2/11/08 discussion draft

Task 3: Geoduck Aquaculture Siting and Operations Discussion Outline

Shellfish Aquaculture Regulatory Committee

February 2008 Meeting

To provide a framework and facilitate discussion of geoduck aquaculture siting and operations related to Task 3, Ecology staff is providing this outline. As with the outline used at the January meeting, this handout lists specific topics and potential guidelines compiled from available sources and from Committee discussions. This is not an exhaustive list; Ecology staff invites additional appropriate topics.

Please review this handout in advance of the meeting, and come prepared to discuss the February topics. If you have questions or suggestions prior to the meeting, please send them to Candice Holcombe at chol461@ecy.wa.gov.

January Topics

- View/aesthetics
- Noise
- Light
- Hours of operation
- Litter: Methods for quantifying and reducing marine litter*
- Access and navigation

February Proposed Topics

- Landowner notification*
- Site identification
- Maintenance requirements
- Bonding
- Recordkeeping
- Adaptive management: Monitoring and Periodic review of BMPs

March–April Proposed Topics

- Forage fish
- Eel grass and other macro algae
- Predator exclusion and control
- Site preparation related to rock removal
- Genetics and disease issues
- Water Quality
- Site survey and research access

*Specifically identified in HB2220

February Detailed Discussion Outline
BMPs, Continued

Please review the following topics. Jot down how you define the "problem statement" for each of the following topics, as well as other possible control or management ideas. Committee members will be asked to share their ideas at the meeting.

Landowner Notification

Problem Statement:

Ideas for Possible Management and Control Recommendations

1. Inform adjoining neighbors of upcoming harvest activities, at least five days in advance if possible. [2]
2. Neighbors within 300 feet of the proposed site must be informed of upcoming harvest activities at least five days in advance. [4]
3. The adjoining neighbors should be informed of upcoming harvest activities, at least five days in advance.[3]

Site Identification

Problem Statement:

Ideas for Possible Management and Control Guidelines

Boundary Markers

1. Areas opened for harvesting are set apart and marked with easily identifiable stakes and/or buoys. [1]
2. Mark the perimeter of each farm with buoys. [4]
3. Latitude and longitude positions are recorded for all markers. [1]
4. Boundary Markers. Leasehold boundary corners will be assigned GPS coordinates during the land survey. Corner markers should be in place during site preparation and planting, and during the period when predator exclusion devices are in place. They may be removed during the grow out period, but the corner marker positions must be replaced at the GPS coordinates recorded by the land survey prior to any harvest activities. They must remain in place during harvest activities. Helically anchored mooring buoys will be used for the deep water corner markers. Shallow water corners can consist of untreated piling monuments, helically anchored buoys, or other markers of a semi permanent type, but they must be visible above the water at high tide. Rebar will not be used for markers. [2]
5. The boundaries of the harvest area shall be marked at all corners with marker buoys for the duration of the operation in order to identify the operation boundaries to the public.[3]
6. The applicant shall submit a survey of the leased intertidal area identifying the corners, and permanent markers shall be placed at said location in order to eliminate possible injury to the public. Buoys shall mark the boundaries as long as tubes and nets are in the area. This provision is designed to give notice to recreational users of the surface of the water of the existence of the tubes and nets. [4]
7. Tideland boundaries shall be clearly marked with buoys or other appropriate means so as to ensure the safety of recreational boaters, anglers and other water users. [5]

8. Remove marker stakes and buoys when they are no longer necessary. [2]
9. Corner markers shall be in place during site prep, planting, and harvesting.
10. Corner markers in place during all stages, including grow-out.

