FORUM QUESTIONS & ANSWERS

The Key Peninsula News asked the panelists to answer the remaining questions from the forum that could not be answered at the event due to time constraints.

Terry Lee, Pierce County Council

1. Is there a way to protect the environment and also property rights?
I believe you can if you allow the activity to occur but mitigate the negative impacts.

2. Where on the Key Peninsula should geoduck aquaculture occur and under what conditions?
It really requires a case by case analysis, that is why we require a Shoreline Substantial Development Permit.

3. How can we have the Shoreline Management Act and still "ok" churning up the tidelands? This seems like money vs. environment.
The SMA was created in 1972 and I don't think our State Legislators contimplated this harvesting technique when promoting acquaculture.

4. What percent of present geoduck farming contracts are on state/county lands, and what percent are private?
I really don't know but I believe those in Pierce County are on private lands.

5. Will any restrictions on contracts (leases) apply to government as well as private tidelands?
Yes

6. Who will enforce the permit restrictions? Will that entity be impartial?
If they are Pierce County Regulations then our Code Enforcement Department will do the honors.

7. What about the rights of property owners to not have a nuisance move in next door? The industry has introduced language in a bill before the senate to eliminate the right to bring a nuisance action against a shellfish farmer. Do you support restricting access to our courts for redress?
No

8. There are clearly lots of good rules in place; how is enforcement handled? By whom, and how often is the site inspected?
See question 6

9. Harvesting at Foss is noisy. Will you (the industry) limit harvest to M-F, 8:00 a.m.-4:30 p.m. so the adjacent landowners can have peaceful enjoyment of our property at night and on the weekends? If not, why do you (the industry) feel it is your right to disturb your neighbors who aren't profiting from your industry?
I believe all efforts will be made to be compatible with adjoining uses, therein lies the purpose/reason for a SSD Permit.

10. Will intertidal tracts be grandfathered in when you see what a disaster this is?
Depends on the disaster, health, safety and welfare are issues that can't be vested.

11. Why is DNR proceeding without an Environmental Impact Statement?
I'll leave that to DNR to respond to.

12. There is a 6-year old farm on the Key Peninsula that could be studied now - and could have been studied over the past several years. Why has this not occurred?
I believe that is being contemplated by the state now.

13. What happens if an area with a pending geoduck permit is found to have eel grass within its boundaries?
There are requirements to stay away from eel grass beds because they are Federally protected.

Laura Hendricks, Henderson Bay Shoreline Association

1. Where on the Key Peninsula should geoduck aquaculture occur and under what conditions?
We feel that no industrial geoduck farming should be done until science studies have detailed all of the negative impacts on Puget Sound both on an individual farm basis as well as the cumulative effect. All industrial aquaculture should be regulated within a zoning framework.

2. Are you against aquaculture farming entirely?
Industrial aquaculture farming should be done on a sustainable basis and expansion should not be forced on citizens in residential neighborhoods. Farming methods do need to be examined to insure that the areas they are already in are not being ruined for their own long term viability or irreversibly damaging Puget Sound. Stringent monitoring and regulations are used in most all other states and countries that have industrial aquaculture to help minimize the impacts.

3. Have the shellfish industry and DNR been receptive to your concerns?
The shellfish industry has not been receptive that our shoreline groups have pointed out the need for monitoring and regulation as they have worked very hard for years to make

sure they had no restraints. Despite the fact that DNR says they are cautious, in fact, they come down on the side of industry. Many citizens have voiced their opposition to DNR leasing state lands for aquaculture and their pleas fall on deaf ears. DNR is in the revenue generating business from state natural resources as their primary mandate and an independent state agency should be responsible for all environmental impact decisions regarding state natural resources.

Greg Combs, DOH

1. (Have you considered/explored) efforts to develop marine pump-out stations to eliminate pollution sources? Federal funds are available.
DOH does not have jurisdiction over marinas. The various counties or port authorities should answer that question. Kitsap County has a regulation regarding pumpout stations. They require them.

2. How many years have you sampled and analyzed water quality in shellfish-growing sites in Puget Sound?
Legislature created the law governing shellfish sanitation work to be done by the state in 1955.

