



DEPARTMENT OF
ECOLOGY
State of Washington

Final Progress Report

House Bill 2220 Shellfish Aquaculture Regulatory Committee

Report to the Washington State Legislature

House Committee on Ecology and Parks

House Committee on Agriculture and Natural Resources

House Committee on Natural Resources, Ocean and Recreation

December 2008

Publication no. 08-06-024

Publication and Contact Information

This report is available on the Department of Ecology's website at www.ecy.wa.gov/biblio/0806024.html

For more information contact:

Shorelands and Environmental Assistance (SEA) Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-6096

Washington State Department of Ecology - www.ecy.wa.gov

- Headquarters, Olympia 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Olympia 360-407-6300
- Central Regional Office, Yakima 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

To ask about the availability of this document in a format for the visually impaired, call the SEA Program at 360-407-6096. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Final Progress Report

House Bill 2220 Shellfish Aquaculture Regulatory Committee

Report to the Washington State Legislature

*House Committee on Ecology and Parks
House Committee on Agriculture and Natural Resources
House Committee on Natural Resources, Ocean and Recreation*

SEA Program
Washington State Department of Ecology
Olympia, Washington

This page is purposely left blank

Table of Contents

SUMMARY	1
I. The Shellfish Aquaculture Regulatory Committee: Background, Purpose and Membership.....	3
II. Progress on Task 1: Integrating existing regulatory processes for shellfish aquaculture.....	5
III. Progress on Task 2: Intertidal Geoduck Aquaculture Research Program	8
IV. Progress on Task 3: Recommendations for Geoduck Aquaculture Guidelines for Shoreline Master Program updates.....	10
V. Public Comment During the Shellfish Committee Process	24
VI. Future Ecology and Shellfish Committee Activities under SSHB 2220	26
VII. Background Materials	27
VIII. Appendix A: List of Shellfish Aquaculture Regulatory Committee Members	27

**Final Progress Report:
House Bill 2220 Shellfish Aquaculture Regulatory Committee**

The Department of Ecology has prepared this final progress report of the Shellfish Aquaculture Regulatory Committee to meet a requirement of Second Substitute House Bill 2220 (Chapter 216, Laws of 2007)

SUMMARY

Second Substitute House Bill 2220 (Chapter 216, Laws of 2007) created the Shellfish Aquaculture Regulatory Committee. The membership of the Committee is diverse, including representatives of local government, the shellfish aquaculture industry, the environmental community, shoreline property owners, state agencies and tribal governments. The Shellfish Committee has completed the main tasks assigned in the legislation, and will continue to serve an advisory role.

Recommendations for an integrated regulatory process for all current and new shellfish aquaculture projects

The legislation directs the Shellfish Committee to develop recommendations on:

“A regulatory system or permit process for all current and new shellfish aquaculture projects and activities that integrates all applicable existing local, state, and federal regulations and is efficient both for the regulators and the regulated;” (SSHB 2220 section 4 item 2(a))

The Shellfish Committee reviewed the existing regulatory programs that address shellfish aquaculture, including the requirement for shellfish aquaculture operations to get a federal Corps of Engineers permit. The Shellfish Committee learned existing shellfish aquaculture operations are covered by a new Nationwide Permit, Number 48. Operations not covered by the Nationwide Permit are required to get individual Corps of Engineers 404 permits. The Corps of Engineers has delayed approvals under the new Nationwide Permit #48 while the permit is reviewed for compliance with the federal Endangered Species Act. The Shellfish Committee did not identify any immediate opportunities to integrate the various regulatory programs but may take the topic up in the future.

Intertidal Geoduck Aquaculture Research Program

The Sea Grant program at the University of Washington is directed to lead a series of scientific research studies to examine the possible effects of geoduck aquaculture on Puget Sound. The Shellfish Committee provides advice to the Department of Ecology on the Geoduck Aquaculture Research Program. Oversight and advice ensures the Geoduck Research Program satisfies the planning, permitting, and data management needs of the state, helps prioritize funding, and identifies needed research other than what is listed in the legislation.

Washington Sea Grant invited Shellfish Committee members to a workshop called to receive research recommendations from experts from the United States, Canada and Europe, provided the Committee with an extensive review of the available scientific literature.

Washington Sea Grant received seven proposals for scientific research projects to examine the effects of geoduck aquaculture on the Puget Sound environment and selected four proposals, resulting in the following three projects:

- Geochemical and Ecological Consequences of Disturbances Associated with Geoduck Aquaculture Operations in Washington.
- Cultured-Wild Interactions: Disease Prevalence in Wild Geoduck Populations.
- Resilience of Soft-Sediment Communities after Geoduck Harvest in Samish Bay, Washington.

Completion of the Geoduck Aquaculture Research Program will require six years of funding. Projects started in Year 1 will continue into the second and third biennia of the program. Research on the effectiveness of using sterile triploid clams and the response of water column processes to geoduck aquaculture practices starts in Year 3.

Recommendations On Guidelines For Geoduck Aquaculture Operations

The legislation directs the Shellfish Committee to develop recommendations for appropriate geoduck aquaculture operation guidelines to include in shoreline master programs.

The Committee reviewed background documents, met with a wide range of experts on aquaculture and marine sciences, visited a geoduck aquaculture operation and discussed how local shoreline master programs should address geoduck aquaculture.

The Committee developed consensus recommendations on many issues. For issues where the Committee did not reach consensus, the Committee agreed to present the range of recommendations by Committee members. Committee members continue to disagree on many issues and these disagreements lead to opposing recommendations.

The recommendations of the Shellfish Committee are included in this progress report and are available as a separate report, *Shellfish Aquaculture Regulatory Committee Recommendations On guidelines For Geoduck Aquaculture Operations*. The Shellfish Committee report is available on the Committee's web site at:

<http://www.ecy.wa.gov/programs/sea/shellfishcommittee/index.html>.

Public Comment

There has been considerable public interest and involvement in the work of the Shellfish Committee and the issue of geoduck aquaculture in general. The comments received during the Shellfish Committee process have been compiled for consideration by Ecology as it develops and adopts guidelines for geoduck aquaculture operations.

Future Ecology and Shellfish Committee Activities under SSHB 2220

Since the Shellfish Committee has completed its recommendations regarding guidelines for geoduck aquaculture siting and operation, the Department of Ecology will develop and adopt, by rule, Shoreline Master Program Guidelines for geoduck aquaculture. The Shellfish Committee will advise Ecology throughout the process. Ecology intends to complete the rulemaking process during 2009.

PROGRESS REPORT

I. The Shellfish Aquaculture Regulatory Committee: Background, Purpose and Membership

Background on Geoduck Aquaculture

The Pacific geoduck, *Panopea abrupta*, is an exceptionally large clam native to the marine waters of Washington. Geoducks normally live over a wide range of water depths, from the lower intertidal down to more than 200 feet. Over the last decade shellfish growers have developed aquaculture techniques to grow geoduck clams in the intertidal zone. The most common method involves inserting plastic tubes into the beach at low tide, planting cultured geoduck seed in the tubes, and covering the tubes with netting.

Shellfish aquaculture operates in a unique regulatory environment. Shellfish aquaculture operations need to receive approvals from the U.S. Army Corps of Engineers, the Washington Department of Health and the Washington Department of Fish and Wildlife. They may also need a Substantial Development Permit or other approval under the Shoreline Management Act.

Converting intertidal beaches to geoduck aquaculture has resulted in conflicts with some existing shoreline residents who feel geoduck aquaculture alters the nature of their shorelines. Some private owners of tidelands see geoduck aquaculture as an appropriate water-dependent use which allows them to receive an income from their property.

In addition, there are few published scientific studies on the possible effects of geoduck aquaculture on the marine ecosystem and many scientific studies have been proposed.

Formation of the Shellfish Aquaculture Regulatory Committee

In 2007 the Washington State Legislature passed Second Substitute House Bill 2220 (Chapter 216, Laws of 2007) relating to shellfish aquaculture. Section 4 of the bill sets up the Shellfish Aquaculture Regulatory Committee (Shellfish Committee) to serve as the advisory body to the Department of Ecology on regulatory processes and approvals for all current and new shellfish aquaculture activities, and on guidelines for local shoreline master programs as they relate to shellfish.