Ownership and Setbacks

11. Documentation of ownership or present right of possession of land and tidelands proposed to be utilized for the operation shall be submitted at the time of application. The documentation shall demonstrate the right to plant and harvest geoducks and shall include a survey of the area to be utilized for the operation.[3]
12. A 10 foot setback shall be maintained between adjoining properties and aquaculture operations.[3]

Maintenance Requirements

Problem Statement:

Ideas for Possible Management and Control Guidelines

Nets, Tubes, and Other Materials

1. The process of tube and net removal is a labor intensive activity and will be subject to the same BMP's as initial tube installation. No materials should escape from the farm. Every effort must be made that tubes, nets, and fasteners should not wash off the farm area. [2]
2. Maintain farm in an orderly fashion. Remove unnatural materials (pipe, nets) as soon as practical when young geoducks are no longer vulnerable to predators. [2]
3. When tubes and netting are removed, secure this material and remove it from the beach prior to the next incoming tide. [2]
4. Remove all tools and products of harvest activities from the site when each day's harvest is completed. [2]

Vehicles and Equipment

5. Ensure that pumps, boat motors, and harvesting equipment are routinely serviced in order to avoid/minimize the loss of fluids. [2]
6. Where petroleum products are used, participating growers will have in their possession, at harvesting sites, equipment necessary to address spills of hydraulic fluids and fuels including absorbent materials. [2]
7. Prepare a contingency plan for addressing vehicle breakdowns in the intertidal area.

Limit Impact to Aquatic System

8. Set up maintenance operations (foot traffic, equipment, vehicles, vessels) so that they prevent impacts to eelgrass. Avoid impacts to other submerged aquatic vegetation. [2]

Worker Training and Sanitation

9. Companies participating in farming on leased beaches shall train employees in meeting environmental objectives through a standardized training program. These companies shall be responsible for the employees' environmental performance. [2]
10. If the applicant will be farming on leased beaches, they must train employees in meeting the environmental objectives through a standardized training program. These companies shall be responsible for their employees' environmental performance and noise production.[4]

11. Adequate sanitation (toilet and washing) facilities will be available at all times for employees working on the beach. Employees will not use the beach, adjacent uplands or waters for personal sanitation. [2]
12. At least one sani-can shall be kept on-site for employees. Sani-cans shall be maintained on a regular basis being every two weeks during winter months and every week during warmer months. Sanitary waste disposal shall comply with local Health Department regulations. Sani-cans shall be placed out of views of neighboring property owners. [5]

Bonding

Problem Statement:

Ideas for Possible Management and Control Guidelines

1. The applicant/property owner must obtain a bond or financial guarantee in the amount of $1.00 per tube placed. This is to ensure that all aquaculture equipment, specifically the tubes, netting and net securing devices will be completely removed from the site, at a length of time not to exceed 2 years plus 6 months, of placement. All approvals granted to harvest the geoduck will become null and void if the applicant fails to remove all of the tubes, netting and netting securing devices.[4]

Recordkeeping

Problem Statement:

Ideas for Possible Management and Control Guidelines

An accurate accounting of farm operations is vital and this process must be transparent to all parties. Note that certain elements may also be open to public disclosure. [2]

Maps, Licenses, and Documents

1. Vessel operators are required to have DNR tract maps, sight-line photographs and copies of harvest agreements on board the harvest vessel when harvesting. [1]
2. All geoduck harvest vessels must clearly display their assigned WDFW identification numbers.[1]
3. Changes to approved Harvest Plan
4. Records on routine operations during the life of the farm. This will include at a minimum: [2]
   a. the mapped location(s) and aerial extent(s) of farm site(s);
   b. harvest records (weight and species) of any non-farmed valuable product, if that amount is greater than a recreational harvest limit;
   c. the timing, location, number, type, and description of predator protection installations;
   d. geoduck seed planting numbers, locations, dates, and sizes; 7.2.5 survivorship and growth data by location and year-class from farm inspections during grow out;
   e. harvest numbers, total, and average weights, dollar value, date, year-class, and location of harvest tract;
   f. other data determined during the initial lease negotiations to be of mutual benefit to DNR and the lessee. The format and schedule for providing this information to DNR will be set out in the lease agreement.

g. to determine source of potential impacts, keep records of all activities on the leasehold, such as time of activity, numbers of people, anchoring locations of vessels, trucks on the beach, etc
h. If driving on the beach is necessary, a map defining best route to avoid impact