3. Have you witnessed degradation of water quality near aquaculture sites in Puget Sound?
No

4. What are the major sources of fecal coliform in Puget Sound? Do shellfish produce fecal coliform?
There are many sources including failing on-site sewage systems, failures at Wastewater Treatment (WWTP) facilities, poor animal keeping practices, storm runoff from urbanized areas; essentially warm blooded animals all have fecal coliforms in their waste and we need to keep that waste stream from entering our fresh and marine waters.
No, shellfish do not produce fecal coliform.

5. Who will test the quality of the water in front of MY home? Do I have to hire someone to do this?
It depends on where you live and whether there are shellfish in front of the home. We may have a station close to or right at the property. To test water, individuals should call their county environmental health department. It is likely that they will have a system a property owner could use.

Bill Dewey, Taylor Shellfish Co.

1. How can there by no waste from the shellfish in the demo filtering slide? Has that been edited out?
There is waste (digested algae entrained in mucous) that can be seen dropping from the clams in the time lapse film clip of manila clams feeding. It has not been edited out. They are tiny brown specs which settle to the bottom of the aquarium.

2. What is the process that excludes or removes existing shellfish and predators prior to planting?

Grower's preferred means of addressing predation is to exclude predators from accessing the shellfish crop. With geoduck the most effective means of doing this to date is with the PVC nursery tubes that are either covered by individual nets or blanket netting over the whole field of tubes. Generally nothing is done to remove predators prior to planting geoducks. Tubes are installed instead to exclude them from the seed.

In deep sandy beaches (which are preferred for geoduck culture) predators (diving ducks, moonsnails and various crabs) are particularly effective. They can forage very efficiently. As such there typically are not many other bivalve shellfish present. Occasionally you'll find horse clams or butter clams that have gone undetected and achieved a depth in the substrate where they are inaccessible to all but human predation. These scattered clams are not typically removed prior to seeding geoducks. Often they are harvested incidentally during the geoduck crop harvest. Because predators have been excluded it is common to get cockle and horse clam larvae settling in the geoduck nursery tubes. They survive and thrive in the geoduck nursery tubes. If the tubes were not there they would rapidly be preyed upon. I grow Manila clams in sand in Samish Bay and have experienced first hand the efficacy of predators in sand. During certain times of year I have witnessed going from 70 clams per square foot to zero in 24 hours when a predator net was removed. While human markets for horse and butter clams are limited, they are often harvested with the geoduck and sold to commercial fishermen for crab bait.

3. How profitable is geoduck farming to the property owner? To DNR?

I can't speak to arrangements other companies make, but current typical agreements Taylor Shellfish has with private tideland owners compensates them at a base rate of $1,000/acre per year and 10% of the farm gate value of the geoducks at harvest. Since price of geoducks fluctuates, as does survival and performance of each crop, this arrangement has the landowner sharing in some of the risk yet reaping the benefits should there be exceptional survival and/or market price. At current market pricing and average yields a tideland owner might expect the 10% share to be in the neighborhood of $60,000/acre of geoducks planted. Harvest occurs approximately every 6 years.

I'm not an expert on the DNR lease offers that were made to secure the first tidelands to be offered by the state for geoduck culture. It is my understanding that they are comparable to rates being paid to private tideland owners.

4. What about the adverse effect of geoduck waste on water quality?

I am not aware of any science documenting an adverse effect of geoduck waste on water quality. To the contrary, there are numerous studies that document multiple beneficial effects of filter feeding molluscs such as geoduck.

Unlike fish farms shellfish (including geoducks) are not fed. Shellfish are filter feeders. They remove small particles from the water. From these, they gather what they want by digestion (including nutrients) using the energy to live and grow and discard the rest. Removal of the shellfish (through harvest) removes the nutrients in the shellfish and exports them out of Puget Sound. The nutrients that the shellfish discharge are recycled. This filtering process clears the water (as can be seen in the time lapse video of manila

clams feeding.) Clearer water allows increased sunlight penetration, which improves conditions for eelgrass. Some of the excreted nutrients are used by phytoplankton. Some would be used by eelgrass or macroalgae on the bottom. Nutrients that are used by phytoplankton (microscopic free floating algae) are tied up in the water column and not available to eelgrass and other bottom dwelling macroalgae. One of the benefits shellfish provide is taking these nutrients from the water column when they filter the microscopic algae and making those nutrients available to eelgrass when it is excreted. This phenomenon is known as bentho-pelagic coupling.