The director of the Department of Ecology appoints the members of the Shellfish Committee. The membership consists of:

- Two representatives of county government, one from a county located on the Puget Sound, and one from a county located on the Pacific Ocean;
- Two individuals who are professionally engaged in the commercial aquaculture of shellfish, one who owns or operates an aquatic farm in Puget Sound, and one who owns or operates an aquatic farm in state waters other than the Puget Sound;
- Two representatives of organizations representing the environmental community;
- Two individuals who own shoreline property, one of which does not have a commercial geoduck operation on his or her property and one of which who does have a commercial geoduck operation on his or her property; and
- One representative each from the following state agencies: The department of ecology, the department of fish and wildlife, the department of agriculture, and the department of natural resources.

In addition, the Governor invited the full participation of two tribal governments.

Appendix A contains a complete list of the Shellfish Committee members.

Assignments to the Shellfish Aquaculture Regulatory Committee

The legislation assigns three tasks to the Shellfish Committee:

Task 1: Develop recommendations for an integrated regulatory process for all current and new shellfish aquaculture projects.

Task 2: Oversee the intertidal geoduck scientific research program authorized by the bill.

Task 3: Develop recommendations for appropriate guidelines for geoduck aquaculture operations to be included in shoreline master programs. Ecology will adopt guidelines under section 5 of the legislation¹. When developing the recommendations for guidelines, the Committee must examine the following:

- i. Methods for quantifying and reducing marine litter; and
- ii. Possible landowner notification policies and requirements for establishing new geoduck aquaculture farms.

The Department of Ecology is directed to provide staff to support the Shellfish Committee and report the recommendations and findings of the Shellfish Committee to the appropriate committees of the legislature by December 1, 2007, with a further report, if necessary, by December 1, 2008. [2007 c 216 § 4 uncodified]

Ecology submitted “Interim Progress Report: House Bill 2220 Shellfish Aquaculture Regulatory Committee” to the legislature in December 2007.

Background on the Legal Context

The work of the Shellfish Committee and state agencies under Second Substitute House Bill 2220 is occurring within a dynamic legal context. Recent legal challenges and hearings board decisions are focusing on key issues regarding how to balance the needs of commercial aquaculture and the needs of nearby residential uses. These decisions will provide guidance to Ecology as the Shoreline Master Program Guidelines Rule is updated in the coming year. Board and court decisions will likely continue to clarify the legal context for intertidal aquaculture over the coming years. The legislation directs Ecology to adopt guidelines right away, with the understanding that Ecology may have to change the guidelines in the future to reflect changes in the legal context as well as new scientific findings.

Important recent or current cases include *Marnin v. Mason County*, (SHB No. 07-021), *Taylor Shellfish Farms v. Pierce County*, (SHB Nos. 06-039, 07-003 and 07-005), and *Taylor Resources AKA Taylor Shellfish Farms v. Pierce County*, (SHB Nos. 08-010 and 08-017).

¹ Section 5 directs the Department of Ecology to develop, by rule, guidelines for the appropriate siting and operation of geoduck aquaculture operations to be included in any local shoreline master program.

II. Progress on Task 1: Integrating existing regulatory processes for shellfish aquaculture

Section 4 of SSHB 2220 directs the Shellfish Committee to develop recommendations on:

“A regulatory system or permit process for all current and new shellfish aquaculture projects and activities that integrates all applicable existing local, state, and federal regulations and is efficient both for the regulators and the regulated;” (SSHB 2220 section 4 item 2(a))

Over several months of discussion, the Shellfish Committee identified two basic elements within Task 1 – recommendations to “integrate existing regulations” and to be “efficient” which the Shellfish Committee took to mean streamlining agency processes.

Permit Integration

During the summer and fall of 2007 the Shellfish Committee received presentations and had discussions with representatives of federal, state and local government agencies on the regulatory and permitting processes that apply to shellfish aquaculture. Experts from the Washington Department of Fish and Wildlife, the Department of Health, the U.S. Army Corps of Engineers, the Department of Natural Resources, the Department of Ecology and from Pierce and Pacific counties covered the Shoreline Management Act, the Growth Management Act, Corps permits, Shellfish Sanitation, shellfish farm registration and aquatic lands leasing. Of particular interest was the requirement for permits from the Corps of Engineers.

Through this review, the Committee learned that a number of permitting and regulatory programs apply to different aspects of shellfish aquaculture.

Since shellfish can transmit water-borne diseases to consumers, the Washington Department of Health tests water quality and carries out sanitary surveys to certify whether growing areas are acceptable for shellfish harvest. Health certifies water areas, not property parcels.

In the past, shellfish growers have, intentionally or accidentally, introduced non-native shellfish species into Washington waters. As a result, some non-native species have become widely established and have replaced native species. In addition, shellfish transferred from hatcheries or other locations may carry diseases or parasites. The Washington Department of Fish and Wildlife has a shellfish transfer permitting system designed to minimize the risk of transferring or introducing parasites and disease into areas where they currently do not exist.

Shellfish aquaculture can conflict with other uses and affect the environment. Most activities that affect the beds of state waters must receive a Hydraulic Project Approval from the Washington Department of Fish and Wildlife but shellfish aquaculture operations are exempt from this requirement.

While a shellfish aquaculture operation must comply with the local Shoreline Master Program under the Shoreline Management Act, it is only required to get a local Substantial Development Permit if the local jurisdiction determines it fits the definition of development.

The U.S. Army Corps of Engineers requires permits under Section 10 of the Rivers and Harbors Act for activities that interfere with navigation and under Section 404 of the federal Clean Water Act for projects that discharge dredged or fill material. Activities that need a Corps permit under Section 404 of the Clean Water Act also must obtain a water quality certification. The Washington Department of Ecology issues water quality certifications for most activities in

Washington. Just in the past decade some Corps offices began requiring Corps permits for shellfish aquaculture. In 2007, the Corps of Engineers issued a Nationwide Permit that covers the continued operation of existing shellfish aquaculture operations and clarified that shellfish aquaculture operations not covered by the Nationwide Permit will need to obtain individual Corps of Engineers permits. In Washington, the Department of Ecology issued a water quality certification for shellfish aquaculture operations covered by the Nationwide Permit, except for those involving geoduck aquaculture. Ecology will consider individual water quality certifications for geoduck aquaculture operations covered by the Corps Nationwide Permit as well as for new operations receiving individual permits. When a Corps of Engineers Permit may affect a species listed under the federal Endangered Species Act, the Corps must consult with the National Marine Fisheries Service and/or the U.S. Fish and Wildlife Service. As of early 2009, the consultation process for the Nationwide Permit for shellfish aquaculture had not been completed and, therefore, applications to operate under the Nationwide Permit or for individual permits were not being processed. Since the ESA consultation on the Nationwide Permit will identify possible conflicts between geoduck aquaculture and threatened or endangered species, processing of individual Corps permits has also been held up.

At the November 26, 2007 Shellfish Committee meeting, shellfish industry representatives proposed there were no major integration actions necessary under Task 1. While some Shellfish Committee members expressed concerns about considering Task 1 complete, no opportunities for immediate integration were identified and the Committee has not done any further work on recommendations for regulatory integration. Some Shellfish Committee members remain concerned that existing regulatory processes do not fully protect shoreline residents or the environment.

The Shellfish Committee subsequently considered a wide range of possible restrictions on geoduck aquaculture while developing guideline recommendations for local Shoreline Master Programs under Task 3. Some Shellfish Committee members have said that they may want to revisit the issue of permit integration after developing the shoreline program recommendations.

Streamlining agency permit processes

At the beginning of its work on Task 1, the Shellfish Committee asked the relevant agencies to examine how to streamline regulatory processes and to report findings back to the committee. Agencies were asked to:

- Map the various regulatory processes;
- Identify places to integrate or streamline procedural steps;
- Determine available databases and identify opportunities for sharing and consolidating data.

Because of this work, agencies have improved coordination in anticipation of the new federal permit requirements and worked on data sharing among state programs.