Records and Logs

5. Maintain a log of all debris removed from offsite areas.
6. Record the number of tubes installed on each farm and the number of tubes removed from the respective farms. Develop a computer program that will alert geoduck managers of any discrepancy between the number of tubes installed in the farm and the number of tubes removed from the farm. [4]
7. Maintain a log of the exact number and type of all equipment being used and left onsite or removed from the site. [4]
8. The following information will be provided to **** staff as the events or issues occur:
   a. correspondence between the lessee and other government or tribal entities;
   b. complaints and resolution of those complaints;
   c. Record of correspondence from adjacent property owners and recreational users;
   d. Measures taken as a result of complaints from adjacent property owners or recreational users;
   e. Spills or cleanups conducted on the beach. [2]

Complaints

9. Maintain a website with a permit link which would have a record of complaints, including date and time and response. The name of the complainant would not be on the website for privacy purposes. [4]

Adaptive Management: Monitoring and Periodic Review

Problem Statement:

Ideas for Possible Management and Control Guidelines

Adaptive Management—An action-oriented approach to resource management that brings science and management together and allows managers to move forward in the face of uncertainty when dealing with complex ecological problems. Adaptive management tackles uncertainty about the system head-on by identifying clear objectives, developing conceptual models of the system, identifying areas of uncertainty and alternative hypotheses, learning from the system as actions are taken to manage it, updating the conceptual models, and incorporating what is learned into future actions. *(California Dept. of Water Resources, Interagency Ecological Program)*

Review and Modify Operations in Response to Changing Conditions and Knowledge

1. The project shall be reviewed in five years from the effective date of approval to examine the impacts of operations and each of these conditions.[4]
2. These BMPs are related to farm and crop management, and harvest. They are based on the present understanding of existing geoduck aquaculture operations. These BMPs will be adaptively managed, based on best available science and they will be modified over time as new scientific data pertaining to management practices become available.[2]

Data Collection and Monitoring

3. Environmental monitoring data, if applicable, shall be collected as per DNR protocols in the lease. [2]
4. Determination of naturally occurring geoduck may use an alternate method if agreed upon by all parties.[2]
5. The results of all surveys conducted, as part of the lease, must be provided to **** within ten business days of receipt of results. [2]

Surveys

6. Baseline Survey – The baseline survey will accomplish two things: a biological determination of shellfish species and their densities, and a baseline evaluation of the site with regard to aquatic vegetation, sediment characteristics, and water quality parameters. [2]
7. Conduct a survey of the leasehold for all attached or rooted aquatic vegetation. [2]
8. Surveys must be conducted according to current Washington State Department of Fish and Wildlife (WDFW) protocols. [2]
9. The biological baseline survey will reference GPS leasehold corner points, as defined in the land survey. [2]
10. Eelgrass survey within 200' of proposed beds
11. Document the abundance and distribution of existing naturally recruited shellfish stocks on the lease area. [2]
12. Other critical fish and wildlife habitat within 200' of proposed beds.
13. Copy of authorizing lease.

Performance Measures

1. Equipment Maintenance records;
2. Record of employee training records for meeting environmental objectives;
3. Review of petroleum product spill contingency plans and vehicle breakdown plans;
4. Review of measures taken to reduce turbidity of adjacent waters;
5. Review of farming methods and discussion with farm manager of any possible related impacts;
6. Review of nighttime lighting operations and measures to reduce impact to nearby upland residences;
7. Record of beach cleanup activities;
8. Record of salmon returns in applicable farm areas;
9. Record of water quality participation efforts;
10. Record of scientific studies supported by geoduck companies that address salmon issues;
11. Record of eelgrass beds in farm areas;
12. Record and results of outreach activities done by lessee to local residents;
13. Records of upland owner notification of harvest;
14. Harvest operation downwind noise readings at 200 yards, once per configuration if possible;
15. Other short-term events (PSP and other water related quality closures, unusual predation, poaching, or other bed disturbances, etc.). [2]

**Sources of BMPs:

[1] The State of Washington Commercial Geoduck Fishery Management Plan, WDNR, Aquatic Resources Division, May 23, 2001.
[2] 2007 Best Management Practices (BMPs) for Geoduck Aquaculture on State Owned Aquatic Lands in Washington State, WDNR, October 15th 2007
[3] Proposed Pierce County Ordinance No. 2007-34s2, Chapter 20.24, Aquacultural Practices, September, 2007
[4] Pierce County Permit
[5] Mason County Permit