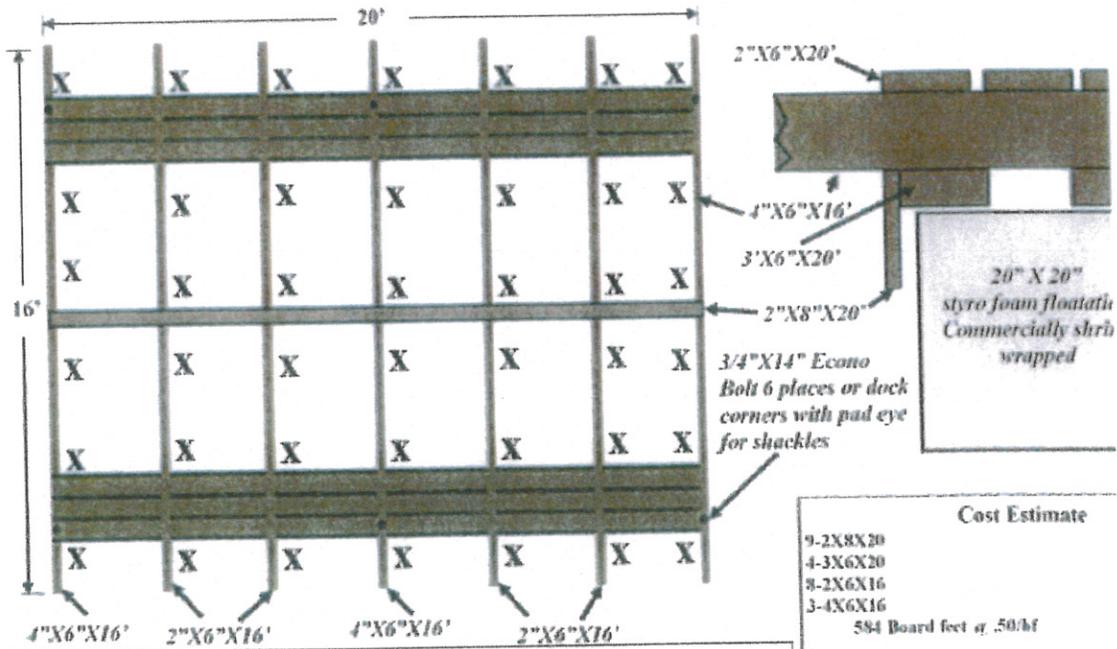
**Typical Oyster Grow Out Raft**

Grow out rafts are constructed of rough sawn lumber and foam flotation. Fasteners are stainless steel and marine grade. The foam flotation is commercially shrink wrapped. Each raft measures 16' X 20' and sits approximately 20" out of the water. Rafts are then moored to each other and anchored to the bottom.

Each raft can handle a minimum of 42 hanging stacks of 8 trays, each tray can hold 120 oysters at marketable size for a total of 40,320 oysters or 3,360 dozen per raft. Each raft could hold up to 336,000 25mm (1") spat when purchased from Naukati Bay Shellfish Nursery.



Attachment 5



**Typical Oyster Grow Out Raft**

Grow out rafts are constructed of rough sawn lumber and foam flotation. Fasteners are galvanized and marine grade. The foam flotation is commercially shrink wrapped. Each raft measures 16' X 20' and sits approximately 20" out of the water. Rafts are then moored to each other and anchored to the bottom. Many variations are possible, however, spacing of the cross members to 36" makes it very easy to get the tray stacks in and out of the water and allows more flow around the tray stacks

Each raft can handle a minimum of 42 hanging stacks of 8 trays, each tray can hold 120 oysters at marketable size for a total of 40,320 oysters or 3,360 dozen per raft. Each raft could hold up to 336,000 25mm (1") spat when purchased from Nankati Bay Shellfish Nursery.

Cost Estimate	
9-2X8X20	
4-3X6X20	
8-2X6X16	
3-4X6X16	
584 Board feet @ .50/ft	
4- 20"X20"X108" foam @ \$54 each	
6- 3/4"X14" Econo bolts with nuts and washers \$9.50 each	
Nails and screws	approximately
Poly rope to attach floatation	
<b>Total</b>	
* Does not include shipping. Cost to ship depending on the quantity shipped.	