• Federal Permit Coordination

As mentioned above, the new Corps of Engineers permit requirement for shellfish aquaculture has raised many concerns about permit integration. In September 2006, the Corps determined that a Section 404 permit should be required for all new and existing shellfish aquaculture, because customary shellfish aquaculture activities involve disturbing sediments and may affect water quality. Under Section 401 of the federal Clean Water Act, Section 404 permits must also

receive a certification from the state that water quality will be protected. In Washington, the Department of Ecology carries out Section 401 certifications.

The Corps of Engineers also issued a new Corps Nationwide Permit #48 (NWP 48), *Existing Commercial Shellfish Aquaculture Activities*. Shellfish aquaculture activities covered by the Nationwide Permit are not required to apply for individual Corps permits. As part of the process, the Corps requested a Section 401 water quality certification from the Department of Ecology for the Nationwide Permit #48. Ecology included a condition in the 401 Certification requiring individual reviews by Ecology for each intertidal geoduck aquaculture operation seeking coverage through the Nationwide Permit #48. Ecology determined federal review addresses other types of existing shellfish aquaculture adequately, without any further review by the State.

To receive coverage under Nationwide Permit #48, a grower must submit basic information about their operation including culture and harvest methods, cultivated species, the use of predator exclusion devices, and copies of site maps and existing state approvals. As part of the Section 401 conditions, Ecology has also asked growers to submit a worksheet with additional information Ecology staff would need for permit review.

While Nationwide Permit #48 is in force, federal resource agencies have not completed their review of the permit under the Endangered Species Act. Once the review is completed, Ecology will begin reviewing applications from existing geoduck aquaculture operations.

- **State Permit Data Coordination**

The Shellfish Committee identified state agency data systems as a key opportunity for improving permit processes. Section 6 of SSHB 2220 (RCW 77.115.040) increased requirements for shellfish aquaculture operations to register as aquatic farms with the Washington Department of Fish and Wildlife. The department is to maintain this information in an electronic database, update the information at least annually and coordinate with the Department of Health, which has growing area certification information, when updating the data. Jesse DeLoach, an active participant with the Shellfish Committee from the Department of Health, helped put together an interagency group with representatives from the departments of Ecology, Fish and Wildlife, Agriculture, Health, and Natural Resources to consider how to integrate state agency data management.

The departments of Health and Fish and Wildlife continue working together to improve and coordinate their data.

- **Forage Fish Habitat Protection**

At the March, 2008 meeting of the Shellfish Committee, Dan Penttila of the Washington Department of Fish and Wildlife presented forage fish habitat information. The presentation was well received by the committee and the many citizens and representatives from other agencies who came to observe. It was clear to the participants that training federal, state and local agency staff on forage fish habitat would improve their regulatory activities. To support the work of the Shellfish Committee, Mr. Penttila agreed to offer a one-day training session on how to identify forage fish habitat.

Twenty people from local, state, and federal agencies attended. The training included a lecture period, sample collection in the field, sample sorting and washing, and lab time to evaluate the samples collected and other samples with known presence of fish eggs. This experience helps

build knowledge, understanding and consistency at all levels of government for a topic recognized as one of critical significance as it applies to intertidal geoduck aquaculture.

III. Progress on Task 2: Intertidal Geoduck Aquaculture Research Program

Section 1 of SSHB 2220 (RCW 28B.20.475) directs Washington Sea Grant to review existing scientific information and commission scientific research studies to assess possible effects of geoduck aquaculture on the Puget Sound and Strait of Juan de Fuca environments. The Shellfish Aquaculture Regulatory Committee and the Department of Ecology are directed to provide advice to Washington Sea Grant. Their input ensures the research satisfies the planning, permitting, and data management needs of the state, assists in the prioritization of research and helps to identify needed research other than what is listed in the legislation.

Washington Sea Grant must complete the studies and report the results to the Legislature by December 1, 2013. The studies should examine key uncertainties related to the ecosystem and community effects of geoduck aquaculture and its implications for the health of natural geoduck populations. The bill assigns top priority to an assessment of the environmental effects of commercial aquaculture harvesting.

Bivalve research workshop

To inform the tasks defined in SSHB 2220, Washington Sea Grant convened the *Northwest Workshop on Bivalve Aquaculture and the Environment* (Seattle, September 13th to 14th, 2007). The workshop gathered experts from the United States, Canada and Europe and provided recommendations for research needed to fill existing data gaps. Several Shellfish Committee members and interested parties attended the workshop. All workshop materials are available on the Washington Sea Grant website at:

http://wsg.washington.edu/research/geoduck/shellfish_workshop.html.

Literature Review

Washington Sea Grant contracted with researchers in the School of Aquatic and Fishery Sciences, University of Washington, to conduct an extensive literature review of the current research findings related to geoduck aquaculture. The authors reviewed 358 primarily peer-reviewed sources. The final literature review, *Effects of Geoduck Aquaculture on the Environment: A Synthesis of Current Knowledge*, is available on the Washington Sea Grant Web site:

http://wsg.washington.edu/research/geoduck/literature_review.html.

Research Project Selection

Washington Sea Grant received seven applications in response to the request for scientific research projects to examine the effects of geoduck aquaculture on the Puget Sound environment. Applications were submitted to peer review, and a panel of scientific experts met to develop funding recommendations. Perry Lund represented Ecology on this review panel. The panel recommended funding for four projects. They recommended combining two projects dealing with harvesting and planting operations to develop a more integrated and comprehensive study. Washington Sea Grant briefed the Shellfish Committee on the process, resulting in the following three projects:

Geochemical and Ecological Consequences of Disturbances Associated with Geoduck Aquaculture Operations in Washington.

As part of a large-scale multidisciplinary study, researchers are addressing several of the most pressing issues regarding the effects of geoduck aquaculture on the Puget Sound ecosystem:

- 1) What are the effects of aquaculture structures on plant and animal communities in or on Puget Sound beaches?
- 2) Do structures change the behavior or movements of commercially and ecologically important fish and shellfish?
- 3) How does disturbance during geoduck harvesting affect plant and animal communities and subsequent recovery of the ecosystem?
- 4) How does the disturbance alter the physical and chemical properties of harvested beaches?

The project occurs over a six-year period at sites throughout Puget Sound to ensure investigation of all stages of aquaculture activities over a range of locations and will provide balanced scientific information for policy decisions.

Cultured-Wild Interactions: Disease Prevalence in Wild Geoduck Populations.

Geoduck resource management is hindered by a lack of baseline information on the health and condition of wild geoduck populations. Without prior knowledge of the prevalence of parasites and disease, it can be difficult to identify the causative agent of an epidemic. Baseline data provides information on possible pathogens and insight into whether the initial outbreak or re-emergence of a disease is related to an endemic or newly introduced parasite. Researchers initially will characterize parasites and other disease organisms associated with geoducks and determine their prevalence in three wild populations representing southern Puget Sound, Hood Canal and the Strait of Juan de Fuca. In later stages of the project, they will examine the effectiveness of using sterile triploid clams to reduce or inhibit gene flow between cultured and wild stocks.

Resilience of Soft-Sediment Communities after Geoduck Harvest in Samish Bay, Washington.

Commercial geoduck beds share waters with soft-sediment tideflats and eelgrass meadows—two habitat types that host diverse communities of plants and animals. In 2002, geoducks were planted in a soft-sediment tideflat in Samish Bay to establish a commercial shellfish bed. Since then, eelgrass has colonized the bed. The 2008 harvest of the farmed clams offers a unique opportunity to study the effects of geoduck aquaculture on eelgrass meadow habitat. The project is exploring habitat changes associated with a commercial geoduck bed during the aquaculture cycle, from harvesting through reseeded. Detailed surveys from before and after these events, both inside and outside the geoduck bed, will produce data on initial impacts on and rates of recovery for invertebrate communities in eelgrass meadows and soft sediments. These data will shed light on interactions between commercial geoduck aquaculture practices and local marine habitats.

Schedule and Funding for Geoduck Research

Completion of the Geoduck Aquaculture Research Program will require six years (three biennia) of funding (Figure 1). Projects started in Year 1 will continue into the second and third biennia of the program. Research on the effectiveness of using sterile triploid clams and the response of

water column processes to geoduck aquaculture practices will start in Year 3 to augment other continuing programs.