5. Don't the recreational mud runs negatively impact the growing area?
The area on which the mud run is conducted is a very muddy beach adjacent to our Samish Bay processing and retail facility. This is not an active shellfish growing area because it is at too high a tidal elevation and it is too muddy. There is no eelgrass or other sensitive critical habitat in the area of the race that would be adversely impacted by runners.

6. Does the presence of sand dollar beds preclude commercial aquaculture?
While sand dollars are not predators of shellfish they are considered pests particularly if you are growing geoducks or other clams (burrowing species). Geoduck and other clam seed need unobstructed sand to burrow into. Generally growers will seek beaches without sand dollars for clam farming. Occasionally sand dollars will be removed.

7. What happens if an area with a pending geoduck permit is found to have eel grass within its boundaries?
Taylor Shellfish (and the other growers I am aware of) do not intentionally plant geoducks in eelgrass. We will plant around beds of eelgrass. It is not uncommon for eelgrass to move into areas where crops are planted. This may in part be related to the fact that the nursery tubes stabilize the bottom sediments enough for eelgrass seeds to take hold where they can't otherwise. Another explanation is that they clearer water and fertilizer provided by the geoducks helps the eelgrass thrive. With funding from USDA's Western Regional Aquaculture Center and growers the University of Washington has been conducting research for a number of years both on geoducks and oysters to better understand the interactions between the shellfish crops and eelgrass.

8. Harvesting at Foss is noisy. Will you limit harvest to M-F, 8:00 a.m.-4:30 p.m. so the adjacent landowners can have peaceful enjoyment of our property at night and on the weekends? If not, why do you feel it is your right to disturb your neighbors who aren't profiting from your industry?
We don't want to disturb our neighbors and as such have worked hard at ways to reduce any noise associated with harvesting and farming activities. The pumps used to power the high volume, low pressure water nozzles are mounted on small boats or barges anchored off-shore. Water-cooled diesel pumps which are far quieter than air cooled gasoline engines are used. To further reduce pump noise the pumps are enclosed in housing units. We have tested with meters the decibels of the sound emitted from the pumps. 100 feet away (which is representative of the closest the barge might be to

residential structures at low tide) the sound emitted is comparable to the voice level of people talking.

With the noise level reduced to this degree we don't believe limiting days and hours of operation is necessary. Limiting harvest to daylight hours would preclude harvesting at low tide six months out of the year when the low tides fall in the middle of the night. This would be a significant impact to operations. Shellfish growers rely on being able to harvest on night and weekend tides to be able to consistently maintain their markets.

9. If there is so much subtidal acreage available, why do any intertidal farming?
Currently DNR does not lease subtidal bedlands for geoduck aquaculture. There is a very small amount of subtidal Bush Act tideland in the Puget Sound on which subtidal culture is being experimented with. As I explained at the forum, Bush Act land is land sold into private ownership by the State specifically for the purpose of growing shellfish. Bottom line is that currently there is little to no opportunity to culture on subtidal acreage in Washington.

The other concern regarding limiting culture to subtidal bedlands is that the technology for doing so is not yet perfected, and, because it involves divers, it is inherently more risky. The Canadians have been working on subtidal geoduck culture for a number of years and a Washington grower has as well. While significant advances have been made, it is not to the point of replacing intertidal culture.

10. There is a 6-year old farm on the Key Peninsula that could be studied now – and could have been studied over the past several years. Why has this not occurred?
Some research regarding the effects of geoduck culture has been on-going for a number of years. While not on the Key Peninsula farm, it has been done on other south Sound farms. It has been conducted by Dr. Jennifer Reusink at the University of Washington and has been focused on eelgrass interactions. This research has been conducted with funding from the USDA's Western Regional Aquaculture Center, Taylor Shellfish Company and Seattle Shellfish.

