

Guidelines for Intertidal and Subtidal Geoduck Aquaculture

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Existing Guideline Language

Aquaculture

- Aquaculture is the culture or farming of food fish, shellfish, or other aquatic plants and animals. This activity is of statewide interest. Properly managed, it can result in long-term over short-term benefit and can protect the resources and ecology of the shoreline. Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area. Local government should consider local ecological conditions and provide limits and conditions to assure appropriate compatible types of aquaculture for the local conditions as necessary to assure no net loss of ecological functions. (WAC 173-26-241(3)(b))

Three Major Sections

- SMP “Zoning” (Dividing the shoreline into shoreline environments and designating critical areas) and identification of the zones where Geoduck Aquaculture may be allowed
- Requirements for the siting and operation of Geoduck Aquaculture projects
- Required approvals and application process

“Zoning” for Geoduck Aquaculture

- In which shoreline environments/critical areas should geoduck aquaculture be allowed, subject to site-specific approvals?
 - The current system doesn't give a simple answer.
 1. *Note that SARC discussed separating large and small operations. Non-commercial operations may also need to be considered.*

Current Zoning Guidance

- Five environments for upland areas¹ (above high water mark):
 - Natural
 - Rural conservancy
 - High-intensity
 - Urban conservancy
 - Shoreline Residential
- One environment below the high water mark:
 - Aquatic

¹ Jurisdictions can extend “Upland” designations below the high water line and can create additional environmental designations.

Result

Upland	Intertidal/Subtidal
Natural	Aquatic
Rural conservancy	
Shoreline residential	
Urban conservancy	
High-intensity (city center)	
Urban conservancy	
Shoreline residential	
Rural conservancy	
Natural	

Critical Area Designations

- Growth Management Act defines “Fish and wildlife habitat conservation areas”
- Shoreline Management Act guidance calls for designation of “Critical saltwater habitats.”
 - Provides protection for kelp, eelgrass, forage fish and threatened species habitat
 - “All public and private tidelands or bedlands suitable for shellfish harvest ***shall be classified as critical areas***. Local governments should consider both commercial and recreational shellfish areas.”

Current Zoning Doesn't Address Geoduck Aquaculture Well

Upland	Inter/Subtidal	Shorelines of Statewide Sign?	Critical Area ?
Natural	Aquatic	Yes / No	Yes / No
Rural conservancy	Aquatic	Yes / No	Yes / No
Shoreline residential	Aquatic	Yes / No	Yes / No
Urban conservancy	Aquatic	Yes / No	Yes / No
High-intensity (city center)	Aquatic	Yes / No	Yes / No

New Zoning Guideline Options

1. No change.
2. Subdivide Aquatic designation to identify areas where geoduck aquaculture may be allowed
3. Subdivide Critical Area designations to better identify areas where geoduck aquaculture may be allowed.
4. Create special overlay (special area planning) to identify those areas where geoduck aquaculture may be allowed.

Shoreline Inventory and Evaluation

In revising SMPs, local jurisdictions will be evaluating current data and trends regarding:

- Physical characteristics of the habitat;
- Terrestrial and aquatic vegetation;
- The level of human activity;
- Restoration potential;
- Tributaries and small streams flowing into marine waters;
- Dock and bulkhead construction, including an inventory of bulkheads serving no protective purpose;
- Conditions and ecological functions in the near-shore area;
- Uses that may negatively impact saltwater habitats, including permanent or occasional upland, beach, or over-water uses; and
- An analysis of data gaps

Geoduck Aquaculture “Zoning” Criteria

- Criteria for the designation of areas where geoduck aquaculture may be allowed include:
 - Slope and sediment requirements
 - Habitats to be avoided/protected
 1. *Eelgrass, kelp, forage fish, salmon, etc.*
 - Possible conflicts with surrounding uses
 - Public Access and the needs of navigation
 - Consideration of ownership patterns

Section Two -- Requirements for Geoduck Aquaculture

- Siting
- Design and
Operation

Recurring Alternatives

- Many possible requirements have been suggested for geoduck aquaculture guidelines. For each of these, Ecology (SARC) has three options:
 1. *Leave it out*
 2. *Direct local jurisdictions to address it but provide no specifics (general statement)*
 3. *Provide specific requirements (can also be a range or can be a performance measure)*

Siting requirements

- Not allowed in identified pocket estuaries and other key salmon habitat sites
 - Guideline options
 1. *General statement*
 2. *Specific standards on distance from spawning streams*
 3. *Specific references for pocket estuaries where not allowed.*
- Not allowed where operation would damage eelgrass or kelp beds
 - Guideline options
 1. *General statement*
 2. *Specific distances (DNR 10 feet)*
 3. *Specific sources of information on locations of beds*

Siting Requirements

- Not allowed at sites without reasonable land or water access
 - Guidelines options
 1. *General statement*
 2. *Specific language about requirements for using land access*
- Not allowed where interference with navigation is unacceptable
 - Guideline options
 1. *General statement*
 2. *Criteria for when interference would likely occur*

Siting Requirements

- Restrictions based on proximity to sensitive upland uses, public beaches, boat launches, or other aquaculture sites
 - Guideline options
 1. *General Statement*
 2. *Criteria*
 3. *Specific distances*
- Not allowed if site needs major physical alterations to substrate or slope
 - Guideline options
 1. *General Statement*
 2. *Criteria*
 3. *Specific prohibitions*

Siting Requirements

- Not allowed on sites with a high likelihood of erosion or accretion along adjacent shorelands
 - Guidelines options
 1. *General statement*
 2. *Specific criteria*
- Other siting issues
 - Property ownership
 - ??
 - ??