Without continued funding to complete the research projects, the intent of SSHB2220 to provide science to support future management of geoduck aquaculture will be unmet. More importantly, the research to support future changes to the guidelines through adaptive management will be impossible to complete.

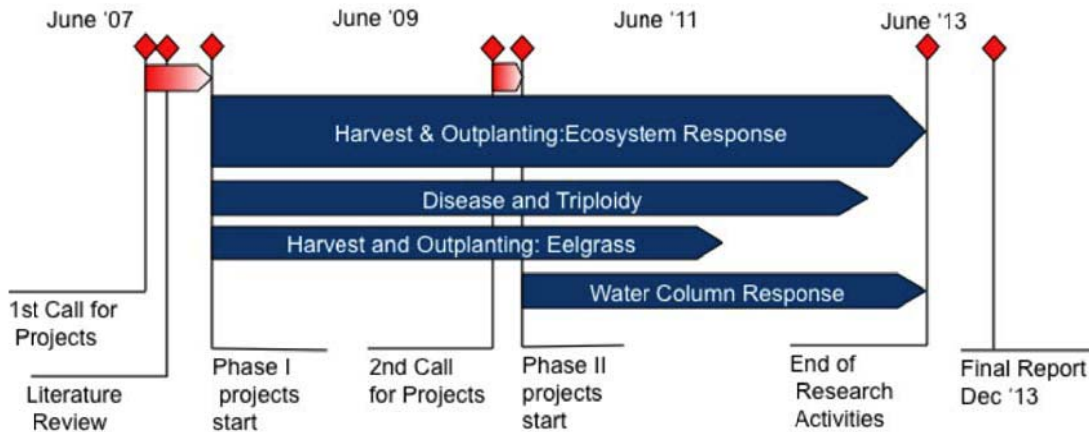


Figure 1. Timeline for completion of Geoduck Research Program.

IV. Progress on Task 3: Recommendations for Geoduck Aquaculture Guidelines for Shoreline Master Program updates

Section 4 of Second Substitute House Bill 2220 directs the Shellfish Committee to develop recommendations for appropriate guidelines for geoduck aquaculture operations to include in shoreline master programs.

The Committee reviewed background documents, met with aquaculture and marine sciences experts, visited a geoduck aquaculture operation and discussed how local shoreline master programs should address geoduck aquaculture.

The Committee developed consensus recommendations on many issues. For issues where the Committee did not reach consensus, the Committee agreed to present the range of recommendations by Committee members. Committee members continue to disagree on many issues and these disagreements lead to opposing recommendations. Included below are the consensus recommendations of the Committee, followed by the complete list of recommendations. The recommendations of the Shellfish Committee are also available as a separate report, *Shellfish Aquaculture Regulatory Committee Recommendations On guidelines For Geoduck Aquaculture Operations*, which is available on the Committee’s web site at:

<http://www.ecy.wa.gov/programs/sea/shellfishcommittee/index.html>.

Remaining Disagreements

While the Committee members were able to reach agreement on a number of general recommendations, they remain far apart on many details. Some private tideland owners,

including shellfish companies, want to raise geoducks for market. Some shoreline residents dislike having what they see as an industrial activity occurring near them. Many people are concerned that geoduck aquaculture will harm the ecological functions of the shorelines. Shoreline residents point out that residential use is one of the preferred uses of the shoreline under the Shoreline Management Act. Shellfish growers point out that water-dependent uses like aquaculture are also priority uses of the shoreline. Protecting and restoring ecological functions, a key priority of the Act, has been emphasized by environmental group representatives on the Committee.

The differing positions among Committee members results in conflicting recommendations. Some members recommend setbacks along property boundaries, some oppose setbacks. Some recommend a prohibition on mooring over submerged vegetation, others oppose a prohibition. In the end, these disagreements will need to be addressed by local jurisdictions—in many cases on a site-by-site basis.

Consensus Recommendations For Guidelines For Geoduck Aquaculture

Overall Principles

The Committee recommends designing geoduck aquaculture guidelines to meet the shoreline goal of achieving no net loss of ecological functions provided by shorelines and to minimize conflicts with other land uses.

Shoreline Use Designations

The Committee recommends that local jurisdictions identify where geoduck aquaculture would or would not be allowed, subject to site-specific reviews, when establishing shoreline designations.

Requirements for Siting and Operation

The Committee recommends:

- Local jurisdictions consider the extent and sensitivity of ecological features like eelgrass beds when considering whether a specific site is appropriate for geoduck aquaculture.
- Basing consideration of the sensitivity of habitat features on the site location.
- Restricting geoduck aquaculture at sites requiring major physical alterations before use.
- Local jurisdictions consider possible conflicts with surrounding land uses before approving new or expanded geoduck aquaculture operations.
- Local jurisdictions defer to the Department of Fish and Wildlife on minimizing the risk of introducing parasites and disease with geoduck seed.
- Requiring buffers between sensitive habitats and planted geoducks.
- Restricting geoduck aquaculture to sites that are fundamentally suitable for geoduck harvesting without the need for grading or rock removal.
- Guidelines address the ecological effects of tubes, nets and other predator exclusion devices.
- The guidelines not require public access to private tidelands used for geoduck aquaculture.

- Growers make every effort to prevent the loss of tubes, nets and other items and should recover litter and debris to the extent feasible.

Approval Process

The Committee recommends:

- The local jurisdiction provide public notice of a proposal for a new or expanded geoduck aquaculture operation regardless of the approval process being followed.
- As part of any local approval process, two types of information be provided by the applicant: a baseline survey of the proposed site to allow consideration of the ecological effects and a narrative description of the proposed aquaculture activities.
- New or expanded geoduck aquaculture operations receive prior approval through a shoreline substantial development permit, a conditional use permit or a written exemption determination. An approach allowing new or expanded geoduck aquaculture operations without any prior approval is inadequate to meet the general principles of achieving no net loss of ecological function and minimizing land use conflicts.

Complete List of Recommendations For Guidelines For Geoduck Aquaculture

Overall Principles

The Committee recommends designing guidelines for geoduck aquaculture to meet the shoreline goal of achieving no net loss of ecological functions provided by shorelines and to minimize conflicts with other land uses.

In making its recommendations, the Committee recognizes while requirements included in the Ecology guidelines and local master programs are enforceable, the guidelines and local master programs will not be revised very often. Many Committee members recommend the management of geoduck aquaculture have the flexibility to respond to new aquaculture techniques or new scientific information about the ecological effects of geoduck aquaculture and recommend putting detailed requirements, when appropriate, in a technical guidance document developed and periodically updated by the Department of Ecology. The technical guidance document should contain detailed recommendations and best management practices for use by local jurisdictions in administering the local master programs.

One Committee member opposes giving the geoduck aquaculture industry the flexibility to introduce new aquaculture techniques.

Specific Recommendations

The Shellfish Aquaculture Regulatory Committee organized recommendations into five sections:

- A. Shoreline use designations,
- B. Requirements for siting,
- C. Requirements for operation,
- D. Approval processes, and
- E. Other recommendations.

A. Shoreline Use Designations

When a local shoreline master program is adopted, the local jurisdiction divides the shoreline zone into several separate shoreline environments. Specific shoreline uses are only allowed in certain environments. In addition to dividing the shoreline zone into these classifications, the local government may designate critical areas and can establish other overlays that allow or prohibit specific uses or impose more requirements.

The Committee recommends local jurisdictions identify where geoduck aquaculture would or would not be allowed, subject to site-specific reviews, when establishing shoreline designations. When designating the shoreline, local jurisdictions should compile and analyze information on existing intertidal habitats and function as well as current land uses. Jurisdictions can then decide to allow, or not allow, geoduck aquaculture along sections of the shoreline both to ensure meeting the overall principle of no net loss of ecological functions and to reduce the likelihood of land use conflicts.

Several Committee members recommend protecting habitats of sensitive species.

Some Committee members also mentioned that upland uses can cause pollution that prevents shellfish harvest.

One Committee member considers the topic of upland pollution irrelevant to the work of the Shellfish Committee.

Several Committee members recommend local jurisdictions consider cumulative effects when designating areas for geoduck aquaculture by reviewing the current extent of geoduck aquaculture and possible expansions.

