Thurston County Planning Commission

October 2, 2019

Comments by Patrick and Kathryn Townsend

Table of Contents

Chapter 19.600 Shoreline Use and Modification Development Standards – with comments from Patrick and Kathryn Townsend.

Email from Patrick and Kathryn Townsend to Kraig Chalem and Brad Murphy – Permit violation and independent survey related to Pacific Northwest Aquaculture / Changmook Sohn geoduck operation.

Email from Patrick and Kathryn Townsend to Kraig Chalem, Brad Murphy and the BOCC permit violations.

Protect Our Shoreline News – Burley Lagoon aquaculture die-off.

Protect Our Shoreline News – Taylor Shellfish Says Clam Die-off in Burley Lagoon from Toxic Algae.


For more information go to:

ProtectZangleCove.org
CoalitionToProtectPugetSoundHabitat.org
CaseInlet.org
ProtectOurShorelineNews.blogspot.com
Chapter 19.600 Shoreline Use and Modification Development Standards

The following are comments from Patrick and Kathryn Townsend, 7700 Earling Street NE, Olympia WA 98605, on the Aquaculture Section of Chapter 19.600 of the Draft SMP for Thurston County.

19.600.115 Aquaculture

A. Environment Designations Permit Requirements

PT/KT: Things have changed since 1971 when the Shoreline Management Act was written. What existed in the way of shellfish aquaculture in 1971 is a far cry from what exists today.

In 1991, Joan Thomas, one of the original drafters of the Shoreline Management Act stated: "When the SMA was written in 1971, aquaculture meant oysters and clams and one salmon raising operation. This activity was recognized and protected as water-dependent. I do not read the original intent or the original guidelines to promote the industry as we know it today." Ms. Thomas passed away in 2011. What would she say today?

If there was that big a difference between what existed in the way of industrial shellfish aquaculture in 1971 and 1991, please consider how different it is today in 2019, 28 years AFTER 1991. Yet the County is willing to permit literally acres of PVC tubes on Thurston County tidelands, acres of netting and clam bags, raking of the tidelands, removal of native species and water jet harvest of geoduck. As in North Puget Sound, will we also find tractors on our tidelands? This is not in alignment with the goals to protect salmon and orcas. It is a complete contradiction.

It would appear that county personnel are so afraid of the shellfish industry that they can’t ever say “no” to the industry and they are doing their best to comply with the industry demand to reduce monitoring and regulation. Or perhaps they so aligned with the shellfish industry’s vision of turning Puget Sound into an unregulated, massive working waterfront that they choose to view ordinary citizens who present a different perspective as irrelevant.

Many of the claims of the shellfish industry are tall tales, for example the claim that the geoduck tubes are hardly ever visible. That is bunk, pure and simple. It is even bigger bunk when geoduck tubes, as in the current geoduck operation in Zangle Cove, are planted well above the beach elevation permitted by the Thurston County Planning Department. The County has not yet responded to our letters about this issue. We would ask the Planning Commission to read our letter to the County listing the permit violations of the ChangMook Sohn geoduck operation as the violations are undoubtedly not unique to this operation. We ask the Planning Commission to give guidance to the County Planners to deal appropriately with the permit violations and if operators refuse to remedy their permit violations, their permits must be terminated.
With 85% of Totten Inlet tidelands filled with shellfish aquaculture on all levels of the beach, we would ask County officials and planners to look at what is currently happening in Burley Lagoon and Rocky Bay in Pierce County. We’ve attached two articles about the die-off of clams in these waterways and the consequent persistence of the bacteria and long-term horrific stench. The shellfish industry can attribute this to a toxic algae bloom, but everybody knows that illness occurs most easily in a system out of balance. Here is the link to the online source:

https://protectourshorlinenews.blogspot.com

Articles:
9/16/19: Taylor Shellfish Says Clam Die-off in Burley Lagoon from Toxic Algae
9/15/19: Burley Lagoon Residents Complain of Putrid Smell, Clams Die Off: A “Preferred Use” of the tidelands?

We would ask the planning commissioners to review the history of citizen and local organization efforts to bring reason to the shellfish industry’s attempt to take over Puget Sound tidelands. It is especially concerning that the primary areas that the industry covets are the estuaries—some of the most fragile areas of the shoreline.

https://protectourshorlinenews.blogspot.com/
http://coalitiontoprotectpugetsoundhabitat.org
http://caseinlet.org
http://protecttanglecove.org
http://apheti.org
https://www.centerforfoodsafety.org/issues/312/aquaculture

We request that the County put all applications for renewal of shellfish aquaculture operations and new shellfish aquaculture operations on hold and work with citizen and environmental groups to formulate appropriate regulations for the shellfish industry that take into consideration the goals to protect native species, salmon and orcas. Use of plastics in Puget Sound by the shellfish industry should be phased out.

Following are comments related to specific items in the Draft Chapter 19.600-SMP Update:

K.T: The shellfish industry and has been given too many allowances. Geoduck aquaculture “in all designations” needs to be removed. Shellfish aquaculture should not be allowed in Natural areas. It is clear that this draft would significantly allow for more geoduck operations by the industry.

K.T: The wording of this section puts the onus on the landowners to prove “substantial interference with normal public use of the surface waters.” This means individual homeowners going up against the shellfish industry and their significant lawyers and lobbyists. This wording fails to protect individual homeowners.

Where aquaculture is proposed in the following upland designations, the identified permit requirements shall apply. Where proposed in the adjacent aquatic designation, the corresponding upland designation shall be used to determine permit requirements:
1. **Mining:** Shoreline Residential, Urban Conservancy, Rural Conservancy, and Natural: Except as otherwise stated in this section, an SDP shall be required for new aquaculture activities that meet the definition of substantial development under the Shoreline Management Act and this Shoreline Master Program. **Exempt if definition of substantial development is not met.**

**KT:** What is definition of substantial development. There should be a reference here to where that is defined.

2. **Natural:** A CUP shall be required where the proposal requires new structure or facilities.

3. **Geoduck aquaculture in all designations:**
   
   **KT:** Geoduck aquaculture, using 7 miles/16 tons of PVC plastics along with netting PER ACRE of tideland, has been given extraordinary license to change the habitat of Puget Sound. It is actually a tiny industry that makes most of its money on the overseas market, selling to a population who believes that consuming geoducks will enhance their virility. Massive alteration of the tidelands of Puget Sound for this craven money making purpose. What does the County actually receive in recompense for giving away the tidelands of Puget Sound to the shellfish industry. Does anyone in Thurston County actually want to save the salmon and the orcas? Geoduck aquaculture “in all designations” needs to be removed.

   a. A CUP shall be required for all new commercial geoduck aquaculture and an administrative CUP for existing aquaculture being converted to commercial geoduck aquaculture;
   b. An SDP shall be required for the planting, growing and harvesting of farm-raised geoducks only if the specific project or practice causes substantial interference with normal public use of the surface waters.
   c. Wildstock geoduck harvest associated with the state and tribal co-managed geoduck fishery is not aquaculture. Since a fishery does not constitute development under this Program, it is not subject to its regulations.

**PT:** What is the rationale for creating a separate set of regulations for geoduck?

**PT:** After expending substantial taxpayer resources requiring and defending the need for an SSDP why is the new SMP proposing CUPs? What are the differences between the two?

**PT:** Existing non-geoduck aquaculture is substantially different than geoduck aquaculture. The preparation, planting, structures, and harvest are very different from oyster operations, as one example. There should be no shortcut via an “administrative CUP” for switching from one to the other.

**PT:** Thurston County has already determined, and defended in court, that an SDP is required for geoduck operations because of the presence of structures. The court’s decision had nothing to do with public use of the waters. This section (b) should be deleted.

4. Certain aquaculture developments and supplemental wild stock seeding may be exempt from SDP requirements pursuant to the exemption criteria at Section 19.500.100(C) of this Program. Such activities shall also comply with all state and federal requirements, including but not limited to Department of Health certification and license, or Shellfish Import or Shellfish Transfer permits, where applicable.
PT: “Certain aquaculture developments” needs to be defined clearly. Unless clearly defined, this item should be deleted. That such activities must comply with all state and federal requirements is an oxymoron. This is, of course, always the case.

KT: If there is “seeding,” then the activity has nothing to do with “wild stock.” “Seeding” means “planting”; means aquaculture farming. Thus wherever “seeding” occurs, that must be designated aquaculture.

B. Application Requirements

In addition to the minimum application requirements in Section 19.500.105(C), aquaculture applications shall include the following information if not already provided in the local, state or federal permit applications. Where requested information is not applicable to a specific proposal, the application shall not be required to include all items listed under this section as long as it is demonstrated why the information does not apply, with concurrence from the Department.

KT: What is the specific process for demonstrating and/or determining why requested information is not applicable to a specific proposal and thus why the information does not apply? Is there a specific form and if so, where is it located? WHO makes the determination about whether requested information is applicable to a specific proposal and is there a process for citizen/community input on the specific claim? Are neighboring citizens/community members notified that requested information has been waived and is there a process for anyone to object to this apparently arbitrary decision by an unknown party? I agree with PT comment below: the last sentence in the above paragraph should be stricken.

1. A site plan, including:
   a. The perimeter of the proposed aquaculture operation area;
   b. Existing bathymetry depths based on mean lower low water (MLLW datum);
   c. Adjacent upland use, vegetation, presence of structures, docks, bulkheads and other modifications;
   d. Areas where specific substrate modification will take place or structures will be constructed or installed;
   e. Access provisions for marine or vehicle traffic, processing structures or facilities; and
   f. Location of storage or processing structures or facilities.