Design and Operation

- Requirements for geoduck stock selection for planting—relationship to local populations
 - Guideline options
 1. *Defer to WDFW*
 2. *General statement*
 3. *Criteria*
- Requirements for WDFW certification of Seed
 - Guideline options
 1. *Defer to WDFW*
 2. *General statement*
 3. *Criteria*

Design and Operation

- Require Dept. of Health shellfish certification
 - Guideline options
 1. *Defer to Health*
 2. *General statement*
 3. *Requirement to document and maintain certification*
- Require other permits – Corps of Engineers, Clean Water Act
 - Guideline options
 1. *General statement*
 2. *Specific requirements*

Design and Operation

- Site boundary marking or identification
 - Guidelines options
 1. *Use casinite markers*
 2. *Flexibility when property owners(?) and grower agree*
 3. *Identify hazard area for boaters*
 4. *Decide if markers are for life of project or not*
 5. *Use durable materials, avoid rebar*
 6. *Consider aesthetic issues and wildlife safety*
- Requirements for allowing continuing public use/access
- Guidelines options
 1. *Growers should be encouraged to allow public access to private tidelands.*
 2. *Growers leasing state aquatic tidelands should allow public access.*

Design and Operation

- Setbacks, location on property/site
 - Guideline options
 1. *General setbacks*
 2. *Setbacks based on adjacent use*
- Requirement for pre-planting harvest (Must consider Tribal shellfish rights)
 - Guideline options

Design and Operation

- Limitations on pre-planting alterations to the site, rock clearing, grading, etc.
 - Guidelines options
 1. *General statement*
 2. *Specific limits on depth of excavation or types of equipment.*
- Visual aesthetics of materials used on site
 - Guidelines options
 1. *Because planting tubes are least visible if they are not white, require tubes to be a muted color (not white).*
 2. *Require growers to use the best available tubes and nets that minimize visual impacts. Require a permit condition that specifies how growers will demonstrate this.*

Design and Operation

- Restrictions on planting density/tube density, planting methods
 - Guidelines options
 1. *Could have limit on geoduck density separate from limits on coverage by predator exclusion devices.*
- Restrictions on predator exclusion devices coverage and duration
 - Guidelines options
 1. *Growers should remove tubes and nets as soon as they are no longer needed for predator exclusion. Specify how long tubes can be in the ground.*
 2. *Standards should be established for net sizes. Possible recommendation: Require permit conditions related to net sizes. (note bird interactions)*

Design and Operation

- Limits on landside parking and on-shore staging areas, require that they be above OHW
 - Guidelines Options
 1. *Growers should have to use designated staging and parking areas to minimize the footprint of impact.*
 2. *Staging and Parking should be located above OHW.*
- Requirements for worker and equipment access to work on site
- Guidelines Options
 1. *Paths to geoduck growing tracts that cross private land need specific standards to avoid trespass, added noise and litter, or damage to property.*
 2. *Growers who abuse or damage private roads should be responsible for repairs and the road owners should feel free to deny future use of their road.*

Design and Operation

- Limits on barge and vessel mooring—
number, location,
duration.
 - Guidelines options
 1. *Geoduck vessels should have defined limits for how long they can be moored at a site.*
- Other requirements to limit navigation interference
 - ??

Design and Operation

- Limits on holding pools and other devices or equipment placed on the substrate
 - Guidelines options
 1. *Duration limits*
 2. *Limits on area covered*
 3. *Aesthetic requirements*
- Limits for on-site work, (time of day, frequency, weekends)
- Guidelines Options
 1. *Growers should sit down with adjacent shoreline property owners and seek solutions that meet the growers' desire to harvest at certain times and the shoreline homeowners' desire to limit disruptive aquaculture operations.*
 2. *On a case-by-case basis, permits could limit hours of operation.*
 3. *Criteria should be identified that would trigger a limit operational hours. Evaluation criteria might link to noise levels, light levels, debris volumes, distance from residences, and public access.*

Design and Operation

- Notification of Shoreline Owners
- Guidelines Options
 1. *Growers should provide advance notification to adjacent shoreline owners within a defined radius to explain when operations are going to occur and what noise can be expected. Explain duration of the work, and where to call with complaints.*
- Notification of Tribes
 - Guidelines Options
 1. *Growers should provide notice to appropriate tribal governments before taking actions of interest to the tribes.*
 2. *Specific list of actions deserving notification*