Many Committee members recommend Ecology provide more specific information on habitat issues to local jurisdictions as well as sources of data.

Some Committee members are concerned that prohibiting geoduck aquaculture based on shoreline designations would likely eliminate some of the most appropriate areas for geoduck farming, where neighbors might embrace the activity.

One Committee member does not recommend prohibiting geoduck aquaculture through shoreline designations because it may raise concerns with tribal governments.

Designation Tools

The Committee discussed several tools available to local governments to designate areas where geoduck aquaculture is or is not allowed. One approach is to define sub-categories of the “aquatic” environment, with geoduck aquaculture only allowed in one (or some) of the sub-categories. Another approach is to define at least two critical saltwater habitat designations in the local shoreline master program with geoduck aquaculture only allowed in one. Finally, local jurisdictions can do a special area plan for geoduck aquaculture that would be a separate overlay to the land use map. The Committee has no recommendation on which approach each local jurisdiction should take but offers this list of pros and cons.

Use Shoreline Critical Area designations to better identify where geoduck aquaculture may be allowed.

Pros:

1. Recreational and commercial shellfish beds are critical areas under SMA. Other critical areas (e.g., salmon, forage fish, eelgrass, and bird nesting or rearing) may be located on shorelines where shellfish beds occur.
2. Critical Area designations provide opportunities for broad citizen participation.

Cons:

1. Spatial mapping of eelgrass beds, forage fish, salmon rearing and migration, and other critical areas, as well as land use inventories, would likely be needed prior to drawing specific geoduck aquaculture sites or districts on the map. Many jurisdictions have not mapped all their critical areas, making this difficult.
2. The purpose of Critical Area designations is to designate and protect critical area functions and values. Critical Area designations are good for protecting critical areas from water quality and habitat impacts. However, they are not set up to address siting or conflicts between geoduck aquaculture and adjacent land uses or navigation or public access issues.

Use Shoreline Master Program (SMP) aquatic environment designation to identify areas where geoduck aquaculture would be allowed.

Pros:

1. SMP updates need extensive inventory and characterization of natural resources and land use patterns within shoreline jurisdictions that would provide a framework for creating a specialized aquatic designation for geoduck aquaculture.
2. Aquaculture is a preferred water-dependent use under the Shoreline Management Act when properly managed to assure no net loss of shoreline ecological functions.
3. SMP guidelines provide guidance for regulating uses such as aquaculture. The guidelines also provide guidance for shoreline modifications associated with aquaculture (piers, fill, groins, etc.).
4. SMP adoption is a good opportunity to inventory shoreline uses and prevent uses that are incompatible with preferred water-dependent uses or other uses or with navigation or public access.
5. SMP environmental designations provide a framework for adopting shoreline policies and regulatory measures specific to local shoreline conditions.
6. SMP updates include broad citizen participation.
7. Several jurisdictions have already defined areas suitable for aquaculture in their SMPs (Island County, Pierce County).

Cons:

1. There is disagreement within the Shellfish Committee as to the level of detail that should be included for geoduck aquaculture in the guidelines rule adopted by Ecology or in technical guidance that may be updated more frequently. Less rule detail provides less certainty for property owners concerned about conflicts and fewer criteria for Ecology to assess consistency of the SMP with the Shoreline Management Act. Having less detail in

the rule may provide jurisdictions more flexibility in developing their SMPs and shellfish farmers more flexibility in improving technologies.

Create a special overlay (special area planning) to identify those areas where geoduck aquaculture may be allowed.

Pros:

1. This regulatory tool may be used to implement shoreline critical area designations or SMPs in shorelines.

Cons:

1. Unless undertaken as part of Critical Area Ordinance or Shoreline Master Program analyses, there may be additional costs associated with the inventory and analyses needed to provide technical rationale.

B. Requirements for Siting of Geoduck Aquaculture Projects

The Committee discussed issues related to whether geoduck aquaculture should be allowed on a specific site. An important consideration is whether the site has ecological characteristics that would be harmed by geoduck aquaculture to such a degree the goal of achieving no net loss could not be met.

The Committee recommends that local jurisdictions consider the extent and sensitivity of ecological features like eelgrass beds when considering whether a specific site is appropriate for geoduck aquaculture. If only part of a site has sensitive features, the local jurisdiction may consider buffers to protect those features.

Many Committee members recommend the applicant prepare a baseline habitat survey to determine what ecological features are present at a proposed site.

The Committee recommends basing the consideration of the sensitivity of habitat features on the site location. For example, a habitat feature common in Willapa Bay may be considered sensitive in a portion of Puget Sound.

One Committee member recommends the guidelines prohibit geoduck farming in designated forage fish spawning areas.

The Committee recommends restricting geoduck aquaculture at sites requiring major physical alteration before use.

One Committee member recommends the guidelines address the risk of sediment contamination from past industrial activities being released by geoduck aquaculture activities.

To minimize conflicts with adjacent land uses, the Committee recommends local jurisdictions consider possible conflicts with surrounding land uses before approving new or expanded geoduck aquaculture operations. Public beaches, boat launches and upland residential developments might conflict with geoduck operations.

One Committee member states that geoduck farming impinges on rural as well as high-density housing and recommends upland owners be afforded protections from aquaculture changing the nature of the shorelines they purchased.

C. Requirements for Operation of Geoduck Aquaculture projects

Stock selection and health

Growers obtain geoduck seed from hatcheries. Since the geoducks planted by aquaculture operations may reproduce before harvest, there is a potential for the cultured clams to interact with the genetics of the wild populations. Research is currently being done on the genetics of wild and cultured geoducks.

Many members of the Committee recommend the genetics issue be included as a general issue in the guidelines and specific recommendations be included in technical guidance when they become available. Many Committee members recommend deferring to the Department of Fish and Wildlife on this issue.

Hatchery seed may also carry diseases and parasites. The Washington Department of Fish and Wildlife has a shellfish transfer permitting system designed to minimize the risk of transferring or introducing parasites and disease into areas where they currently do not exist. The Committee recommends deferring to the Department of Fish and Wildlife on this issue.

Growing and Holding Pools

The Committee discussed using plastic pools in the intertidal zone to hold geoduck seed before planting. Representatives of geoduck growers told the Committee holding pools are not part of each geoduck aquaculture site but are located at only a few locations. The Committee also considered the possibility of holding pools placed in the uplands or floating on barges.

Committee members recommend local jurisdictions address upland holding pools like other upland aquaculture facilities.

Many Committee members recommend that intertidal holding pools, those placed directly on the intertidal substrate, should be limited in the total area covered and number of sites where they are permitted. Several Committee members recommend that intertidal holding pools not be included in the Ecology guidelines for geoduck aquaculture operations.

Buffers Between Planted Geoducks and Sensitive Habitats

The Committee recommends requiring buffers between sensitive habitats and planted geoducks. Many Committee members recommend a general statement about buffers be included in the guidelines and recommended distances be included in technical guidance documents as recommended best management practices. Several Committee members recommend buffers of at least 25 feet from sensitive habitat elements.

Setbacks Along Property Boundaries

Many Committee members recommend against requiring setbacks between planted geoducks and property lines. Several Committee members recommend the guidelines have a general statement that setbacks may be appropriate along property boundaries to avoid the need to cross property lines to plant and harvest the geoducks. One Committee member recommends setbacks between planted geoducks and adjacent intertidal properties to prevent silt from harvesting from harming adjacent properties and to allow workers and equipment to reach the geoducks without crossing property lines.

Alterations to the Site Before Planting

The Committee discussed how physical alterations to a site which is not “ready to go” may result in damage to ecological functions. The Committee recommends restricting geoduck aquaculture to sites that are fundamentally suitable for geoduck culture without the need for grading or rock removal. Many Committee members recommend including a statement that alterations should be restricted. Several Committee members recommend the guidelines include standards that prohibit grading that changes shoreline profiles or removes natural epibenthic organisms and vegetation. They recommend that the guidelines minimize removal of rocks.

One Committee member recommends not allowing tideland modifications that alter the natural substrate, vegetation, organisms, natural gravel/rocks essential for forage fish, or fish habitat. This Committee member also recommends not allowing tractors and dragging barges.