# AND SIZE OF RACKS WILL BE SUBMITTED AT LATER DATE UPON BUILDING  
 I WILL USE ALL MATERIALS THAT MEET STANDARDS  
 TO OYSTER GROW OUT RACKS  
 Attachment 6

Figure 5. Aquatic Farm Cross-Sectional Diagrams and Drawings Examples

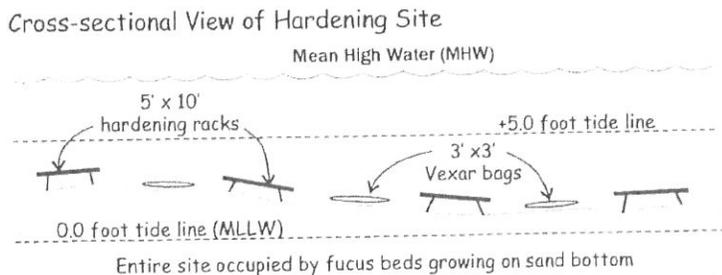
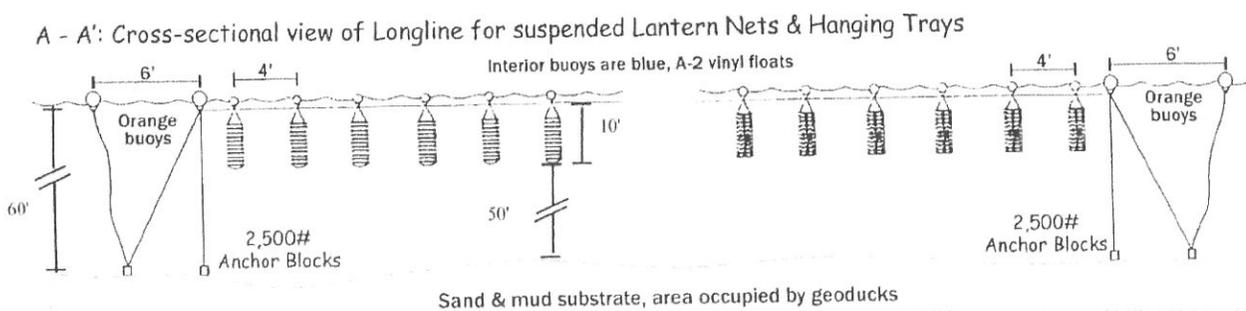
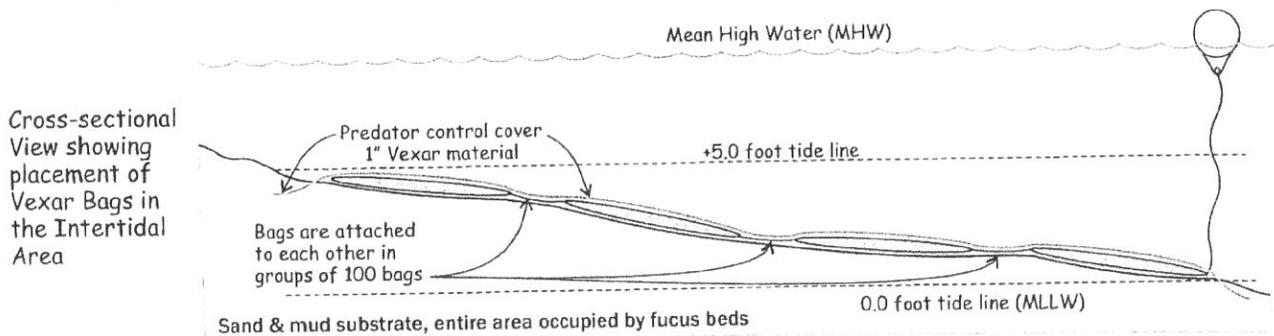
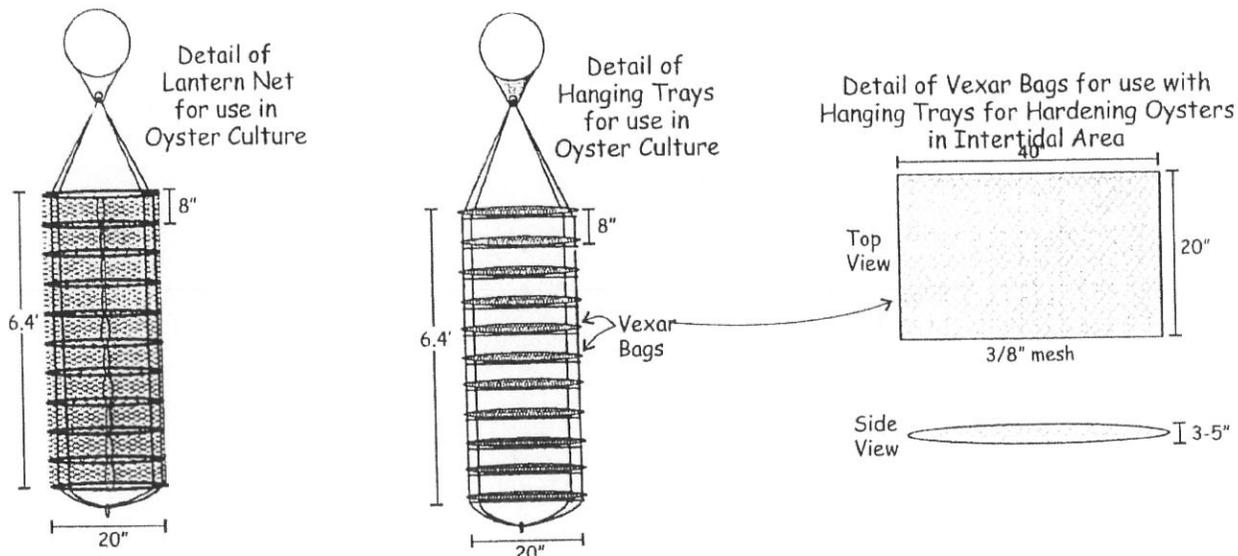
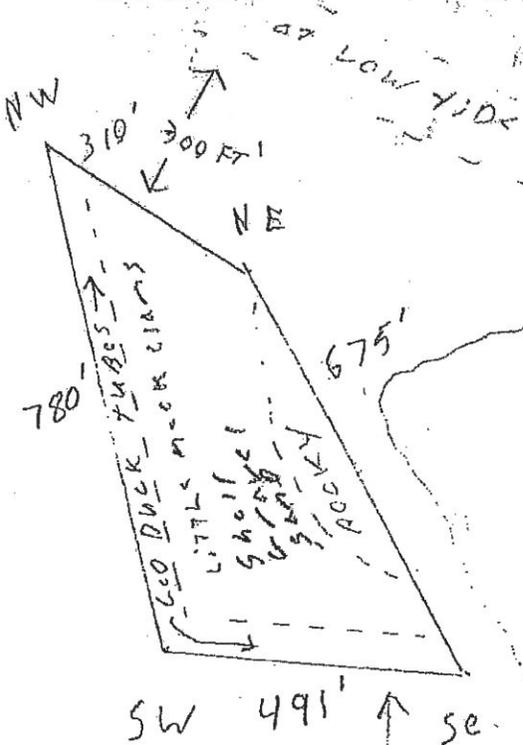


Figure 5 - Detailed Cross-sectional Diagrams and Drawings

Name: Big Bay Aquatic Farm (Jane Doe)  
 Waterbody: Big Bay  
 Region: Prince of Wales Island, SE Alaska  
 Today's date: September 19, 2010

Region Prince of Wales

Parcel #2  
7.3 AC  
5.9 acres



Parcel #1			
NE	55° 24.495' N	133° 21.595' W	
SE	55° 24.495' N	133° 2.579' W	
SW	55° 24.436' N	133° 2.587' W	
NW	55° 24.462' N	133° 2.649' W	
Parcel #2			
NE	55° 24.576' N	133° 2.473' W	
SE	55° 24.647' N	133° 2.416' W	
SW	55° 24.559' N	133° 2.531' W	
NW	55° 24.801' N	133° 2.547' W	

Scale 2"  $\frac{5}{16}$  = 600'  
 $\frac{9}{16}$  = 150'  
 150 | 300 | 450 | 600