PT: The last sentence under (B) should be deleted. The site plan should always include information for (a) through (f).

KT: The term “structures” and “other modifications” should be either be defined or stricken as meaningless terms.

2. A baseline description of existing and seasonal conditions, including the best available information. Where applicable to the subject proposal, the following should be included if already part of information submitted for another federal or state agency. Note: information regarding wind conditions, current flows and flushing rates (items 3-5) will generally not be applicable to shellfish aquaculture applications.

   a. Water quality;
   b. Tidal variations;
   c. Prevailing storm wind conditions;
   d. Current flows at each tidal eye;
   e. Flushing rates;
   f. Littoral drift;
g. Sediment dispersal, including areas of differing substrate composition;

h. Areas of aquatic, intertidal and upland vegetation complexes; a vegetation habitat survey (see Section 8.10, Biological and Habitat Surveys) must be conducted according to the most current WDFW eelgrass and macroalgae survey guidelines;

i. Aquatic and benthic organisms present, including forage fish, and spawning and other lifecycle use of, or adjacent to, the site;

j. Probable direct, indirect and cumulative impacts to items B.1. - B.9. above; and

k. Visual assessment, including photo analysis / simulation of the proposed activity demonstrating visual impacts within 1,500 feet of the proposed project site. Where predator exclusion devices are proposed, the assessment shall include an analysis of visual impacts of proposed predator exclusion devices at mean high and mean low tides.

PT: Items (c), (d) and ("e) should not be stricken. Prevailing wind storm conditions, current flows at tidal cycles, and flushing rates are relevant to potential impacts on tideland ecosystems, including the impact of siltation by aquaculture operations, and vary from one site to another. These must remain in the specification.

KT: The re-wording in the 2nd sentence ("...should be included if already part of information submitted for another federal or state agency.") should be stricken:

1. The word “should” (rather than “shall”) gives complete leeway to the applicant to provide the information or not based on their own interests (if it was “submitted to another federal or state agency.”)

2. The logic of the sentence implies that if the information is not already on a state or federal form, it is not required and the “should” implies logically that even if it is on a state or federal form, it is not required.

3. Providing this information must be a requirement for ALL applications without dithering around trying to put in language that excuses the applicant from supplying relevant information about the site.

4. The second sentence of this section is both garbled and inaccurate.

3. An operational plan, which includes the following, when applicable should be included if already part of information submitted for another federal or state agency:

a. Species, and quantity to be reared;

b. Source of aquatic product;

c. Implementation methods, including density, schedule, phasing options, time of day, and anticipated lighting and noise levels;

d. Number of employees/workers necessary for the project, including average and peak employment;

e. Methods and location of waste disposal and sanitation facilities;

f. Methods for planting and harvest;

g. Methods for predation control, including types of predator exclusion devices;

h. Food and equipment storage;

i. Anticipated use of any feed, herbicides, antibiotics, vaccines, growth stimulants, antifouling agents, or other chemicals and an assessment of predicted impacts;

j. Methods to address pollutant loading, including biological oxygen demand (BOD);

k. A schedule for water quality monitoring, where required; and

l. Other measures to achieve no net loss of ecological functions consistent with the mitigation sequence described in WAC173-26-201(2)(e).

PT: These items should not be excluded if already provided as a part of a submission to another federal or state agency. The intent of Thurston County SMP regulations does not
duplicate all of the other state and federal regulations, and the specified information is relevant. If the information has been submitted as a part of other regulations, it would not be unreasonably difficult to provide it to Thurston County.

**KT:** Once again—this is a highly confusing addition. It appears to imply that “an operational plan” may or may not be (should) included if it was included on a federal or state submission, logically implying that it is not required to be included at all. This is garbled at best. Simply say that the following items MUST be included (a-l). The County does not need to run interference with the state and federal requirements. Somebody is obviously trying to say something in a very backward (hidden?) way.

4. Other applications and reports, when applicable or **requested depending on site specific details determined during permit review**, to ensure compliance with permit conditions, which may include:

   a. An accepted Washington Department of Natural Resources lease application, including a waiver of preference rights to access for navigation from the upland property owner, if applicable;
   b. An accepted Washington Department of Ecology National Pollutant Discharge Elimination System (NPDES) permit, if applicable;
   c. An accepted Washington Department of Health beach certification number;
   d. An accepted WDFW aquatic farm permit, and/or fish transport permit;
   e. Water quality studies;
   f. Reports on solids accumulation on the bottom resulting from the permitted activity along with its biological effects;
   g. Report on growth, productivity, and chemical contamination of shoreline plants and animals within or adjacent to the proposed site;
   h. Noise level assessments, including mitigation measures to ensure compliance with Chapter 10.36 & 10.38 TCC; and/or

**PT:** The redline addition should be deleted. All of the subject reports (a) through (h) are relevant to local SMP regulations and should be provided.

**KT:** I agree with PT. Strike the red-line wording. All that wording does is create confusion and questions about who will make the decision about whether these items are required or not, i.e., who is in charge of the “permit review”. There should be a standard set of requirements for all permit applications without having someone in the department able to pick and choose what is required from an individual applicant.

### C. Development Standards

1. **General Standards.**

   a. Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, shall be a preferred use.

   **PT:** “Shall be a preferred use” has no basis in WA state law or regulations. The recent Growth Management Hearings Board ruling confirms this. Change this to “is one preferred use among others”.

   **KT:** I agree with PT.

   b. Proposed residential subdivisions and other land uses and developments which may
impact aquaculture operations shall provide facilities to prevent any adverse water quality impacts to such operations.

PT: This section probably has no basis in any Washington state law. It should be stricken.

c. Site preparation and construction in the vicinity of aquaculture operations shall not result in off-site erosion, siltation, or other reductions in water quality.

PT: This probably has no basis in any Washington state law, other than the HPA. It should be stricken. It is also so vaguely defined as to be unenforceable.

KT: Also it is more than bizarre that Thurston County would want to enshrine in this document the one-way street that upland development may impact aquaculture operations. What about the fact that aquaculture operations have high impact on entire neighborhoods of shoreline property owners? Do you actually think that 7 miles of PVC weighing 16 tons per tideland acre, covered with plastic netting, does NOT impact upland owners? Do you actually think that boats, barges, workers on what once were pristine tidelands, raking, dredging, tractors, etc. do NOT impact upland property owners? We know that geoduck harvesting causes extensive siltation, which will impact any eelgrass in the vicinity and impact water quality.

KT: The shellfish industry claims that geoducks “clean the water.” In other words, geoducks remove phytoplankton from the water, which is NOT “cleaning” the water. Shellfish and geoducks filter and consume phytoplankton and detritus. Phytoplankton is an important aquatic plant and nutrient for a number of other aquatic species and is naturally present in the marine environment. Like all creatures, geoducks “poop”--they produce feces and pseudofeces and as the industry plants 3 seeds to the tube and one tube per square foot, that equates to 43,560 (if one seed per tube survives) to a maximum of 120,680 geoducks in one acre. That’s a lot of geoduck poop.

KT: Clams and oysters also poop. See excerpt below from:

It's not rocket science. It's "Ecosystem Services".
Oysters poop, seaweed grows, clams die. Ecosystem services at work.
As noted in an August 2017 "Ecosystem Services" winning picture, one source of the problem is directly related to oyster feces, their pseudo feces, associated ammonia, and shell surface area provided by high density planting of oysters. Oysters poop and provide "fertilizer" on the surface of those shells macro algae attaches and thrives on the "nutrients" expelled by the native Pacific oysters. That growth is so intense oyster growth slows and clams rise to the surface. Summertime low tides and summertime heat promote decay and death. Smells emanate. Because of aquaculture, it's not rocket science. Calling it "ecosystem services" deflects attention from dealing with the problem created.

KT: With the above two (new) standards (b and c), obviously written by and for the shellfish industry, you are looking from the perspective of that tiny industry which doesn't provide much money to the County, rather than from the perspective of property owners who are probably your biggest source of income. Why is the County so enamored of the shellfish industry? What do you get form them? This is a specific question that deserves a specific answer.

b. When a shoreline substantial development or conditional use permit is issued for a new aquaculture use or development, that permit shall apply to the initial siting, construction, and planting or stocking of the facility or farm. Authorization to conduct such activities shall be valid for a period of five years with a possible extension per Section 19.500.105(H) of this Program. After an aquaculture use or development is established under a shoreline permit, continued operation of the use or development, including, but not limited to, maintenance, harvest, replanting, restocking or changing the culture technique shall not require a new or renewed permit unless otherwise provided in the conditions of approval, or if required pursuant to permit revision criteria in WAC 173-27-100 or this Program. Changing of the species cultivated shall be subject to applicable
standards of this Program, including, but not limited to, monitoring and adaptive management in accordance with standard g, below.

**PT:** Due to the extreme risk to endangered and threatened species, such as Southern Resident Killer Whales and salmon, this item should be stricken. There is no current justification for automatic extension of permits. No business should be exempt from periodic review of permit requirements.

c. Aquaculture shall not be permitted in areas where it would result in a net loss of shoreline ecological functions, or where adverse impacts to critical saltwater and freshwater habitats cannot be mitigated according to the mitigation sequencing requirements of this Program (see Section 19.400.100(A)).

**PT:** This statement ignores the requirement under the general No Net Loss policy for monitoring and adjustment based on results. Research has shown that the large majority of mitigated projects fail to meet No Net Loss requirements. This item should be changed to “Aquaculture shall not be permitted in areas where it would result in a net loss of shoreline ecological functions, or where adverse impacts to critical saltwater and freshwater habitats cannot be monitored and reviewed on a periodic basis based on scientific best practices. In such circumstances the principles of the precautionary principle shall be applied.”