Harvest of Wild Clams Before Planting

Many Committee members recommend the guidelines include a general statement about the need to respect Tribal shellfish rights when harvesting wild clams. Some Committee members recommend not including this issue in the guidelines because court rulings establish Tribal shellfish and are not subject to a local Shoreline Master Program.

Planting Density

Many Committee members recommend against establishing a limit for the number of tubes or clams per square foot or square meter. Many Committee members recommend local consideration of the overall carrying capacity of the affected water body and the overall scale of geoduck aquaculture operations in each region. Many Committee members recommend dropping the issue of planting density from the guidelines.

Timing of Planting or Harvest to Minimize Fish and Wildlife Effects

Many Committee members recommend a general statement in the guidelines that local jurisdictions may restrict intensive aquaculture activities like inserting tubes or harvesting clams during times when sensitive fish or wildlife may be present. The need for such restrictions should be identified in the baseline identification of sensitive habitat features for the site. Several Committee members recommended that guidelines developed by the Washington Department of Fish and Wildlife for in-water construction be considered. One Committee member recommends avoiding operations that would disturb sensitive marine bird congregating and nesting areas during any sensitive period.

Materials Used for Predator Exclusion Devices (Tubes and Nets)

The visual impact of the tubes and nets used to protect geoducks from predators has been identified as an issue that should be addressed. Many Committee members recommend a general statement in the guidelines that materials should be selected to minimize their visual impact. Several of these Committee members recommend that best management practices be included in technical guidance. One Committee member recommends prohibiting plastics in intertidal or subtidal areas. Several Committee members recommend not including this issue in the guidelines.

One Committee member recommends the aesthetics of geoduck aquaculture operations be considered as a whole because aesthetics cannot be quantified in terms of the color of the tubes

or whether they are in straight rows, but rather is a pervasive value related to the entire industrial operation on the shoreline and how it alters the beach habitat.

Ecological Effects of Predator Exclusion Devices

The Committee recommends the guidelines address the ecological effects of tubes, nets and other predator exclusion devices. Several Committee members recommend including a general statement about reducing ecological effects in the guidelines. Several Committee members recommend designing predator exclusion devices to minimize ecological effects, including effects on birds and mammals. Several Committee members recommend that growers remove tubes and nets as soon as they are no longer needed for predator exclusion. Several recommend there be limits on the portion of a site that is covered by tubes and nets at any one time. One Committee member recommends establishing standards for net sizes to minimize harm to birds and other species. One Committee member recommends establishing standards for net sizes, the percentage of tidelands that can be covered by nets, the length of time nets are left in place, and the timing of placing nets.

Effects of Harvest

Many Committee members recommend the guidelines include a general statement on the need to manage the effects of water jets or other methods used to harvest geoduck clams. They recommend including best management practices in the technical guidance. Several Committee members recommend against harvesting during periods of spawning and incubation in identified forage fish spawning areas. Several Committee members recommend limits on noise from water pumps if there are not general limits on noise. One Committee member recommends a process for people to make complaints and have them resolved. Many Committee members recommend that local jurisdictions consider performance-based standards tailored to the locations where geoduck aquaculture is allowed.

Notifying Property Owners and Tribes of Operations

The Committee considered the question of whether notice should be sent to nearby property owners or tribes prior to geoduck planting or harvesting operations. Many Committee members recommend local jurisdictions follow their normal notification procedures to inform nearby property owners and tribes of the types of activities that will occur at a geoduck aquaculture operation. They recommend providing this notice once when the operation is first established. Some Committee members recommend that local jurisdictions have specific notice procedures for geoduck aquaculture, which may differ by site depending on the surrounding uses. Several Committee members suggest that growers should notify neighbors when they are harvesting or replanting as a courtesy and to avoid potential conflicts but recommend the guidelines allow local governments to decide whether to require additional notification. Many Committee members recommend the notice include information on how to make a complaint.

Site Boundary Marking or Identification

Many Committee members recommend surveying and marking geoduck aquaculture sites when they are established. Because most work at a geoduck aquaculture site occurs during low tides, several Committee members recommend surface markers rather than buoys. Some Committee members recommend marking the waterway side. Some Committee members recommend marking sensitive habitat features on the site to prevent harm. Some Committee members

recommend against having special marking requirements for properties used for geoduck aquaculture.

Public Access

The Committee recommends the guidelines not require public access to private tidelands used for geoduck aquaculture. Two Committee members recommend allowing public access on public shorelines that are leased for geoduck aquaculture.

Access for Workers and Equipment

Many Committee members recommend the guidelines include a statement that growers must have legal access to a site and the means and location of access must not result in impacts to critical areas. Several Committee members recommend restricting vessel operations and worker access to protect eelgrass beds or known forage fish spawning areas. They recommend including best management practices in the technical guidance. To protect the vegetation from disturbance by workers and equipment, one Committee member recommends buffers of at least 25 feet around eelgrass or other attached vegetation for Puget Sound farms. One Committee member recommends regulations insure growers cannot cross private land without an easement recorded with the county.

Locations of Parking and Staging Areas

Many Committee members recommend that local Shoreline Master Programs address parking and staging areas to minimize conflicts and effects on ecological functions. Several Committee members recommend growers describe planned parking and staging areas during the approval process. Several Committee members recommend against addressing this issue other than through best management practices.

Limits on Barge and Vessel Mooring

Many Committee members recommend a general statement that local jurisdictions consider restricting barge and vessel mooring. They recommend including best management practices for barge and vessel mooring in the technical guidance. Some Committee members support and other Committee members oppose recommending a prohibition on mooring over submerged vegetation. One Committee member recommends limiting beaching of vessels on the shoreline. One Committee member recommends anchoring vessels only at the grower's site or state land lease and not for more than 3 days in any consecutive 30-day period. This Committee member also recommends marking all vessels with navigation lights. One Committee member recommends against addressing this issue in the guidelines.

Restrictions on Lights

Many Committee members recommend a general statement about keeping lights near residential areas to a minimum and not directing bright lights towards the shore. They recommend including any best management practices in the technical guidance. Several Committee members recommend that local shoreline programs have standards for lights for all shoreline activities, to minimize impacts to adjacent uses and sensitive species. One Committee member recommends not allowing harvesting at night in residential neighborhoods.

Restrictions on Noise

Many Committee members recommend that local jurisdictions address noise in shoreline areas from all sources, including geoduck aquaculture, using State noise standards as a starting point. Several Committee members recommend that noise controls also protect birds. One Committee member recommends not allowing harvesting activity at night in residential neighborhoods. One Committee member recommends against addressing this issue in the guidelines.

Limits on Timing of On-Site Work

Several Committee members recommend the guidelines contain a general statement that this issue should be addressed based on local conditions and adjacent land uses. One Committee member recommends not allowing harvesting activity at night in residential neighborhoods and recommends limiting daytime harvesting to weekdays. Several Committee members recommend avoiding on-site operations during periods of spawning and incubation in identified forage fish spawning areas. Several Committee members recommend that restrictions on hours of operation should not apply only to geoduck aquaculture. One Committee member recommends against addressing this issue in the guidelines.

Debris and Litter Management

The Committee was specifically directed in SSHB 2220 to examine methods for quantifying and reducing marine litter.

The Committee recommends that growers make every effort to prevent the loss of tubes, nets and other items and should recover litter and debris to the extent feasible. Committee members recommend considering best management practices including selecting equipment and methods to prevent loss of tubes and nets and marking tubes and nets to identify the source of litter. Several Committee members recommend that local governments be a clearinghouse for litter reports. Other Committee members recommend against this approach. One Committee member recommends requiring each grower to post a bond to pay for litter cleanup.

Requirements for Site Maintenance and Worker Training

Many Committee members recommend the guidelines include a general statement on the importance of site maintenance, sanitation and worker training with best management practices included in a technical guidance document. One Committee member recommends specific restrictions on storing materials on-site and requirements for adequate sanitation and garbage facilities. One Committee member recommends growers have copies of other permits or approvals on site when workers are present.

Spill Prevention and Response

Many Committee members recommend preparing a spill prevention and response plan for each geoduck aquaculture operation. One Committee member recommends a reference to Coast Guard and Ecology requirements. One Committee member recommends including best management practices in a technical guidance document. One Committee member recommends against addressing this issue in the guidelines.