11. How will the shellfish industry repair all the damage done to Totten Inlet and Zangle Cove? How can you assure people the same thing won't happen here?
We are not aware of any science documenting that geoduck culture and harvest cause any ecological harm in Totten Inlet, Zangle Cove or any other Washington estuary. There is on the other hand a large body of science documenting the ecological benefits shellfish provide. If subsequent research does indicate culture or harvest practices are having adverse impacts growers can adapt to reduce those impacts. If research finds impacts that are unacceptable and unable to be mitigated, one of the unique features of shellfish farming is that you can harvest your crops and stop farming and the area quickly returns to its pre-culture condition. As pointed out by an individual in the audience, this is not the case with much of the shoreline residential and commercial development that occurs on shorelines. Impacts from shoreline armoring, paved roads and driveways, impervious roof tops, lawns, septic systems and the like are not temporary nor easily removed when impacts from them are found to be unacceptable.

Sarah Dzinbal, DNR

1. How can we have the Shoreline Management Act and still "ok" churning up the tidelands? This seems like money vs. environment.
No leases for geoduck aquaculture will be offered by DNR until the lease applicant has obtained all the necessary permits, including permits required under the Shoreline Management Act (SMA). Permitting under SMA is the responsibility of local government and the Dept. of Ecology; DNR does not have authority under SMA. The SMA does provide a framework for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses (Chapter 90.58.020 RCW).

2. I have otters, seals, herons, orcas, cutthroat trout (living in the marine environment at my home). Are you trying to tell me this aquaculture won't impact the environment? I'm not allowed to start a gravel pit on the shore!
Our experience with leasing state owned aquatic lands for aquaculture has convinced us that aquaculture, when sited correctly and operated responsibly according to best management practices, does not have a significant adverse impact to the marine wildlife cited in the question. With specific regard to geoduck aquaculture—a new culture practice compared to other types of aquaculture that have been underway since before statehood—DNR will have an environmental monitoring program in place to assess any impacts.

3. Does the presence of sand dollar beds preclude commercial aquaculture?
Tidelands with a high density of sand dollars are not a preferred site for geoduck aquaculture since they prey on the young geoducks. When present, sand dollars may be moved to other parts of the beach to minimize predation. DNR will not allow the sand dollars to be killed.

4. What happens if an area with a pending geoduck permit is found to have eel grass within its boundaries?
DNR makes every effort to avoid siting potential geoduck aquaculture leases in close proximity to eelgrass beds. Our best management practices (BMP 3.1-3.5) require native eelgrass species *Zostera marina* be protected by a minimum of a ten foot buffer. Harvesting methods are restricted if eelgrass is within fifty feet. Eelgrass distribution will be accurately mapped before lease signature and will be monitored to ensure that there is no net loss as a result of farming activities. DNR's BMP's will be adaptively managed through the DNR's Environmental Monitoring program.

The ten foot buffer will be used for dry conditions—planting, general operations and dry harvest. The fifty foot buffer will be used for wet harvest, when the site is covered by water. These buffers are are a first attempt at setting protection distances, and were based on best available science. They will be modified up or down as data become available. DNR is already investigating options for a scientific study to help better define these distances. The buffer distances took into account the fact that eelgrass in the intertidal zone is likely to be in equilibrium with a higher energy regime than plants in the subtidal area. Natural waves and currents incident on these beaches exert forces on any

intertidal/shallow subtidal eelgrass, and both waves and currents carry entrained sediment particles and other materials.

DNR's Best Management Practices require no net loss of eelgrass from baseline conditions. For this reason, DNR will require lease applicants to conduct a survey for all rooted and attached aquatic vegetation prior to offering the lease. This will map eelgrass and other rooted aquatic vegetation, to define the baseline condition. Under the Request for Offers released in June 2006 (RFO GA 06-001), applicants were required to sign a Certification and Assurances sheet that confirmed they would comply with Best Management Practices, and conduct a baseline and biological survey.

5. What percent of present geoduck farming contracts are on state/county lands, and what percent are private?

At the time of the forum, zero percent of commercial geoduck aquaculture is taking place on state-owned aquatic lands. All the current farming of geoduck is occurring on privately owned tidelands. DNR does not know whether any geoduck aquaculture is taking place on county owned lands.