**KT:** Please remind yourselves that county planners have explicitly stated that the County does not have the money or the personnel to monitor these aquaculture operations, that they rely on citizens to monitor for County. Given this fact, it is questionable whether permits should be given at all.

d. Aquaculture shall not significantly conflict with navigation and other water-dependent uses.

e. Aquaculture activities proposed within Shorelines of statewide significance shall first be subject to the policies for shorelines of statewide significance contained in Chapter 19.300 (General Goals and Policies) of this Program, and then the policies and regulations contained in this section, in that order of preference.

**PT:** This is an unnecessary specification. It should be deleted.

f. In general, when considering new aquaculture activities, refer to policies at Section 19.300.130(E-K) for siting and design preferences.

**PT:** This is an unnecessary specification at this section. Recommend that this item be deleted.

g. Project applicants proposing to introduce aquatic species that have not previously been cultivated in Washington State are responsible for pursuing required state and federal approvals relating to the introduction of such species, as determined by applicable state and federal agencies. A plan for monitoring and adaptive management shall also be submitted for County review, unless the operation is conducted in a fully contained system with no water exchange to the shoreline. The County shall provide notice and time to comment for appropriate agencies in accordance with County procedural requirements, and shall circulate the monitoring and adaptive management plan. Upon approval, the plan shall become a condition of project approval.
KT: The County should provide notice and time for comment from neighboring landowners and environmental organizations. Who does the County "circulate the monitoring and adaptive management plan to?" It should be specifically stated that the immediate community received written notice and copies of the monitoring and adaptive management plan.

KT: Unless the County will commit to actual monitoring on a regular basis, "g" should be stricken. County personnel have stated to us that they do not have the personnel or the money to do any monitoring of aquaculture operations and that they rely on community members to do it for them.

h. Over-water structures and/or equipment, and any items stored upon such structures such as materials, garbage, tools, or apparatus, shall be designed and maintained to minimize visual impacts. The maximum height for items stored upon such structures shall be limited to three feet, as measured from the surface of the raft or the dock, unless shoreline conditions serve to minimize visual impacts (for example: high bank environments, shorelines without residential development), but in no case shall the height exceed six feet. Height limitations do not apply to materials and apparatus removed from the site on a daily basis. Materials that are not necessary for the immediate and regular operation of the facility shall not be stored waterward of the OHWM.

PT: Suggest changing the first sentence to: "Over-water structures and/or equipment, including barges and similar vessels,...."

KT: Last sentence is confusing. It implies that materials that ARE necessary for immediate and regular operation of the facility can be stored waterward of the OHWM. This means that half the time, (and most of daylight hours in the summer), these storage items will be on the beach. Please explain to us what you envision here and how you will monitor these equipment/over-water structures. One of the operators on Dana Passage, has a barge well over 6 feet that he leaves in view of the entire neighborhood of Zangle Cove most of the time. When we complained related to the 3 day limit for such barges, he move his barge every 3 days from one side of the Cove to the other. And this is an operation that, last we checked with the County, doesn't even have a County permit, a fact we have complained about in writing in the past. So any items such as "Item II" appear to be nothing more than nice sounding words, meaning nothing.

i. Aquaculture structures and equipment used on tidelands below ordinary high water shall be of sound construction, with the owners' identifying marks where feasible, and shall be so maintained. Abandoned or unsafe structures and/or equipment shall be promptly removed or repaired by the owner.

PT: Remove "where feasible" from "with the owners' identifying marks where feasible....". It is not clear when this is not feasible, and has been a requirement for a number of years.

j. No processing of any aquaculture product, except for the sorting and culling of the cultured organism and the washing or removal of surface materials or organisms after harvest, shall occur in or over the water unless specifically approved by permit. All other processing and related facilities shall be located on land and shall be subject to the regulations for Commercial) and Industrial Uses (Section 24.10.100), in addition to the provisions of this section.

k. No garbage, wastes or debris shall be allowed to accumulate at the site of any aquaculture operation, except for in proper receptacles.
KT: What is a "proper receptacle?" Please give example.

m. The rights of treaty tribes to aquatic resources within their usual and accustomed areas are addressed through direct coordination between the applicant/proponent and the affected tribe(s). Thurston County will notify affected tribes of new shoreline permit applications utilizing the applicable notification process in Title 20.60 TCC.

n. In order to avoid or limit the ecological and aesthetic impacts from aquaculture siting and operations, the following shall apply:

i. Predator exclusion devices shall be firmly attached or secured so as not become dislodged.

PT: Please describe how this will be monitored. Recent projects have already failed in this regard. If this cannot be monitored there should not be any permitting until it can.

ii. Predator exclusion devices shall blend with the natural environment.

PT: Please describe what this means. Currently this is not possible.

iii. Aquaculture operators shall routinely inspect and maintain predator exclusion devices.

iii. Predator exclusion devices such as rubber bands, small nets, and area netting can be dislodged and pose a hazard to birds, marine mammals, and other wildlife and domestic animals, and thus are subject to Thurston County Public Nuisance regulations (Chapter 10 TCC).

PT: Nuisance regulations are ineffective in relation to operations that are routinely permitted.

KT: What outside agency will monitor this? The County has already stated that it does not have the money or the personnel to monitor aquaculture installations.

iv. Predator exclusion devices shall be removed as soon as they are no longer needed to perform protective functions.

PT: This is meaningless unless there is a definition of "protective functions" and their intended need.

v. Predator exclusion methods shall not be designed to intentionally kill or injure wildlife. Predator exclusion methods shall comply with federal and state regulations as determined by applicable federal and state agencies.
PT: "Predator exclusion" is an industry term. It has no place in a regulatory definition. 'Predators', in this case are native, naturally occurring wildlife species. This should be deleted, or changed to refer to native wildlife.

KT: I agree with PT. The term “predator exclusion” is a negatively biased term that reflects only the point of view of the proponents of commercial aquaculture. It is inaccurate from any other point of view. To be accurate this section should read:
Wildlife exclusion methods shall not be designed to intentionally kill or injure wildlife. Wildlife exclusion methods shall comply with federal and state regulations as determined by applicable federal and state agencies.

vi. When determined necessary to minimize aesthetic and habitat impacts of large-scale projects, the County may require a phased approach to operation. This includes planting and harvesting areas on a rotational basis within the same tideland parcel.

PT: Rotational planting may aggravate environmental impacts due to increase occurrence of siltation, etc. Please provide the scientific rational for the statement that rotational planting and harvesting may minimize aesthetic and habitat impacts. This is questionable.

o. Where aquaculture occurs on state owned aquatic lands, the project proponent shall contact and adhere to Washington Department of Natural Resources requirements.


a. In addition to the general development standards above, commercial geoduck aquaculture shall only be allowed where sediments, topography, land and water access support geoduck aquaculture operations without significant clearing or grading.

PT: This conflicts with current requirements related to tribal rights. A geoduck aquaculture operation must allow tribes to harvest (clear) appropriate amounts of native geoducks.

KT: We recommend excluding estuaries as appropriate for commercial geoduck aquaculture or any kind of aquaculture. Estuaries are the most sensitive of tidelands and should be preserved in their natural state. So many have already been used for aquaculture, there may not be many left. For example, 85% of Totten Inlet is in tideland aquaculture.

b. All permits shall take into account that commercial geoduck operators have the right to harvest geoduck once planted.

PT: What is the point of this statement? This appears to be an attempt to prohibit future constraints on geoduck operations. It should be deleted.

c. All subsequent cycles of planting and harvest shall not require a new CUP, subject to WAC 173-27-100.

PT: This WAC is specific to revisions to permits where environmental conditions do not change. Aquaculture operations occur in highly changeable environments. It should be obvious that permits should be renewed at the end of predictable planting/harvest cycles.
KT: Aquaculture, especially geoduck aquaculture using 7 mile/16 tons of PVC plastic per acre, along with tons of plastic netting, as well as clam culture using plastic net clam bags, are high-intensity operations. Because there is no monitoring by the County (as stated to us by County employees), there must be requirements for re-submission of applications after the planting/harvest cycle, which is 5-7 years. This is not unreasonable, as conditions can dramatically change, especially in our era of global warming. It is not reasonable to just write a “blank check for the tidelands” to the industrial shellfish industry, when we, as a culture, are attempting to understand the issues with depletion of salmon and the dwindling pods of Orca.

KT: It is also unclear why the County is not requiring an SDP for industrial aquaculture after the rulings by Judge Bjorgen and Judge Tabor related to geoduck PVC pipes as “structures.” Is this just an example of the County caving in to the industry’s attempt to minimize the impacts of their operations? Please explain the difference between the SDP and the CUP in terms of regulation and monitoring required under each along with community participation in the process under each.

d. A single CUP may be submitted for multiple sites within an inlet, bay or other defined feature, provided the sites are all under control of the same applicant and within the Program’s jurisdiction.

PT: Multiple sites within an environmentally significant inlet, bay or other marine environment, may be significantly different. This item should be deleted.

e. Commercial geoduck aquaculture workers shall be allowed to accomplish on-site work during low-tides, which may occur at night or on weekends. Where such activities are necessary, noise and light impacts to nearby residents shall be mitigated to the greatest extent practicable.

PT: No night or weekend activity should be allowed within 2,000 feet of a residential area. The term “greatest extent practicable” has no meaning.