Prevention of Air, Water and Sediment Pollution

Several Committee members recommend a general statement on the need to prevent pollution. One Committee member recommends against including this issue in the guidelines. Some

Committee members recommend prohibiting the use of pesticides and herbicides while other members oppose addressing pesticides and herbicides through local shoreline master programs as they are already subject to state and federal regulations. One Committee member recommends including best management practices to prevent pollution in a technical guidance document.

Equipment Maintenance

Many Committee members recommend a general statement in the guidelines on the importance of equipment maintenance to preventing pollution and limiting noise. Several Committee members recommend including best management practices in a technical guidance document. One Committee member recommends requiring annual maintenance records. One Committee member recommends against including this issue in the guidelines.

Recordkeeping and Reporting

Many committee members recommend a general statement in the guidelines that growers should keep records of planting and harvest activities. Some Committee members recommend requiring detailed planting and harvesting records and counts of tubes and nets installed and removed to measure losses. Several Committee members recommend against requiring recordkeeping through local shoreline programs.

Monitoring, Performance Measures and Adaptive Management.

The Committee recommends developing an adaptive management framework for geoduck aquaculture. Many Committee members recommend requiring a baseline survey of the habitat features of a proposed site as part of the approval process. Several Committee members recommend integrating monitoring and adaptive management into the local permitting process. Some Committee members recommend that geoduck proposals or farm plans include a monitoring and adaptive management program that provides a method for incorporating results of ongoing scientific studies into farm management practices. Some Committee members recommend applying adaptive management to the overall activity rather than to individual sites, others favor adaptive management of individual operations. One committee member recommends using adaptive management terminology only if funding is available for the required monitoring, enforcement and action components.

D. Approval Processes

Under the Shoreline Management Act, all uses in the shoreline zone must be consistent with the local Shoreline Master Program. Only some activities are considered developments and only developments that exceed a certain dollar amount need permits. Many developments are exempt from the permit requirement. The Washington Attorney General has issued an opinion² that geoduck aquaculture does not, in all cases, qualify as development.

Many members of the Committee recommend a local approval process that provides notice to the public and adjacent land owners, documents the local jurisdiction's determination that the

² AGO 2007 No. 1.

operation is allowed by the local shoreline master program, allows for enforcement of the provisions of the local master program, and allows for adaptive management.

Several Committee members recommend the approval process ensures compliance with the Shoreline Management Act regarding no net loss of eelgrass and kelp beds and fish and wildlife habitat areas. They recommend a special emphasis on maintaining Puget Sound health.

Some Committee members recommend having provisions for experimental aquaculture methods.

Some Committee members favor an approval process that includes compliance with other required approvals and requires posting a bond.

One Committee member recommended that the approval process include agreement on how complaints should be made and addressed.

Public Notice

The Committee discussed notification of the public and adjacent landowners when a geoduck aquaculture operation is established. This is one of the specific assignments to the Committee.

The Committee recommends the local jurisdiction provide public notice of a proposed new or expanded geoduck aquaculture operation regardless of the type of approval process being followed. When possible, the jurisdiction should follow the normal notice procedures for a shoreline permit.

Committee members differed on which landowners should receive a specific notice, some recommending all properties within 1000 feet, others recommending 300 feet or three shoreline parcels, whichever is greater.

Application Information

As part of any local approval process, the Committee recommends two types of information be provided by the applicant: a baseline survey of the proposed site to allow consideration of the ecological effects and a narrative description of the proposed aquaculture activities.

Some Committee members favor an extensive baseline survey of all fish and wildlife critical areas, including the presence of kelp and eelgrass and use of the site by salmon, forage fish and marine birds. They recommend the application include proposed actions to minimize impacts to habitats and wild species and mitigation to ensure achieving no net loss.

Many Committee members recommend the description of the proposed aquaculture activities include information on the source of seed, predator exclusion devices, timing and areas of planting and harvest and access to the site. Committee members differed in the level of detail desired and the need to allow flexibility.

Approval Options

The Committee discussed the following list of approval options:

1. Shoreline Substantial Development Permit
2. Conditional Use Permit
3. Exemption statement
4. Enforcement on a complaint basis
5. Document other approvals
6. Posting a Bond

1. Shoreline Substantial Development Permit

Many of the Committee members recommend requiring a Substantial Development Permit only when it is triggered by project-specific characteristics, for example, when operations substantially interfere with normal public use of the surface of state waters.

One Committee member recommends requiring a Substantial Development Permit for all geoduck operations and involving Ecology in assuring no net loss of ecological functions.

Several Committee members recommend that all new or expanded geoduck aquaculture operations in Puget Sound obtain either a Substantial Development Permit or a Conditional Use Permit, to support the State goal to recover Puget Sound by 2020.

2. Conditional Use Permit

As mentioned before, several Committee members recommend that all new or expanded geoduck aquaculture operations in Puget Sound obtain either a Substantial Development Permit or a Conditional Use Permit, to support the State goal to recover Puget Sound by 2020.

One Committee member recommends involving Ecology in assuring no net loss of ecological functions. A Conditional Use Permit requires review by Ecology.

Many Committee members recommend against requiring a Conditional Use Permit.

3. Exemption Statement

A local jurisdiction can issue a written determination that a proposed activity is consistent with the local Shoreline Master Program but exempt from obtaining a Substantial Development Permit. Many Committee members recommend local governments follow this procedure when a Substantial Development Permit is not otherwise required. Several Committee members recommend always requiring a permit.

4. Enforcement on a Complaint Basis

Shoreline uses exempt from a Substantial Development Permit are sometimes undertaken without any prior approval by the local jurisdiction. The jurisdiction only becomes involved and seeks compliance with provisions of the local Shoreline Master Program when the jurisdiction receives a complaint.

The Committee recommends that new or expanded geoduck aquaculture operations receive prior approval through a shoreline substantial development permit, a conditional use permit or a written exemption determination. An approach allowing new or expanded geoduck aquaculture operations without any prior approval is inadequate to meet the general principles of achieving no net loss of ecological function and minimizing land use conflicts.

5. Document Other Approvals

Many Committee members recommend local Shoreline Master Programs require geoduck aquaculture operations to show they have obtained other necessary approvals. Examples include DOH certification that the growing area meets shellfish sanitation requirements or a permit from the U.S. Army Corps of Engineers. Some Committee members recommend that local jurisdictions only require documentation of other approvals for geoduck aquaculture if they require it for other shoreline uses. Some Committee members recommend against this approach.

6. Posting a Bond

Many Committee members recommend against any special requirement that geoduck aquaculture operations post a bond.

One Committee member recommends requiring a bond that can be used for debris collection and to repair environmental damage assessed from the baseline study information.

Several Committee members recommend that local jurisdictions follow their general practice for deciding when a bond should be required.

E. Other Recommendations

Many Committee members recommend that Ecology work with the other state agencies to provide information to local jurisdictions on the locations and sizes of existing geoduck aquaculture operations.

One Committee member recommends the Legislature give the Washington Department of Fish and Wildlife the authority to use its expertise in developing regulations for the aquaculture industry.

Several Committee members recommend Ecology provide a definition and guidance on how to achieve the Shoreline Management Act policy of no net loss of ecological functions.

Many Committee members recommend against requiring local jurisdictions to collect and compile information on geoduck aquaculture activities and debris, with one member recommending the State compile information

Several Committee members recommend including predator exclusion devices and growing pools to the section of the guidelines addressing Shoreline Modifications.

V. Public Comment During the Shellfish Committee Process

There has been considerable public interest and involvement in the work of the Shellfish Committee and the issue of geoduck aquaculture in general. A dedicated group of observers provided an audience for each Shellfish Committee meeting. The Shellfish Committee decided that they would not receive public comments during their meetings, because their meetings are work sessions, not public meetings or hearings. Instead, Ecology agreed to accept public comments at the end of each Shellfish Committee meeting. Many Shellfish Committee members stayed to listen to the public comments. Ecology also received numerous written comments during the Shellfish Committee process. The comments reflect the wide range of issues discussed by the Shellfish Committee over the last 18 months. Ecology has collected and cataloged the comments it has received.