6. Will any restrictions on contracts (leases) apply to government as well as private tidelands?

The best management practices and lease restrictions will only be applied and enforced against growers who lease public tidelands from DNR. However, local governments may incorporate restrictions developed by DNR into their Shoreline Management Plan permitting process, something that Pierce County has already done. Additionally, responsible shellfish growers adhere to environmental codes of practice which minimize and avoid impacts to the aquatic environment.

7. Does DNR consider its aquaculture program a high priority?

Public lands have been used for aquaculture since before statehood. The Legislature, throughout the history of the state, has considered aquaculture to be a preferred water-dependent use. State Law in Revised Code of Washington (RCW) 79.105.030 states that as the manager of state owned aquatic lands, the Department of Natural Resources (DNR) should strive to provide a balance of public benefits for all citizens of the state. These public benefits are varied and include:

- encouraging direct public use and access
- fostering water-dependent uses
- ensuring environmental protection
- utilizing renewable resources
- generating revenue in a manner consistent with these goals

DNR is more specifically directed to make lands available for cultivation of shellfish in Chapter 79.135 RCW.

8. There are clearly lots of good rules in place; how is enforcement handled? By whom, and how often is the site inspected?

State owned aquatic lands leased for geoduck aquaculture are subject to additional review than private tidelands since DNR, as proprietary manager, has the ability to enforce lease conditions and requirements in addition to all the other federal, state and local permits.

DNR will dedicate a Land Manager who will oversee compliance to all lease terms and conditions. The frequency of site visits will vary depending on the activity and stage of maturity of the growth cycle. An annual environmental review is required on each lease site. In addition, the lessee is required to keep an activity log and regularly enforce the site and patrol offsite for any aquaculture debris. DNR intends to inspect each lease site annually to assure the required best management practices are in place and are being followed by the lessee. DNR will require all lease applicants to acquire all the necessary permits and licenses before a lease is offered. In addition, DNR will enforce Lease conditions and a Plan of Operations throughout the life of the lease. A DNR Land Manager will visit the site regularly to check on progress. The lessee will be required to submit annual reports detailing operations. Adherence to DNR's Best Management Practices (BMPs) will also be a lease requirement. The US Corps of Engineers has regulatory authority over geoduck aquaculture under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344). The Dept. of Ecology and local governments may also condition and permit aquaculture activities.

9. Does DNR plan to lease tidelands which front privately-owned mean low tidelands?

DNR currently has no plans to lease subtidal lands. State owned tidelands adjacent to privately owned uplands will be offered for geoduck aquaculture leasing. DNR currently has no plans to lease lands that fall between Mean Low Water and Mean Lower Low Water, when the lands above Mean Low Water are in private ownership,

10. How many acres of tidelands along Case Inlet does DNR plan to lease out in the next 10 years?

DNR has not determined the number of tideland acres suitable for geoduck aquaculture in Case Inlet. However, the rural character of Case Inlet and the nature of some of its tidelands make it an ideal place to grow geoduck. Our current plan is to offer up to 250 acres throughout Puget Sound.

11. When DNR researched the possibility of getting involved in geoduck aquaculture, did you work with shoreline/homeowner groups?

We met with several groups that either represented the general public or were comprised of citizens; County Commissioners, Marine Resource Advisory Committees, Puget Sound Action Team, Shellfish Protection District. It is standard leasing practice to meet with upland owners prior to leasing state lands for aquaculture. We have only just begun the leasing process for geoduck aquaculture, and adjacent upland owners have been contacted by our land manager. Additionally, DNR has worked with its sister state agencies, the state legislature, and the Tribes regarding this use. These outreach communications date back to 2003 and have been consistent throughout the intervening period. DNR is also committed to answering citizens' questions on its geoduck aquaculture program, and will continue to work with citizens who ask for information. The aquaculture website has an opinion questionnaire if you would like to provide comment. Please visit http://www.dnr.wa.gov/htdocs/aqr/aquaculture/index.html DNR

has offered to hold meetings with citizens who remain concerned about geoduck aquaculture on state owned lands.

12. How is it not a conflict of interest for DNR to be conducting its own scientific research since it has so much revenue at stake?