3. Additional Standards for Net Pens. Fish net pens and rafts shall meet the following criteria:

PT: Net pen operations have provedly demonstrated their environmental damage to Puget Sound. This entire section should be deleted.

a. Fish net pens shall meet, at a minimum, state approved administrative guidelines for the management of net pen cultures. In the event there is a conflict in requirements, the more restrictive shall prevail.

b. Alternative facilities and technologies that reduce ecological and aesthetic impacts shall be preferred to traditional floating net pens.

c. Anchors that minimize disturbance to substrate, such as helical anchors, shall be employed.

d. Net pen facilities shall be located no closer than 1,500 feet from the OHWM, unless a specific lesser distance is determined to be appropriate based upon a visual impact analysis or due to potential impacts to navigational lines.

e. Net cleaning activities shall be conducted on a frequent enough basis so as not to violate state water quality standards.

f. In the event of a significant fish kill at the site of the net pen facility, the facility operator shall submit a timely report to the Thurston County Environmental Health Section and
the Thurston County Department of Resource Stewardship stating the cause of death and shall detail remedial action(s) to be implemented to prevent reoccurrence.

New floating net pens shall be prohibited in Thurston County’s South Puget Sound jurisdictional area until updates to Ecology’s guidance on Recommendations for Managing Commercial Finfish Aquaculture is completed and can be reviewed by county staff to evaluate possible environmental benefits and impacts.

19.600.130 Commercial Development

A. Environment Designations Permit Requirements

Where commercial development is proposed in the following upland or aquatic designations, the identified permit requirements shall apply:

1. Natural- Prohibited

2. Urban Conservancy, Rural Conservancy, and Shoreline Residential Mining:
   a. SDP for water-oriented commercial activities;
   b. Prohibited for non-water-oriented uses, except CUP for uses described in Section 19.600.130(B)(8)

3. Aquatic: Prohibited, unless the activity is water-dependent or a necessary appurtenance to a use allowed in the adjoining upland designation, then a CUP.

B. Development Standards

1. Commercial development shall result in no net loss of shoreline ecological functions or have significant adverse impact to other shoreline uses, resources and values provided for in RCW 90.58.020, such as navigation, recreation and public access.

2. Commercial developments shall be permitted on the shoreline in descending order of preference. The applicant shall demonstrate that a more preferred use is not feasible when proposing a less preferred use.
   a. Water-dependent uses;
   b. Water-related uses;
   c. Water-enjoyment uses;
   d. Non-water-oriented uses that include substantial opportunities for public access and subject to a CUP.

PT: What is the basis for this order of preference? And what is the basis for the requirement to demonstrate that a more preferred use is not feasible? Is it even possible to demonstrate this?

3. Commercial development shall not significantly impact views from upland properties, public roadways, or from the water
4. The design and scale of a commercial development shall be compatible with the shoreline environment. The following criteria will be used to assess compatibility:
   a. Building materials
   b. Site coverage
   c. Height
   d. Density
   e. Lighting, signage, and landscaping
   f. Public access
   g. Visual assessment

5. The County shall consider public access and ecological restoration as potential mitigation of impacts to shoreline resources and values for all water-related or water-dependent commercial development, unless such improvements are demonstrated to be infeasible or inappropriate. Public access shall be provided consistent with Section 19.400.145 of this Master Program. In-kind mitigation shall be determined infeasible prior to utilizing out-of-kind mitigation.

**PT: Such mitigations must be site-specific.**

6. Non-water-dependent commercial uses shall not be allowed over water except in existing structures or in the limited instances where they are auxiliary to and necessary in support of water-dependent uses.

7. Parking shall be located upland of the commercial use and designed to minimize adverse visual impacts to the shoreline. Over-water parking is prohibited.

8. Non-water-oriented commercial uses are prohibited unless:
   a. The use is on land designated commercial by the Thurston County Comprehensive Plan and existing on the effective date of this Program;
   b. The use is on land designated commercial by the Thurston County Comprehensive Plan and is physically separated from the shoreline by another property or public right-of-way;
   c. The use is part of a mixed-use project that includes water-dependent uses and provides a significant public benefit with respect to the Act’s objectives, such as providing ecological restoration and public access. Water-dependent components of the project and ecological restoration and access shall be improved prior to occupancy;
   d. The use is on a site where navigability is severely limited and the use would provide a significant public benefit with respect to the Act’s objectives, such as providing public access and ecological restoration.

Non-water-oriented commercial uses meeting these criteria must obtain a CUP.
C. Redevelopment

1. When commercial redevelopment involves relocating or expanding the existing structure, shoreline restoration or mitigation shall be a condition of approval (see Appendix B). Restoration may include, but is not limited to:
   a. Moving the structure away from the shoreline;
   b. Removing any shoreline armoring or replacing hard with soft armoring;
   c. Riparian vegetation restoration, including removing invasive and planting natives;
   d. Stormwater retrofits to implement Low Impact Development.

2. When commercial redevelopment involves relocating or expanding the structure, public access shall be a condition of approval, unless infeasible due to health or safety issues. Public access may include, but is not limited to:
   a. Maintaining current public access, if existing;
   b. Connecting a trail to existing public access on adjacent property;
   c. Providing for visual access to the shoreline.
Email from Patrick and Kathryn Townsend to Brad Murphy and Kraig Chalem of Thurston County Planning Department.

Includes Survey by Hatton Godat Pantier, Surveyors on September 9, 2019, of the ChangMook Sohn geoduck operation on Zangle Cove with reference to the beach height of the operation.

The ChangMook Sohn geoduck operation, installed by Taylor Shellfish, is well above the allowed +3 beach height permitted to ChangMook Sohn.

From: Patrick Townsend <patrick.townsend@townsendsecurity.com>
Date: Mon, 9 Sep 2019 12:32:38 -0700
Subject: Changmook Sohn permit violation (please confirm)
To: chalemk@co.thurston.wa.us, Brad Murphy <brad.murphy@co.thurston.wa.us>
Cc: Kathryn Townsend <kath.townsend@gmail.com>

Dear Kraig and Brad,

Please find attached a land survey of the ChangMook Sohn tideland geoduck operation located at 930 76th Avenue Northeast on Zangle Cove in Thurston County, Washington. This survey, produced by Hatton Godat Pantier, establishes the tidal elevations of all areas of the Sohn geoduck planting and is a binding, professionally certified document that precisely states the tidal elevation of the PVC tubes and geoduck seed on the tideland.

It is clear from the Hatton Godat Pantier survey that the geoduck operator has violated the Sohn permit restriction by planting well above the +3 tidal elevation. The plantings of PVC, netting and geoduck are as high as +5.9 tidal elevation. The mitigations outlined in the permit are designed to implement a No Net Loss policy and protect endangered species and the forage fish they depend on. Compliance with the mitigation strategy is expected by other regulating agencies such as the Department of Ecology and the Army Corps of Engineers. It is critical that immediate action be taken to bring this operation into compliance by removing all plantings of PVC, netting and geoduck seed above the +3 tidal elevation. If ChangMook Sohn and his operator are unwilling to come into compliance with their permit, the permit should be withdrawn and fines imposed.

Sincerely,

Patrick and Kathryn Townsend

[Netting Survey2.pdf]
Hatton Godat Pantier Survey of ChangMookSohn geoduck operation tideland/beach elevation
Patrick and Kathryn Townsend
7700 Earling Street NE
Olympia, WA 98506
360-357-9082

July 9, 2019

Kraig Chalem, Supervisor, Thurston County Compliance Unit
Brad Murphy, Senior Planner, Thurston County Planning Department
John Hutchings, Thurston County Commissioner
Gary Edwards, Thurston County Commissioner
Tye Menser, Thurston County Commissioner
Thurston County Planning Commission
2000 Lakeridge Drive SW
Olympia, WA 98502-6045

Subject: ChangMook Sohn Commercial Geoduck Farm Shoreline Substantial Development Permit Violations
Project Number: 2014108800
Applicant: ChangMook Sohn Industrial Geoduck Farm Application
Property: Parcel Number 12911440102

Dear Messrs. Chalem and Murphy, and Commissioners Hutchings, Edwards and Menser and Thurston County Planning Commission:

The ChangMook Sohn commercial geoduck operation was authorized by Thurston County’s Resource Stewardship Department on May 3, 2016 under Project No. 201408800. The required Shoreline Substantial Development Permit was issued based upon a Mitigated Determination of Nonsignificance (MDNS) under the State’s Environmental Policy Act (SEPA). There were 18 separate Mitigating Conditions imposed by the County upon Mr. Sohn’s proposed commercial geoduck farm in order for it to be approved for operation. The farm was fully installed on May 7, 2019. It was preceded by a very small sample area that was planted on April 16, 2018. Our tideland property is immediately adjacent to the ChangMook Sohn tideland property.

It has recently come to our attention that the current large planting of geoducks on the ChangMook Sohn tideland violates several of the Mitigating Conditions of the “Determination of Non-Significance” 2014108800 – Sohn Geoduck MDNS.

Following are the permit violations noted to date:

1. **#2 of the MDNS states:** “An unobtrusive but visible sign shall be placed at the aquaculture bed listing the name and contact information for a person designated to immediately address problems associated with the aquaculture bed when discovered by citizens or agency representatives.”

   **No such sign exists.**

2. **#4 of the MDNS states:** “All tubes, mesh bags, and nets used on the tidelands below the ordinary high water mark (OHWM) shall be clearly, indelibly, and permanently marked to identify the permittee name and contact information (e.g., telephone number, email address and mailing address). On area nets, if used, identification markers will be placed with a minimum of one identification marker for each 100 square feet of net.”
There are no identifying markings on any tubes or nets. There is nothing that identifies Sohn and his contact information or Taylor Shellfish (Sohn's aquaculture operations contractor) and their contact information. There are no identification markers on any of the nets, much less every 100 square feet of net. The tubes are old, obviously previously used tubes, quite a few cracked or chipped.