Ecology staff will consider public comments received during the Shellfish Committee process during the next phase of SSHB 2220 implementation—development of guidelines for the appropriate siting and operation of geoduck aquaculture operations to be included in local Shoreline Master Program updates.

Public Comments Related to the Siting of Geoduck Farms

Most of the comments relate to questions about the potential environmental impacts of intertidal geoduck aquaculture. Site preparation, using plastic tubes and nets for planting juvenile geoduck, and the disturbance of sediment from the use of pressurized water hoses are among the issues raised in public comments. Concerns have been raised about potential ecological impacts to marine vegetation, salmon and other fish, marine birds, and the animals that live in or on the sediments, like sand dollars, crustaceans, and starfish.

Public Comments Related to Effects on Shoreline Property Owners

Potential effects on shoreline property owners have been brought up in comments as well. The disturbance from noise and lights associated with planting and harvesting, especially at night, are frequently mentioned. There are also concerns about the visual impacts of tubes, nets and other equipment and their effects on shoreline property owners and others who enjoy the scenic beauty of Puget Sound. Concerns have been expressed about the boats and barges used to bring people and equipment to farm sites. Sometimes these are kept at the sites for a period of days as temporary and mobile storage facilities. Other comments on aesthetics include the concerns over litter and debris; tubes and nets drifting free from farm sites; and rebar, ropes, and other remnants from geoduck operations. People expressed concerns that the costs of cleaning up these materials would be shifted to the public. Comments were made on the unpleasant visual nature of the sediment plume resulting from harvesting activities. Another concern of shoreline property owners and other shoreline visitors is the potential loss or impairment of recreational opportunities.

Public Comments Related to Pollution

In addition to the effects of litter and debris, comments were made regarding the potential for pollution from other aspects of geoduck aquaculture. The use of plastic tubing and the potential for it to break down in a marine environment was a concern raised in several comments. Because harvesting can result in the disruption of the top three feet of sediment, concerns have been raised about the potential release of toxic substances that may be in the sediment from historic industrial activities.

Public Comments Related to Best Management Practices

Many comments expressed concerns that current lists of best management practices (BMPs) are not adequate to address the impacts associated with geoduck aquaculture and are not supported by available science. Adaptive management was criticized as being ill-defined and often misused as a tool for responding to complex environmental issues. Concerns were also raised about the inadequacy of the Corps Nationwide Permit #48 and frustrations over its implementation.

Public Comments Expressing Support for Shellfish Aquaculture

Comments were received supporting the aquaculture industry and calling for the Shellfish Committee Ecology to strike a balance between appropriate regulations and recognition of a long-standing and vital industry in our state. Many people commented the shellfish industry has an interest in maintaining and supporting high quality environmental conditions in Puget Sound, and should be viewed as a positive influence rather than a threat. Many comments were reminders that aquaculture is identified as a water dependent, preferred use in the Shoreline Management Act, the existing Shoreline Guidelines, and most local Shoreline Master Programs.

Public Comments Related to Department of Natural Resources Leasing

Ecology received many comments regarding the Department of Natural Resources leasing program for intertidal geoduck farming on state-owned aquatic land. The concerns raised covered most all aspects of the proposed operations including leasing issues, siting near public recreation areas, notification of adjacent landowners, and oversight of on-going operations.

Public Comments Expressing Support for the Shellfish Committee

Finally, Ecology did receive a number of positive comments supporting the work of the Shellfish Committee and expressing appreciation for the dedicated work of the Committee on a number of difficult issues.

VI. Future Ecology and Shellfish Committee Activities under SSHB 2220

The Shellfish Committee has completed its recommendations regarding guidelines for geoduck aquaculture siting and operation. The Department of Ecology is now starting the development and adoption, by rule, of Shoreline Master Program Guidelines for geoduck aquaculture. The Shoreline Master Program Guidelines provide the framework for cities and counties to update their local Shoreline Master Programs. The existing Guidelines, Chapter 173-26 of the Washington Administrative Code, include a section on aquaculture and provide a general framework recognizing the state interest in properly managed aquaculture. Ecology will update the Guidelines to provide a refined framework relating specifically to siting and operation of intertidal geoduck aquaculture.

Key steps in the upcoming rulemaking process:

- **EIS:** Ecology will prepare a “non-project” environmental impact statement. This document will supplement the EIS previously prepared for the Shoreline Master Program Guidelines rule. For proposed policy actions such as this rulemaking, the purpose of the State Environmental Policy Act process is to identify policy issues with potential significant environmental impacts, and then to identify options for addressing the impacts.
- **Guidelines:** Draft Guidelines will be proposed: In the SEPA context, these are the proposed “preferred option.”
- **Public Comments:** Comments on the Draft Supplemental EIS and the “preferred alternative” draft Guidelines will be solicited from the public and from the Shellfish Committee members. Ecology anticipates holding four hearings within the coastal region of the state to receive public comment.
- **Shellfish Committee Advisory Role:** Ecology will engage the Shellfish Committee in reviewing public comments and providing input on the agency’s proposed response to comments. SSHB 2220 stipulates that the Shellfish Committee will serve as an advisory committee to Ecology for the rulemaking process. Response to public comments is a key step in this process.
- **Ecology** intends to complete the documents, including initial Shellfish Committee and public review, by mid-2009. Final steps in the rulemaking process are anticipated in the second half of the year.

VII. Background Materials

Agendas, presentations, meeting notes and background documents related to the work of the Shellfish Aquaculture Regulatory Committee are available on the Committee’s web pages at: <http://www.ecy.wa.gov/programs/sea/shellfishcommittee/index.html>.

VIII. Appendix A: List of Shellfish Aquaculture Regulatory Committee Members

Member represents:	Past Committee Members	Committee Members	Alternates/Staff Contacts
County located on the Puget Sound	Pat Prendergast Pierce County	Dave Risvold Pierce County Planning and Land Services	Mike Erkkinen Pierce County Planning and Land Services
County located on the Pacific Ocean		Bryan Harrison Pacific County Administrative Officer	None
Owner or operator of an aquatic farm in Puget Sound		Diane Cooper Taylor Shellfish Farms, Inc.	Peter Downey Discovery Bay Shellfish
Owner or operator of an aquatic farm in state waters other than the Puget Sound		Nick Jambor Ekone Oyster Co.	David Hollingsworth Markham Oyster Inc.
Organization representing the environmental community		Krystal Kyer Tahoma Audubon	Miranda Wecker Willapa Hills Audubon
Organization representing the environmental community		Bruce Wishart People for Puget Sound	Cyrilla Cook People for Puget Sound
Shoreline property owner who does not have a commercial geoduck operation on his or her property		Patrick Townsend Olympia	Laura Hendricks Gig Harbor
Shoreline property owner with a commercial geoduck operation on his or her property		Ward Willits Olympia	None
Department of Ecology	Dick Wallace Department of Ecology SW Regional Office	Sally Toteff Department of Ecology Southwest Regional Office	Jeannie Summerhays Department of Ecology, Northwest Regional Office

Member represents:	Past Committee Members	Committee Members	Alternates/Staff Contacts
Department of Fish and Wildlife	Morris Barker Lisa Veneroso	Rich Childers Department of Fish & Wildlife	Bob Sizemore Department of Fish & Wildlife
Department of Agriculture	Linda Crerar	Eric Hurlburt Department of Agriculture	Lee Faulconer Department of Agriculture
Department of Natural Resources	Sarah Dzinbal	Blain Reeves Department of Natural Resources	None
Tribal government within the Puget Sound drainage		Andy Whitener Squaxin Island Tribe	Jeff Dickison Squaxin Island Tribe
Tribal government		Russ Svec Fisheries Manager Makah Tribe	Yongwen Gao Makah Tribe

Other Interested Agencies

Representing:	Representative	Alternate
Department of Health	Jessie DeLoach and Cathy Barker Department of Health	Maryanne Guichard Division of Environmental Health Department of Health
Puget Sound Partnership	Ron Schultz Puget Sound Partnership	Stuart Glasoe Puget Sound Partnership
Corps of Engineers	Casey Ehorn Corps of Engineers - Seattle District	None