It is misleading to presume DNR is solely motivated to lease tidelands for its own departmental benefit. State geoduck aquaculture leases will earn money for two funds that enhance and manage aquatic lands. These two accounts are the Resource Management Cost Account (RMCAAquatics) and the Aquatic Lands Enhancement Account (ALEA). The RMCA-Aquatics account is used to fund DNR's management of state-owned aquatic lands throughout the state. Money in the ALEA account is used by a number of state agencies to fund management and protection of state aquatic resources. A typical example of the breakdown between agencies is:

DNR 58% Geoduck wild stock fishery management, enforcement and research; aquatic land management; *Spartina* and invasive species control

WDFW 13% Geoduck wild stock fishery management, enforcement and research; salmon recovery; shellfish enhancement projects

IAC 24% ALEA Public Access and habitat restoration grants (state, tribal and local governments); habitat acquisition and public access projects*

Dept Agriculture *Spartina* and invasive species control 4%

State Parks 1% Boating safety

13. Why not eliminate a conflict of interest in having Taylor Shellfish Co. collect samples by having an independent scientist do it?

DNR requested money from the legislature in 2005 to pay for research. When this request was not funded, DNR decided to find a way to move forward cautiously while dedicating revenue to finding answers. The solution was a partnership with a reputable company with the capacity to study all three regions for consistency of data. The company also has to be willing to pay large sums of money for the studies prior to any revenue received from the aquaculture. It is expected that much of monitoring will be subcontracted—for example, sediment testing will need to be conducted by a laboratory. DNR scientists will attend all sampling events and raw data will be analyzed by DNR.

14. Who will test the quality of the water in front of MY home? Do I have to hire someone to do this?

All sites where shellfish are harvested for human consumption are tested and certified by the Department of Health. First, a shoreline survey is conducted to look for potential sources of contamination. Then several years of water quality samples are taken prior to certification and any harvest of shellfish for human consumption. Periodic samples are taken annually to maintain that certification.

15. Is DNR concerned with loss of assessed value of adjacent properties, i.e., loss of tax revenue?

DNR is not aware of any reduction in assessed value or market value from properties adjacent to geoduck aquaculture. We understand some private owners of tidelands consider leasing their tidelands for aquaculture as an opportunity to increase income to

defray property taxes. Also, DNR collects a leasehold tax on aquatic land leases, including those for aquaculture, which is remitted to local governments.

16. Will intertidal tracts be grandfathered in when you see what a disaster this is?
Data from monitoring the environmental conditions of the leasehold and impacts of geoduck aquaculture will inform the DNR's management of tideland leases. Using an "adaptive management" process, DNR will be able to change lease conditions based on conclusions from scientific studies. Should monitoring indicate there are unforeseen negative impacts to the marine environment from the leases, then DNR has the ability to modify Best Management Practices for the lease operations.

17. Define "intertidal shoreline," and explain where "second class tidelands" end.
Intertidal lands are where the tide ebbs and flows. Second class tidelands are from Ordinary High Tide to Extreme Low Low Tide and are more than two miles from an incorporated city. Please note that tideland ownership rules and definitions have changed over time so the above description represents the status now but was different for land patented prior to statehood and before current statute.

18. Why is DNR proceeding without an Environmental Impact Statement?
One is not required. That determination is left to local control (per the Shoreline Management Act) and oversight by the counties. When a county requires a permit for geoduck aquaculture, the permit applicant will complete a SEPA (State Environmental Policy Act) checklist that is reviewed by the county. The county issues a determination of significance and then posts the determination for public comment. For those counties that do not require a permit , DNR will provide the SEPA review and receive public comment directly. DNR has developed precautionary Best Management Practices for how this use will be conducted. We will amend those BMP's and how this use occurs on state land as scientific, peer reviewed, data and information become available.

19. There is a 6-year old (geoduck) farm on the Key Peninsula that could be studied now – and could have been studied over the past several years. Why has this not occurred?
Information is becoming available from many sites throughout Puget Sound that are adding to our knowledge of this type of farming. The knowledge is transferred to the aquaculture and scientific communities through published white papers to informal sharing of techniques and practices. The knowledge gained has helped to fashion sound Best Management Practices and continues to develop them. The farm referred to on the Key Peninsula is on private tidelands, over which DNR has no jurisdiction. For DNR to conduct scientific research, leases need to be let on state owned tidelands.