3. #11 of the MDNS states: "Shellfish culturing shall not be placed above the tidal elevation of +3 MLLW in order to minimize potential impacts to forage fish habitat. If herring spawn is observed, then those areas shall be avoided until the eggs have hatched."

1) It appears that the Sohn geoduck operation has been planted well above the permitted tidal elevation of +3 MLLW. See photo below taken on June 26, 2019, 8:17 am at low tide of +3.6.

- The above photo shows the ChangMook Sohn geoduck operation at low tide of +3.6 MLLW at 8:17 am (lowest tide of the day), Wednesday, June 26, 2019.
- Sohn's tubes are placed well above the +3.6 MLLW to at least +4.3 or higher.
- Based on permit compliance, the Sohn geoduck operation with a maximum tidal elevation of +3 MLLW should not have been visible on this low tide, because the tide never went below +3.6 MLLW.

2) The photo below shows the ChangMook Sohn geoduck operation at a low tide of +3.6 at 6:32 pm on July 7, 2019. It is obvious that the tubes were placed well above the tidal height of +3 allowed by the permit.
• ChangMook Sohn geoduck operation at tidal elevation of +3.6 on July 7, 2019 at 6:32 pm
• WillyWeather chart for 6:32 pm on July 7, 2019 shows the tidal elevation at Dofflemeyer Pt. at +3.6.

• The Sohn planting is at a tidal elevation well over +3.6. Again, if planted to a +3, the planting should not be visible at this tidal elevation.

3) Tide table statistics were taken from the NOAA Tide Charts for Dofflemeyer Point, https://tidesandcurrents.noaa.gov/noaatidepredictions.html?id=9446800

• In the photo below taken on Tuesday, June 25, 2019, at approximately 7:20 pm, when the tidal elevation was approximately +4.3 MLLW, the tubes could still be seen (tidal elevation statistics based on Willyweather tide chart for that date). The Sohn operation was planted to at least a +4.3 tidal elevation. Their permit allows planting to +3.
• Tubes of Sohn geoduck operation seen at approximately the same elevation as the survey stake, which is at least +4.3 MLLW tidal elevation or higher.

The above facts lead us to the conclusion that the Sohn operation was planted well above the permitted tidal elevation of +3 MLLW to at least a tidal elevation of +4.3 MLLW or higher. None of the planting should have been visible during the daylight low tides of June 25 and June 26, 2019 because the lowest tides were +3.6 on those two days.

We request that the County confirm these findings and if they are found to be accurate, require ChangMook Sohn to pull back his planting to the stated tidal elevation allowed by his Thurston County permit.

4. #7 of the MDNS states: "Weekly patrols of tidelands within a half mile of the geoduck farm shall be conducted. During those patrols, all geoduck debris must be collected regardless of its source."

Access to private tidelands in Thurston County has often been shared within neighborhood communities of shoreline property owners. However, with the advent of commercial shellfish farming on private tidelands, the community sharing of access to the tidelands has changed. The County, as in the Sohn MDNS, is granting access to unknown parties to routinely trespass on private property. This would be unheard of for upland properties and it should be no different for tideland properties. Shellfish aquaculture employees must refrain from trespassing on tidelands belonging to owners who do not choose to allow access. For owners who do choose to allow access, the County should get a signed letter of agreement from each participating property owner stating that unknown parties will be coming on to their private property and waiving any liability of the property owner. The County should also sign this agreement. On request of anyone in the tideland community within a half mile of the operation, the County should do background checks and train all such persons who will be going onto private property to the satisfaction of each individual property owner. This also assumes that Thurston County knows specifically where tideland property lines occur and can transmit that specific information to those it is granting access to so that those grantees will not be in danger of trespassing on non-participating property owners.

5. Paragraph Two of the Description of Proposal of the MDNS state: "...4-6 inch diameter PVC pipe will be placed on end and buried in the substrate with 2-3 inches exposed."

Although a few of the tubes on the Sohn operation are only 2-3 inches above the sediment, the vast majority of tubes average 5-6 inches above the sediment and many are higher, a few as much as 8-9 inches. Please see photos below taken with a measuring tape in view.
June 18, 2019. Photos of PVC tube heights on ChangMook Sohn geoduck operation in Zangle Cove.

There may be additional violations of the permit requirements related to this operation, however, we believe the above violations are sufficiently flagrant to require that the operation be stopped, and all tubes pulled until the violations are remedied.

Thurston County issued the permit for this operation and is responsible for its enforcement. Therefore, we request that Thurston County take immediate action to ensure compliance with every requirement of the permit and that the County engage in ongoing inspection to ensure compliance not only of Mr. Sohn’s operation, but all commercial geoduck and other shellfish operations within the County for similar lack of compliance with permit requirements.

We look forward to your response.

Sincerely,

Kathryn and Patrick Townsend
Olympia, Washington

Attachments:
5/3/2016 Thurston County Mitigated Determination of Nonsignificance, Project Number 2014108800, ChangMook Sohn, 930 76th Avenue NE, Olympia, WA 98506
PROTECT OUR SHORELINE NEWS

Our mission is to protect the habitat of Puget Sound tidelands from the underregulated expansion of new and intensive shellfish aquaculture methods. These methods were never anticipated when the Shoreline Management Act was passed. They are transforming the natural tideland ecosystems in Puget Sound and are resulting in a fractured shoreline habitat. In South Puget Sound much of this has been done with few if any meaningful shoreline permits and with limited public input. It is exactly what the Shoreline Management Act was intended to prevent.

Get involved and contact your elected officials to let them you do not support aquaculture’s industrial transformation of Puget Sound’s tidelands.

Governor Inslee:
http://www.governor.wa.gov/contact/contact/send-gov-inslee-e-message

Legislative and Congressional contacts:
http://app.leg.wa.gov/DistrictFinder/

Additional information
Twitter: http://www.twitter.com/protectourshore
Facebook: https://www.facebook.com/ProtectOurShore/

SUNDAY, SEPTEMBER 15, 2019

Burley Lagoon Residents Complain of Putrid Smell, Clams Die Off: A "Preferred Use" of the tidelands?

"Particularly pungent smells
may come from the beach when a common type of seaweed
known as sea lettuce decays
in an environment with low dissolved oxygen."
(Department of Ecology, "Focus on Saltwater Beach Odors")

Promoting and enhancing the public interest or industrial scale aquaculture?

After weeks of residents along the shoreline of Burley Lagoon complaining about a putrid smell so strong it has prevented many from enjoying the air outside of their homes, it appears there has been a clam die off to go along with it. To hear Taylor Shellfish discuss their "rights" under the Shoreline Management Act, the state and counties are to do nothing but promote and enhance aquaculture, prioritizing it over all other water dependent uses, believing it is in the statewide interest to do so. Even if it means what Burley Lagoon is experiencing.
The smell of politics.
Pierce County responded sources of the smell could be "Ulva" (aka Sea Lettuce, a native vegetative seaweed) so thick it smells of rotten eggs as it decays. Another source mentioned could be leaking septic fields. Not mentioned is that it could also be the carrying capacity of Burley Lagoon has been exceeded by Taylor Shellfish's intensive and industrial level of planting of clams and oysters, resulting in shellfish rotting as they die off, unable to survive due to the density of planting. Or it could be a combination of these or other things. Whatever it is, the stench is overwhelming and impacts enjoyment and use of the shoreline, whether a resident or a member of the public trying to enjoy the aquatic environment in Pierce County.

Maybe the nets just need
a "good industrial scraping".

(Samish Bay, WA)
Do structures in the tidelands need bigger machines on the tidelands?

Long time residents of Burley Lagoon have stated they do not recall a stench so intense in all of their years living there, some for decades. What they also do not recall are the number of "predator nets" which Taylor Shellfish uses to keep native species from feeding off of the sediments, or the expansive area covered. Nor do they recall the intensity of planting which is occurring, whether it be clams or nonnative Pacific oysters. As seen in the Samish Bay photo above, in order to deal with the heavy growth on their predator nets, Taylor partnered with New Holland and implemented the use of a tractor and a "street sweeper" to clear the nets there of Sea Lettuce so thick it prevents clams below from surviving. Algae which apparently exists in higher densities due to this artificial structure which has been placed over the tidelands of Burley Lagoon and on oysters planted in high densities.

It's not rocket science. It's "Ecosystem Services".

AUSTR 2017

DUANE FAGERGREN

Under this mat of green macro algae (Enteromorpha sp) lies this year's crop of yearling single Pacifics. The oysters consume phytoplankton, and excrete feces, pseudo feces, and ammonia in a mixture that serves to fertilize this luxurious crop of seaweed. The lush crop also provides habitat for crab (graceful crabs mostly) and fish (shiner perch, stag horn sculpin, and bay pipefish).

The downside of this heavy growth is a mat that makes oysters grow slower, clams come to the surface of the beach and can't dig themselves back in, and likely oxygen debt as the algae naturally dies and decomposes.

Oysters poop, seaweed grows, clams die. Ecosystem services at work.

As noted in an August 2017 "Ecosystem Services" winning picture, one source of the problem is directly related to oyster feces, their pseudo feces, associated ammonia, and shell surface area provided by high density planting of oysters. Oysters poop and provide "fertilizer". On the surface of those shells macro algae attaches and thrives on the "nutrients" expelled by the nonnative Pacific oysters. That growth is so intense oyster growth slows and clams rise to the surface. Summertime low tides and summertime heat
promote decay and death. Smells emanate. Because of aquaculture. It’s not rocket science. Calling it "ecosystem services" deflects attention from dealing with the problem created.