Design and Operation

- Requirements for site maintenance
 - Guidelines Options
 1. *Bundle materials for later pick-up and to prevent small items from leaving site.*
 2. *Have a sanitation BMP appropriate to the scale of the operation.*
 3. *Remove unneeded materials from the beach as soon as possible.*
 4. *Train workers about importance of taking care of the nearshore environment while working.*
- Restrictions on harvest methods
 - Guidelines Options
 1. *Harvest water pump design, operation, intakes, pressure*
 2. *Turbidity management during harvest*

Design and Operation

- Restrictions on noise
 - Guidelines Options
 1. *Noise standards should be established for geoduck operations, with emphasis on equipment and workers. Standards might include locational standards.*
 2. *Committee should look at noise situations that are comparable, and see what we can learn from those situations.*
 3. *State noise standards offer a starting point for discussing noise standards for geoduck operations. Standards may vary depending on whether the area is residential, commercial, or another zone. The current residential noise standard is 55dba at 200 yards.*
 4. *Growers should monitor their noise levels and report noise levels.*

Design and Operation

- Restrictions on lights
 - Guidelines Options
 1. *Standards should be established for flood lights, head lamps, and other lighting used for geoduck operations.*
 2. *Growers should use light shields, head lamps, and lighting devices that can be directed downward to minimize impacts.*

Design and Operation

- Requirements for debris management, including patrolling adjacent shorelines.
 - Guidelines Options
 1. *Growers should be required to use and maintain equipment and devices so that they do not break free and drift or move away from the site to become litter.*
 2. *Growers should label, brand, or mark their tubes and nets so debris problems can be solved at the source.*
 3. *Establish a standard for reducing, managing, and penalizing net, tube, and fastener litter and debris.*
 4. *Because rubber bands in the environment are a concern, require alternatives to rubber bands or require growers to use attachments that do not easily break and become litter.*
 5. *Growers should recover all litter or debris.*
 6. *Standards should not prevent innovation and better ways to eliminate and reduce litter or debris. Standards should describe the required “performance” or outcome (some call this a “performance standard”).*
 7. *Local governments should be a “clearinghouse” for litter reporting that includes alerts to growers of the specific location of litter that has been seen.*

Design and Operation

- Spill prevention and response requirements
 - Guidelines options
 1. *General statement*
 2. *Require spill prevention and response plan*
- Air, water and sediment pollution
 - Guidelines options
 1. *General language*
 2. *Specific requirements*

Design and Operation

- Equipment maintenance
 - Guidelines options
 1. *General requirement to maintain equipment to prevent air or water pollution or excessive noise.*
- Other operational practices
 1. *worker sanitation*
 2. *??*

Design and Operation

- Required recordkeeping and reporting
 - Guidelines Options
 1. *General Statement*
 2. *Specific requirements*
- Required Employee training
 - Guidelines Options
 1. *General Statement*
 2. *Specific requirements*

Design and Operation

- Monitoring, Performance Measures, Adaptive Management
 - Guidelines Options
 1. *General Statement*
 2. *Specific performance measure, monitoring and process for taking corrective actions.*

Section 3--Required approvals and application process

- Need a site-specific approval process that will:
 - Document local/state approval of a geoduck aquaculture operation
 - Provide for public and adjacent landowner notice
 - Allow for enforcement of SMP requirements
 - Allow adaptive management through need to re-apply
 1. *Bonding?*
 2. *“Farm” plan approach?*

Approval Options – Shoreline Substantial Development Permit

- Shoreline Substantial Development Permit
 - AGO says depends on site-specific conditions
 - SMPs place requirements on many uses, activities and shoreline modifications that are exempt from Substantial Development permits

Approval Options – Conditional Use Permit

- Conditional Use Permit
 - Local jurisdictions are required to have a conditional use permit program
 - Uses that are not subject to a substantial development permit may be required to get conditional use approvals in some environments or critical areas.
 - Development in designated critical saltwater habitat is a conditional use—but Geoduck Aquaculture isn't always development (per AGO)

Other Guideline Options

- Predator exclusion devices and equipment like holding pools could be called out as specific shoreline modifications in the guidelines. Existing sections cover:
 - Shoreline stabilization
 - Piers and docks
 - Fill
 - Breakwaters, jetties, groins and weirs
 - Beach and dunes management

Approval Process Notifications

- SARC discussed notification options:
 1. *If no shoreline permit is required, then notification of exemption.*
 2. *Initial responsibility for notification should be on local government.*
 3. *Ongoing work/operations have different notification needs.*
 4. *Fact sheet should list activities and timelines.*
 5. *Clarify who initial notification should go to:*
 - a. *Adjacent property owners*
 - b. *Property owners within 300 feet*
 6. *Record aquaculture permit so future landowners are aware*

Bonding

- Legally define when and how bond is called.
- State lands have specific leasing section that references bonds.
- Define activities that would be covered under a bond.

Application Requirements

- Site information— ownership, boundaries, physical and biological characterization, surrounding uses, historic public access, etc.
- “Farm Plan”, including information on seed, predator exclusion, access, planting and harvest cycle, types and duration of predator exclusion devices, etc.

Other Guidelines Issues

- Definitions
- Conforming changes
- Requirements for local jurisdictions to maintain information on geoduck aquaculture, provide reports to the public
 - Areas, acreages
 - Monitoring results
 - Litter statistics