20. How can DNR not see a conflict of interest in allowing the industry to test itself?
This question might be in reference to water quality testing, which falls under the jurisdiction of the Department of Health. If the question refers to the geoduck aquaculture environmental monitoring program, then this program has been designed as a cooperative partnership with a reputable industry partner. DNR will maintain oversight on the entire study.

General (all) Panelists:

1. The industry taking its own water samples is folly. Explain checks and balance.

TL: We rely on testing from State DOH as well as TPCHD.

LH: I think that is the point--- there are no checks on balances on an issue as important as public health.

GC: We contract with the samplers and the rules are very stringent. We look at every data sheet and will notice if there is something wrong. If the rules are not followed or we find an obvious lack of honesty, we pull the contract and the grower no longer samples. The consequence is their growing area will not be classified as quickly as they want.

BD: From the shellfish grower's perspective there is a huge incentive to ensure samples are taken, handled, recorded and shipped accurately and appropriately to the Department of Health laboratory. If a grower "cheats" and people get sick from their shellfish, it could well spell the demise of the company. The market is not forgiving after companies have been involved in product recalls. Growers take public health regulations very seriously. Without safe products that consumers are confident in growers could not remain in business.

SD: All sites where shellfish are harvested for human consumption are tested and certified by the Department of Health, not the shellfish industry. First, a shoreline survey is conducted to look for potential sources of contamination. Then several years of water quality samples are taken prior to certification and any harvest of shellfish for human consumption. Periodic samples are taken annually to maintain that certification.

2. Do you think it is a conflict of interest for the shellfish industry to be responsible for evaluating and remediating water conditions?

TL: I think we should use every resource available to try to understand the science around Geoduck farming.

LH: Yes. The SDOH must treat the shellfish industry as one of many partners in accomplishing their goals. Closely working with the shellfish industry should not blind this agency from the other issues that can be destructive to Puget Sound. Waterfront owners should be viewed as a resource to help work together on the problems in Puget Sound, not treated like the enemy.

GC: We work with the industry and local health jurisdictions to evaluate and remediate degraded marine water. There is no conflict of interest when groups work together for the common good. In this case, DOH makes sure nobody becomes ill from eating shellfish and the industry would be cutting it's own throat if they did not take an active role in helping DOH, counties and local jurisdictions to remediate degraded water.

BD: My response to number 1 explains why I don't believe there is a conflict of interest in evaluating water conditions. As far as remediation, I can't imagine how this would be a conflict of interest. If our growing areas are being closed down due to water quality it

is only logical we would want to work on solutions to the pollutions problems causing the downgrades.
SD: The Department of Health is responsible for certifying water for shellfish harvesting.

3. What procedures are in place to shut down shellfish farming if it is determined that the operation is adversely impacting the environment?
TL: Currently it's my understanding the SMA does not provide for a moratorium, the state could change that if they wish, if not then we are left with mitigating negative impacts on a case by case basis.
LH: At this time----**NONE.**
GC: That is a question for WDFW or DNR.
BD: Various regulatory approvals are required for shellfish farms at the federal, state and local level. These approvals require review and mitigation of any significant environmental impacts. If a shellfish farming operation in acting outside of the scope of its permits, an enforcement action could be instituted by the agency that issued the permit.
SD: DNR will have the ability under its leasing program to require immediate changes to its geoduck aquaculture program if negative impacts to the marine environment are determined. Additionally, violations for permit conditions will be enforced by the relevant regulatory agencies such as the Army Corps of Engineers, Dept. of Ecology and local governmental planning departments.

4. How much money is at stake here? Is it worth it?
TL: Millions, it's relative, probably to some people and not to others.
LH: There are hundreds of millions of dollars at stake at the state level and billions at the federal level. Shellfish growers may make millions in the short term, but the taxpayers are and will continue to be stuck with the long term restoration costs.
GC: Millions of dollars are earned by the big companies and just making a living is it for the small operator. DOH treats all equally.
BD: Clearly geoduck farming is controversial in some areas. From my perspective all of the issues that make it controversial are mitigatable therefore regardless of the money at stake it is worth pursuing.