This is not "enhancing" the public interest
and is exactly what the Shoreline Management Act
was designed to prevent from happening
to Puget Sound tidelands.

(Read **RCW 98.58.020** to see intended preferences of the SMA)

"**promote and enhance the public interest**" - not industrial aquaculture
The Shoreline Management Act was created in response to industrial levels of activities impacting the shorelines of Puget Sound. It was not created to promote the industrial level of activities the shellfish industry has since evolved into. Activities and impacts which lower the statewide ability to enjoy the shorelines of Washington State. The Pierce County Council, in reluctantly passing their updated Shoreline Master Program, listened to Taylor Shellfish complain, even after additional changes were made to accommodate their industry, that more needs to be done in order for their industry to profit from tidelands and public waters.
(Read August 28 letter from attorneys for Taylor Shellfish and the Foss family’s North Bay Partners here: [https://app.box.com/s/naowpgwm4mjp7b41tq11afy33iieqja](https://app.box.com/s/naowpgwm4mjp7b41tq11afy33iieqja))

Yes - Washington needs to change its laws.
"Maddening": Banning plastic straws and promoting PVC tubes in Puget Sound.

Most of what is noted in the Taylor/North Bay letter was addressed by Pierce County, yet still, Diane Cooper rose to state before the public and the council, not enough had been done for them. In response, most council members agreed, the state needs to change the law if, in fact, that is what Taylor Shellfish and others are relying on to promote their industry over other water dependent uses. [Read what the legislators who passed the SMA intended, here: https://app.leg.wa.gov/RCW/default.aspx?cite=90.58.020, where it states counties, in developing their Shoreline Master Programs:

shall give preference to uses in the following order of preference which:
(1) Recognize and protect the statewide interest over local interest;
(2) Preserve the natural character of the shoreline;
(3) Result in long term over short term benefit;
(4) Protect the resources and ecology of the shoreline;
(5) Increase public access to publicly owned areas of the shorelines;
(6) Increase recreational opportunities for the public in the shoreline;
(7) Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

Get involved.

Use of structures and methods which create an environment from which odors emanate that are so strong as to prevent the public's enjoyment of the tidelands and shorelines is only one example showing how this industry is out of control. Pierce County agrees that laws promoting this need to change and will become active in the state to change this lopsided interpretation of a law intended benefit all in the state, not just a few corporations.

POSTED BY PROTECT OUR SHORELINE AT 4:55 PM
EMAIL THISBLOGTHISHARE TO TWITTERSHARE TO FACEBOOKSHARE TO PINTEREST
LABELS: GEODUCK, PIERCE COUNTY SHORELINE MASTER PROGRAM UPDATE, PVC, SHORELINE MANAGEMENT ACT, TAYLOR SHELLFISH
PROTECT OUR SHORELINE NEWS

Our mission is to protect the habitat of Puget Sound tidal lands from the underregulated expansion of new and intensive shellfish aquaculture methods. These methods were never anticipated when the Shoreline Management Act was passed. They are transforming the natural tideland ecosystems in Puget Sound and are resulting in a fractured shoreline habitat. In South Puget Sound much of this has been done with few if any meaningful shoreline permits and with limited public input. It is exactly what the Shoreline Management Act was intended to prevent.

Get involved and contact your elected officials to let them you do not support aquaculture's industrial transformation of Puget Sound's tidelands.

Government Inslee:
http://www.governor.wa.gov/contact/contact/send-gov-inslee-e-message
Legislative and Congressional contacts:
http://app.leg.wa.gov/DistrictFinder/

Additional information
Twitter: http://www.twitter.com/protectourshore
Facebook: https://www.facebook.com/ProtectOurShore/

MONDAY, SEPTEMBER 16, 2019

Taylor Shellfish Says Clam Die-off in Burley Lagoon from Toxic Algae

"Based on recent water samples, there is a toxic algae bloom in Burley Lagoon."
Taylor Shellfish, September 15

Testing and reporting to...?
After weeks of complaints over a putrid smell in Burley Lagoon and large areas of dead clams rising found on the surface of sediments, an email was sent to Taylor Shellfish asking if perhaps the cause may be that Burley Lagoon's carrying capacity has been exceeded. In response, Taylor Shellfish stated water samples had shown there was a toxic algae bloom occurring in Burley Lagoon. It did not appear from the email any residents had been notified of the toxic algae.

"The stench of dead clams nearly knocked him over," he said.
In July.

The stench of dead clams nearly knocked him over, he said.

Burley Lagoon? No, Rocky Bay.

The stench of dead clams.
Toxic algae blooms have impacted high density clam plantings by Taylor Shellfish elsewhere in Puget Sound this year. In July, residents near Rocky Bay also complained of a similar "stench". In the case of Rocky Bay, it was found large areas with clams planted in high densities by Taylor Shellfish had also risen to the surface and died. The Key Peninsula News wrote about the event August 1. (Read article here: https://keypennews.com/rocky-bay-algae-bloom-suspected-in-clam-die-off)

This looks and smells very familiar.

This canary flew around for a long time.
In the September 15 email, Taylor noted the toxic algae is a "canary" of some sort, indicating something. That sampling shows the algae is still present months later, and shellfish planted in high densities in the tidal lands of Puget Sound are still dying, should motivate health officials to do something more than they are. Before shellfish with toxins make their way from tidal lands to the public.

POSTED BY PROTECT OUR SHORELINE AT 8:18 AM
LABELS: BURLEY LAGOON, PUGET SOUND, SHELLFISH, TOXIC ALGAE

To view the online posting of September 16, 2019, go to this link:

Frequently Asked Questions:
Industrial Shellfish Aquaculture in Puget Sound
http://www.caseinlet.org/FAQ_s.php

Q. The shellfish aquaculture industry claims that shellfish and geoduck aquaculture is good for the environment. Is this true?

A. No, this is not true. In reality, the shellfish industry is responsible for damage to the environment. Depletion of native species, introduction of harmful invasives and the spread of alien organisms, the killing and hazing of shorebirds, the use of chemical poisons to kill native burrowing shrimp and disruption to fish habitat are just a few examples of environmental damage. The shellfish industry commonly uses out of context self serving pseudo science to justify its harmful practices.

Q. Is shellfish aquaculture sustainable?

A. It depends on the practice and scale of the operation. Based on the rapid expansion and intensity of techniques of shellfish aquaculture in South Puget Sound, many new techniques are probably not sustainable by any definition. Generally, 'sustainable' means that the activity is capable of being continued without damage to the environment. Other definitions relate to environmental stewardship, but also to the social implications. Does the activity interfere with the commercial or recreational use of others? Does the activity reduce the scope for future users to benefit from the commercial, environmental or recreational use of the area? Does the activity alter or diminish the environment and biodiversity? These questions also relate to the issue of sustainability.

95 percent of geoducks are shipped via air freight to Asian markets. This carbon footprint precludes these commercial activities as "green" or "sustainable".

From The Association for Responsible Shellfish Farming, Definition of Sustainability:
"There are various forms of sustainability but, in essence, these condense around concepts relating to stewardship. It is perfectly acceptable to exploit the environment, provided it is done in a way which:

a. does not significantly interfere with the commercial or amenity use of that environment by others (although those others must also utilize the environment in a sustainable manner to preserve equity);
b. does not reduce the scope for future users to benefit from the environmental resource; and
c. does not significantly alter or diminish environmental quality and biodiversity per se."


Q. The shellfish industry claims that shellfish aquaculture "provides ecological functions" and "improves water quality". Is this true?

A. No, this is false and misleading industry propaganda and public relations fraud. Shellfish and geoducks filter and consume phytoplankton and detritus, and excrete feces and pseudofeces as waste. Phytoplankton is an important aquatic plant and nutrient for a number of other aquatic species and is naturally present in the marine environment. The shellfish industry actually wants to install their operations in areas of planktonic abundance. In the wild, geoduck and other shellfish are stimulated to spawn due to increased water temperature and increased plankton blooms. So the argument: "shellfish clean the water" or "shellfish provide ecological services" are totally false and misleading statements. Removing phytoplankton from the water column is not "cleaning" the water at all. Shellfish filter everything out of the water column, including crab zoeas and fish eggs, and although this may temporarily clarify the water in the area of the shellfish farm, this can be harmful to other species.

The shellfish industry's own scientific studies (Totten mussel raft EIS) indicate that shellfish aquaculture actually adds nitrogen to the water column, thereby increasing phytoplankton production and substantially decreasing dissolved oxygen by as far as 200 meters away, so the industry's claim of improving water quality is utterly false. Mussel rafts, for example, actually contribute to nitrogen loading and increased phytoplankton blooms and anoxic/hypoxic or eutrophic/low oxygen conditions that can lead to fish kills.

According to a study by Pietros and Rice, in order for farmed shellfish to "clean the water", filtration rates must exceed phytoplankton regeneration. In this particular mesocosm study, this does not occur. In fact, phytoplankton production is actually
stimulated from the wastes produced from shellfish farming.

No studies currently exist specific to South Puget Sound to corroborate the shellfish industry claim that farmed shellfish "clean" the water or are beneficial in any way. In Willapa Bay, the shellfish industry has historically used Carbaryl, a chemical pesticide, to kill native burrowing shrimp to enhance oyster production. Spraying Carbaryl on the tidelands also negatively affects salmon, steelhead and crab populations, and negatively impacts water quality.

