



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

State's Geoduck Aquaculture Program

After three years of study, the Department of Natural Resources (DNR) initiated the geoduck aquaculture program by soliciting a request for offers to lease state-owned aquatic lands.

Implementation of the DNR Geoduck Aquaculture Program will be cautious and measured, and it will ensure that geoduck aquaculture practices on state-owned aquatic lands are fully examined and environmentally sound. No geoduck aquaculture lease will be issued without first undergoing review under the State Environmental Policy Act (SEPA).

The geoduck aquaculture program plans to limit the amount of state-owned aquatic lands leased to twenty-five acres each year for ten years. The maximum number of acres that will be under production for the foreseeable future will be 250 acres. It is worth noting that DNR manages approximately 56,700 acres of intertidal lands in Washington, and the total acreage offered (250 acres) is less than one half of one percent of these total lands. DNR plans to lease only intertidal areas (mean high water to extreme low tide) for the next two to three years, but may consider leasing subtidal areas after that time. Further research is needed before subtidal leases are offered.



Aquaculture produced geoduck (with tubes removed). (Photo by DNR)

Background

In 2003 the Legislature gave DNR funding to study the feasibility of leasing state-owned aquatic lands for geoduck aquaculture. That study, the "Geoduck Aquaculture Pilot Project Phase I", produced reports on current farming practices, economics and science, and also reports identifying the needs for other research. DNR contracted with the University of Washington School of Aquatic & Fishery Sciences, Pacific Shellfish Institute and a number of other entities to conduct the Phase I feasibility study. The Phase I work also created a set of draft Best Management Practices (BMPs).

As a result of the findings of the Phase I feasibility study, DNR asked the 2005 legislature to fund an additional study (Phase II) and to pass a bill that would allow cultured geoducks to be sold like other cultured shellfish. The bill passed, although the Phase II study was not funded. DNR understood the need to collect the data, and thus is requiring some form of monitoring and data collection for all geoduck aquaculture leases. Implementing the leasing program is effectively the second phase of the overall project.

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DNR Geoduck Aquaculture Leases

DNR is taking a protective approach issuing leases by applying BMPs and by offering a very limited number of acres each year (25 acres). If the monitoring results indicate negative impacts to the environment, the BMPs will be revised and the leasing Program itself will be adaptively managed to address those impacts. The principles of adaptive management allow for safe, environmentally sound implementation of the Geoduck Aquaculture Program, *concurrent* with the collection of environmental monitoring data.

Environmental monitoring of lease areas

DNR, as the steward for state-owned aquatic lands, is committed to ensuring that geoduck aquaculture operations are environmentally sound. To that end, of the twelve geoduck aquaculture leases DNR intends to issue this year, three leases, known as environmental monitoring leases, will require monitoring of environmental conditions above and beyond the normal requirements that will be placed on the remaining nine leases. The environmental monitoring is designed to look at general impacts of the use on the environment, and not site-specific impacts. Not all growers have the capabilities or expertise to conduct scientific monitoring; nor does DNR have the ability to collect money from growers to hire a third party to conduct the scientific monitoring studies.



Planting geoduck in predator exclusion tubes with individual netting.
(Photo by DNR)

The three environmental monitoring geoduck aquaculture lease areas will be located in North Puget Sound, South Puget Sound and Hood Canal. The monitoring data from these leases will provide spatial and temporal data to identify status and trends and allow us to make conclusions about the impacts of each phase of the geoduck aquaculture process. The monitoring will collect baseline data and then capture the impacts of aquaculture activities *throughout the entire geoduck growing cycle*, from site preparation, to planting, tube removal, grow-out, harvest and post-harvest actions. Analysis of data will include

comparison to a control site outside the influence of the aquaculture site, but still within a statistically appropriate boundary.

The emphasis of the environmental monitoring leases for 2006 include:

- Changes to the diversity and abundance of epifauna (creatures living on the sediment surface) and benthic infauna (creatures living within the sediment);
- Changes in the physical and chemical properties of the sediment; and
- Changes to eelgrass and macroalgal distribution and abundance

The environmental monitoring work will continue for the next six to seven years—throughout the full cycle of the geoduck aquaculture leases. In addition, DNR also has two grant applications underway, as joint applicant with the University of Washington and industry, to research geoduck aquaculture methods and effects. DNR is also committed to seeking additional funding to conduct research into genetics.

The remaining nine leases will be issued through a Request for Offers (RFO) process. DNR released its first RFO to lease state owned aquatic lands in June 2006—this was for all nine sites, with a total combined area of nineteen acres. The RFO asks shellfish growers to submit proposals to conduct geoduck aquaculture on one or more of the sites. DNR will score the offers based on their management proposal, operations proposal and rent proposal, selecting only those offers that best meet the requirements set forth in the RFO and are in the best interests of the state of Washington and its current and future citizens. DNR will announce one successful potential lessee for each of the nine areas; that potential lessee then has the right to apply for, and move towards, a lease. The successful applicant will need to gain all necessary permits, along with a biological and land survey, before DNR will offer a lease for the land. This process is likely to take up to one year to complete.

The lease will require the lessee to acquire a bond for all terms and conditions associated with the lease, including effective debris management. DNR will also require various types of insurance, adherence to BMPs and an annual environmental review of the geoduck aquaculture practices. DNR's Land Managers will provide consistent monitoring and enforcement of the lessee's performance under the lease.

2006 DNR lease area sites were chosen with the following characteristics in mind:

- No upland residential development, or high bank with low development;
- Absence of eelgrass;
- Low natural stock densities of shellfish;
- Low recreational or tribal shellfish use;
- Greater than 200 feet from wild stock geoduck tracts, and
- Approved or potential to be approved for Health Certification.



Harvesting intertidal geoduck. (Photo by DNR)

Public Outreach to Local Property Owners

DNR believes public outreach is essential to the success of the program and has included it as one of the elements that will be used to score the geoduck aquaculture offers. DNR also intends to conduct its own local public outreach during August 2006.



Beach showing three stages of geoduck aquaculture. (Photo by DNR)

Legislatively Defined Responsibilities

DNR-directed environmental monitoring and research, which will be established over the next three years, will characterize the impacts to state-owned aquatic lands that may result from geoduck aquaculture. Adaptive management of the Program itself—along with the DNR Land Managers' consistent monitoring of the lessees' site management—will allow DNR to modify the BMPs to address any environmental impacts. DNR will work within the regulatory framework of the SEPA process to ensure all leases of state-owned aquatic land for geoduck aquaculture are reviewed and meet DNR's legislatively defined responsibilities of ensuring environmental protection, utilizing renewable resources, and fostering water dependent uses.