Science informs us regarding environmental impacts and with adaptive management of our farms any adverse impacts can generally be mitigated.

Growers have worked hard to address the issue of aquaculture equipment (tubes, nets, etc.) escaping from the farms in storm events. Regular patrols of beaches in the vicinity of our farms, twice a year we're doing coordinated broad clean-ups of huge areas of South Sound, and we've established (800) 964-6532 as a toll free number to call and report shellfish aquaculture debris. When we clean up beaches we're providing a public service in that we collect all debris. Typically 95% of what is being collected has nothing to do with shellfish aquaculture.

The final issue, and perhaps most sensitive, is what I refer to as the "use conflict" issue. This is the fact that upland owners have varying opinions as to whether growing geoducks commercially on Key Peninsula beaches is appropriate in various areas. This

conflicting use issue is something that can be addressed through local planning/zoning. As with other agricultural uses, there is a public process with ample of opportunity for public input and elected officials ultimately determining where it is or isn't appropriate.

As for the money at stake, it is not just revenue to shellfish growers. There is significant economic return to tideland owners who lease their beaches for geoduck culture (detailed in my response to #3). There is also considerable employment potential. As I mentioned at the forum, shellfish farmers are significant employers in many rural western Washington areas. In Mason County it is the second largest private employer and in Pacific County the largest. Between the two there is an estimated $27 million paid to workers annually. This money is significant to these rural economies.

SD: DNR's 2006 geoduck aquaculture leases will provide between 10% and 13% of gross geoduck product value at the time of sale (wholesale), along with $1,000 lease revenue per acre, per year. State geoduck aquaculture leases will earn money for two funds that enhance and manage aquatic lands. These two accounts are the Resource Management Cost Account (RMCA-Aquatics) and the Aquatic Lands Enhancement Account (ALEA). The RMCA-Aquatics account is used to fund DNR's management of state-owned aquatic lands throughout the state. Money in the ALEA account is used by a number of state agencies to fund management and protection of state aquatic resources. A typical example of the breakdown between agencies is:

DNR 58% Geoduck wild stock fishery management, enforcement and research; aquatic land management; *Spartina* and invasive species control

WDFW 13% Geoduck wild stock fishery management, enforcement and research; salmon recovery; shellfish enhancement projects

IAC 24% ALEA Public Access and habitat restoration grants (state, tribal and local governments); habitat acquisition and public access projects*

Dept Agriculture *Spartina* and invasive species control 4%

State Parks 1% Boating safety

The Interagency Committee for Outdoor Recreation Program (IAC) runs an ALEA grant program that dedicates funding for activities that enhance and preserve aquatic habitats throughout Washington State and increase public access to the waterfront. The Department of Health also receives some funding for shellfish (human health) testing. In addition, the program will provide family wage jobs for employees and contractors of the shellfish industry and will help Washington's economic trade balance, since most of the product is exported out of the USA with great value. Conducting the state program also allows a monitoring program to be instigated, to begin to answer some of the public's questions about the potential impacts of geoduck aquaculture practices.

5. Fourteen years ago, I collected shellfish samples for a non-profit organization, "People for Puget Sound" to check for contamination at Vaughn Bay and Penrose. Our findings resulted in closure when levels were high. Why don't we have shellfish companies pay a percentage of profits for independent testing?

TL: That's an interesting thought, but we already have local and state agencies doing testing, and would you really believe the results if a shellfish company was doing the testing?

LH: The shellfish companies have convinced all agencies that they should not have to pay fees for monitoring or testing of any kind at the county or state level. Our shoreline groups have asked for fees at the County level to cover monitoring costs with no success.
GC: (no response.)
BD: Shellfish companies do pay annually a substantial fee for testing their shellfish for Paralytic Shellfish Poisoning (PSP also referred to as red tide). Growers products are required to be tested regularly and pay fees to the state Department of Health for that. The huge number of samples submitted (and paid for) by growers all around the state provides DOH with a detailed picture of what is occurring with red tide state wide. This helps keep public beaches open as well. Without grower samples DOH would have to close large areas out of precaution due to lack of samples.
SD: Shellfish companies do pay a fee for water quality testing by Department of Health.