The shellfish industry here in Puget Sound commonly uses studies by Roger Newell in Chesapeake Bay to claim that shellfish aquaculture is beneficial. In Chesapeake Bay, an entirely different ecosystem than Puget Sound, the oyster reefs have been over harvested to less than one percent of historic levels. Newell's studies address restoration of the oyster reefs in Chesapeake Bay, where reserves are set up and harvest is restricted. Newell does not address aquaculture in Puget Sound. The shellfish industry uses these studies disingenuously to mislead and manipulate government agencies and legislators to affect policy decisions in favor of the shellfish industry.

Q. Then why does the shellfish aquaculture industry claim themselves as champions of clean water?

A. The shellfish industry is referring to pathogens, such as fecal coliform bacteria. The shellfish industry cannot sell shellfish infected with pathogens from runoff or sewage contamination and is thus required to help monitor water quality regularly. Typically, the shellfish industry establishes shellfish aquaculture districts with local governments requiring taxpayers to fund sewer systems or runoff containment and maintenance to protect their commercial interests.

Q. The shellfish and geoduck industry promotes themselves as environmental heroes. Are they considerate of fish and bird habitat?

A. No, absolutely not. They're interested in making money as a business by exploiting Puget Sound's tidelands. If they were interested in fish, bird and other wildlife habitat of the intertidal, they would have waited to expand operations until baseline studies had been completed. The shellfish industry removes and destroys eelgrass, sand dollars, starfish, and many other important native species and organisms that get in the way of their profits. The shellfish industry is lying when they assert that they are environmentalists. They're only interested in the environment to the extent that it benefits them.

Q. Why do some environmental groups refuse to condemn the harmful practices of the shellfish industry?
A. Many NGO's, or so called "non-profit environmental groups" accept money and large donations from the shellfish industry. Groups such as People for Puget Sound, Puget Soundkeepers Alliance, Surfrider, Futurewise, the Nature Conservancy and the Puget Sound Restoration Fund all regularly take money or free shellfish from the shellfish industry. Some groups, such as the Skagit Conservation Education Alliance, were started by the shellfish industry to promote shellfish interests. Others, like the Puget Sound Restoration Fund, operate essentially as a public relations tool of the shellfish industry.

From the document "A Challenge to Conservationists": "...NGO's entrusted with the enormous responsibility of defending the planet's natural ecosystems against the encroachment of the modern world in its most destructive manifestations have increasingly partnered with -- and become dependent on -- many of the corporations and governments that are most aggressively making this encroachment..."

Q. What about Endangered Species Listed salmon and steelhead?

A. The South Puget Sound Salmon Recovery Group lists shellfish aquaculture as a "stressor" to salmon populations. The National Marine Fisheries Service (NMFS) and the Army Corps. of Engineers state that shellfish aquaculture is likely to adversely affect essential fish habitat for all fish, and to adversely affect critical habitat for endangered Puget Sound Chinook salmon and Hood Canal Summer-run Chum salmon. Steelhead habitat has not yet been determined. Ironically, the NMFS is a division of NOAA, a branch of the Department of Commerce, which is actively engaged in promoting aquaculture and funding various research and development projects that benefit the shellfish aquaculture industry.

Q. Is geoduck aquaculture consistent with the Endangered Species Act?

A. No, intertidal geoduck aquaculture is not consistent with the federal Endangered Species Act of 1973. As stated in section 2 of the act, it was designed to protect critically imperiled species from extinction as a consequence of economic growth and development undertaken by adequate concern and conservation, and to protect the ecosystems on which these species depend. Chinook, Coho and Steelhead are all listed under the ESA in Puget Sound. American bald eagles are still listed as a species of concern. The Puget Sound orca is also ESA listed and is dependent on increased salmon runs.

Q. Is geoduck aquaculture consistent with the Magnuson-Stevens Act?

A. No, intertidal geoduck aquaculture is not consistent with the federal Magnuson-
Stevens Fishery Conservation and Management Act of 1996. The underlying principle of the act is to promote the long term protection of essential fish habitat and to ensure the effective conservation and scientific understanding of recreational and commercial fishery resources. It is documented that some methods of shellfish aquaculture negatively impact Essential Fish Habitat (EFH) for salmon. It is documented that geoduck aquaculture negatively impacts eelgrass. We also know that shellfish farmers have removed eelgrass and sand dollars to establish geoduck sites, and that once these sites have been established for geoducks, the eelgrass and sand dollars will not return and can no longer survive in these areas. Eelgrass is EFH and is federally protected, and the Washington State Department of Ecology has a 'no net loss' policy on eelgrass.

Q. Is geoduck aquaculture consistent with the Shoreline Management Act?

A. No, intertidal geoduck aquaculture is not consistent with Washington State's Shoreline Management Act of 1971. The overarching policy of the SMA is that the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible. One of the primary goals of the SMA is to preserve the natural character of the shoreline. Priority is to be given to developments that provide opportunities for substantial numbers of people to enjoy the shorelines of the state. The SMA also implements the Public Trust Doctrine, limiting the public and private use of tidelands to protect the public's right to use the water. Last year, the Pierce County Hearings Examiner (Taylor/Foss vs. Pierce County) concluded that geoduck farms are indeed a structure, that they obstruct public use of the water, and that they cause habitat disruption. According to the SMA, aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, adversely impact eelgrass and macroalgae, significantly conflict with navigation and other water-dependent uses or significantly impact the aesthetic qualities of the shoreline.

Q. How does shellfish aquaculture impact salmon and fish habitat.

A. The shellfish industry uses plastic mesh bags, PVC pipes, and large anti-predator canopy nets to cover intertidal substrata areas. Salmon, sole, flounder, and a large number of other aquatic species use the natural functions of this habitat for feeding. Endangered Chinook salmon and flounder both have similar benthic diets, and some of these prey taxa are depressed by tubes and nets. Conversely, tubes and nets can provide a surface for algae growth and production of epibenthic prey, but it is not known if salmon will feed over geoduck sites. It is also not known how geoduck structures affect migration patterns of salmon, or the effects of the constant ongoing removal/replacement of tubes, nets and bags.

Q. Is intertidal shellfish aquaculture legal in Puget Sound?
A. No, technically most methods that we see today, including geoduck aquaculture, are not legal. But because of the industry's long economic and cultural history, decades without regulations, corruption, feeble administration and misinterpretation of the Shoreline Management Act (SMA), plus very little enforcement efforts, it has been allowed to perpetuate largely unchecked.

The SMA is state law. The over-arching policy of the SMA is to preserve the physical and aesthetic qualities of natural shorelines. The SMA gives priority to developments related to residential and recreational uses over aquaculture as a preferred use. Aquaculture may only be considered a preferred use if it does not interfere with residential and recreational uses, and if it does not interfere with the natural functions of the ecosystem.

The Shoreline Management Act also states:

"Alterations of the natural conditions of the shorelines of the state, in those limited instances when authorized, shall be given priority for...development that will provide an opportunity for substantial numbers of people to enjoy the shorelines of the state."

This statement clearly indicates that shoreline alterations will be (1), limited in instance, and (2), prioritized toward recreational uses.

In 1971 when the SMA was drafted and approved by voters, shellfish aquaculture in Puget Sound was localized and confined primarily to bottom oyster culture. Today, it's millions of plastic tubes, plastic mesh bags, huge canopy predator exclusion nets, barges, pumps, hoses and nozzles, an unprecedented amount of anthropogenic activity and disturbances to the ecosystem. This is not consistent with the SMA on several levels. It does not preserve the natural character of the shoreline. It does not protect the resources and ecology of the shoreline. It decreases recreational opportunities for the public in the shoreline area. The public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines is not being preserved. It is an alteration of the natural condition of the shoreline.

It is clear that intertidal geoduck aquaculture is in violation of the Shoreline Management Act. It is not a "reasonable or appropriate use". It does not "promote and enhance the public interest". It is contrary to the state's policy of "protecting against adverse effects to the waters of the state and their aquatic life". It is not a preferred use consistent with prevention of damage to the environment. It does not meet the "no net loss of ecosystem function" criterion.
Intertidal geoduck aquaculture adversely impacts eelgrass, depresses key prey invertebrates important to endangered salmon, disrupts resident and migratory birds including bald eagles, and significantly impacts the aesthetic qualities of the shoreline.

The Public Trust Doctrine is not statutory law, but is an ancient legal principle that certain resources are for public use, and that the government is required to maintain those resources for the public’s reasonable use. The doctrine holds that the land between the tides and under navigable water is inalienably dedicated to public use. This includes the biological resources contained within and dependent on that water. A whole string of court decisions, both at the federal and state levels, have confirmed its validity for the present day.

Intertidal shellfish aquaculture negatively impacts public resources and restricts navigation and public access in violation of the Public Trust Doctrine.

The Precautionary Principle is a moral principle which states that if an action or policy might cause severe or irreversible harm to the public or to the environment, in the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who would advocate taking the action, and that a lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Shellfish aquaculture is also outside the moral compass of the Precautionary Principle.

Q. The shellfish industry claims that shellfish aquaculture is a 'preferred use' of the shoreline according to the Shoreline Management Act. Is this true?

A. No, most shellfish aquaculture techniques are not a 'preferred use'. The activity must be environmentally neutral to qualify as preferred under state guidelines. This is not the case with geoduck tubes, predator exclusion nets, grow bags, off bottom culture and 'kiddie pool' geoduck incubators. Most other techniques also disrupt ecological processes to some extent.

The SMA states: "The interests of all the people shall be paramount in the management of shorelines of statewide significance." "Preferred" uses include single family residences, ports, shoreline recreational uses, water dependent industrial and commercial developments and other developments that provide public access opportunities. To the maximum extent possible, the shorelines should be reserved for "water-oriented" uses, including "water-dependent", "water-related" and "water-enjoyment" uses. Preferred uses for Shorelines of Statewide Significance, in order of priority, are to "recognize and protect the state wide
interest over local interest; preserve the natural character of the shoreline; result in long term over short term benefit; protect the resources and ecology of the shoreline; increase public access to publicly owned shoreline areas; and increase recreational opportunities for the public in the shoreline area.” The overarching policy is that “the public’s opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally. “Alterations of the natural conditions of the shorelines of the state, in those limited instances when authorized, shall be given priority for...development that will provide an opportunity for substantial numbers of people to enjoy the shorelines of the state.” The SMA also implements the common law Public Trust Doctrine. The essence of this court doctrine is that the waters of the state are a public resource for the purposes of navigation, conducting commerce, fishing, recreation and similar uses and that this trust is not invalidated by private ownership of the underlying land. The doctrine limits public and private use of tidelands and other shorelands to protect to public's right to use the waters of the state.

The SMA guidelines address aquaculture generally but do not have provisions related to geoduck specifically, as the SMA was drafted before the advent of intertidal geoduck aquaculture techniques. The guidelines state: “Aquaculture is the culture or farming of food fish, shellfish, or other aquatic plants and animals. This activity is of statewide interest. Properly managed, it can result in long-term over short-term benefit and can protect the resources and ecology of the shoreline. Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area. Local government should consider local ecological conditions and provide limits and conditions to assure appropriate compatible types of aquaculture for the local conditions as necessary to assure no net loss of ecological functions. Potential locations for aquaculture are relatively restricted due to specific requirements for water quality, temperature, flows, oxygen content, adjacent land uses, wind protection, commercial navigation, and, in marine waters, salinity. The technology associated with some forms of present-day aquaculture is still in its formative stages and experimental. Local shoreline master programs should therefore recognize the necessity for some latitude in the development of this use as well as its potential impact on existing uses and natural systems. Aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, adversely impact eelgrass and macroalgae, or significantly conflict with navigation and other water-dependent uses. Aquacultural facilities should be designed and located so as not to spread disease to native aquatic life, establish new nonnative species which cause significant ecological impacts, or significantly impact the aesthetic qualities of the shoreline. Impacts to ecological functions shall be mitigated according to the mitigation sequence described in WAC 173-26-020.” WAC 173-26-241(3)(b)
Joan K. Thomas, of the Washington Environmental Council (WEC) and one of the drafters of the SMA, spoke on the history of the act (page 16) at the 1991 SMA Symposium. The WEC, along with citizen and environmental groups, were instrumental in the passage of the SMA, and in getting the SMA on the ballot. In 1970, these groups had gathered over 160,000 signatures in 10 weeks. The earlier versions of the act also provided for direct citizen enforcement.

Joan K. Thomas stated at the 1991 symposium:

“I have thought about this carefully over the years as I have seen my expectations frustrated. We have lost the full potential of the SMA to protect a valuable resource through fainthearted administration.”

“When the SMA was written in 1971, aquaculture meant oysters and clams and one salmon raising operation. This activity was recognized and protected as water-dependent. I do not read the original intent or the original guidelines to promote the industry as we know it today. In fact, the guidelines specified that navigational access not be restricted and that visual access of upland owners be considered. Aquaculture has become a sore point between local governments and the Department of Ecology – a fraying of the partnership.”

Brian Boyle, 1991 Public Lands Commissioner, spoke on the Public Trust Doctrine (page 111):

“For the average family, a walk on the beach is a free and easy amusement. It’s something most of us take quite for granted. To a public land manager, however, that same walk represents the exercise of a right with roots that can be traced back through the foundation of our state, to the foundation of our republic, and beyond that to the laws of England and the statutes of the Roman Empire.”

“Our walk on the beach is, in fact, defended by a legal doctrine more than 1,500 years old – a doctrine that holds that the land between the tides and under navigable water is inalienably dedicated to public use. This is the famous public trust doctrine, and a whole string of court decisions, both at the federal and state levels, have confirmed its validity for the present day.”

“Our stewardship has two separate but related goals. The first is the preservation of values inherent in the public trust – waters where we can fish and swim and ecologically healthy bottom lands and beaches. Although much of this effort is carried out by other state agencies, including the departments of Ecology and Fisheries and Wildlife, there is an important difference in emphasis and authority. Those agencies rely on the police power of the state, which is subject to a
number of constraints when it affects private property."

“For example, when the state limits what private property owners can do with their property, as in zoning restrictions, property owners may object that the state has taken some part of the values of their property without compensation, which is a violation of the constitution. But the situation is very different when the state acts to protect its own property, or the property rights it holds in trust for the people under the public trust doctrine. Potentially, this is a much more powerful means of securing public rights, against which the “taking” argument has no effect. The Washington Supreme Court held in the Orion case that private owners can expect no economic benefit from their lands if obtaining that benefit deprives the public of rights it holds under the public trust doctrine.”

Q. Is shellfish aquaculture documented as a stressor to fish habitat and salmon populations?

A. Yes. For one example please: Click here.

Q. What about the social disruptions caused by shellfish aquaculture expanding into non traditional and residential areas?

A. Profits are the primary goal of the expanding shellfish/geoduck industry in Puget Sound.

Q. What about the loss of traditional and recreational sport fishing grounds? Does the shellfish industry respond to this issue?

A. No. There has not been any consideration given to this issue by the shellfish aquaculture industry. The industry uses non-scientific opinion as propaganda to suggest shellfish aquaculture enhances sport fishing.

Q. Does the plastic tubes (PVC - polyvinyl chloride) used in geoduck aquaculture contain Bisphenol A (BPA) or Phthalates?

A. Yes, the plastic PVC pipes used in geoduck aquaculture contain Phthalates. According to a University of Washington study: 'Plastics: Possible Impacts on Children's Health', Pediatric Environmental Health Specialty Units: "Phthalates are man-made chemicals used as a 'plasticizer' in a variety of industrial and commonly used products. These chemicals are anti-androgenic, and can adversely impact androgen sensitive tissues during specific windows of development."

The use of PVC is banned in New York State and elsewhere because of its negative
environmental impacts. Yet the shellfish industry places eight miles, or 150,000 pounds (75 tons) of PVC plastic PER ACRE of Puget Sound tidelands for geoduck aquaculture. It then weathers and wears away directly into the environment. PVC pipe was designed for indoor or underground construction use, not for outdoor use in the aquatic environment where it is exposed to UV light, wind and wave erosion. No studies have been done to assess the long or short term impacts of this unprecedented amount of PVC plastics, literally millions of pounds, into the nearshore environment of Puget Sound.

In 1987, Congress enacted the 'Marine Plastic Pollution Research and Control Act', which is intended to reduce plastics in the marine environment.

Throughout its entire life cycle, from manufacturing to disposal, PVC has high environmental costs. It contains a high percentage of chlorine, is made with the carcinogen vinyl chloride, plus dioxin and ethylene dichloride are by-products of its manufacture. PVC is not readily recyclable and when incinerated releases both the carcinogen dioxin and hydrogen chloride gas.

Q. How many companies are pursuing geoduck aquaculture in South Puget Sound?

A. Primarily five: Taylor Shellfish, Seattle Shellfish, Allen Shellfish, Arcadia Shellfish and Chelsea Shellfish. Additionally, the Pacific Coast Shellfish Growers Association, the Washington State Department of Natural Resources, and various other private, state, county and federal agencies work to assist the shellfish aquaculture industry in expanding into inappropriate areas of South Puget Sound.

Q. Is geoduck farmed in its natural habitat?

A. No, geoduck is mainly a subtidal animal. Geoduck is farmed in the intertidal zone using plastic PVC pipes and nylon nets for predator exclusion. Geoducks cannot grow in the intertidal without pipes or nets.

Q. What about natural densities? Are geoduck farmed in natural densities as they occur in the subtidal?

A. No, absolutely not. Not only are geoducks farmed in the intertidal, which is not their natural habitat, they are farmed in densities that are many times their densities in the wild.

Q. Has the Washington State Department of Natural Resources done a good job of
managing the subtidal geoduck harvest?

A. No. Areas have been overfished and harvest boundaries have been violated on a number of subtidal tracts.

Q. Are geoducks an aphrodisiac or do they have properties of male enhancement?

A. No, absolutely not. Some Asian cultures believe this is the case because of the geoduck's profound phallic appearance.

Q. Are geoducks a valuable food source.

A. No. Salmon has three times the calories, twice the protein, and five times the healthy Omega 3's as geoduck, but at one third the price.

Q. Why is geoduck so expensive?

A. The demand is driven by the false cultural belief that geoducks have properties of aphrodisia. More than 95% of geoduck is sold to Asian markets.

Q. The shellfish aquaculture industry claims that geoduck farming is good for the economy. Is this true?

A. No, this statement has not been quantified or substantiated. Because geoduck are largely exported, sales and excise taxes are avoided, depriving Washington state and Puget Sound counties of significant revenues. Since tidelands are taxed at only $3. per acre, substantial tax revenues to Puget Sound counties are avoided. Yet the shellfish industry's clean water initiatives, in which they gain financially, cause great expenses to be incurred by taxpayers in lieu of other programs. The truth is: only a handful of individuals stand to gain substantially from geoduck aquaculture.

Q. What about jobs?

A. The shellfish industry claims to provide about 2,000 family wage jobs in Washington State. For some perspective, the tourism industry in Washington State provides about 150,000 jobs.

Q. Does shellfish aquaculture help balance the seafood trade imbalance and the overall trade deficit.

A. The U.S. exports over 70% of its seafood products to other countries while importing about 80% of seafood from foreign countries; primarily
China. We export our high quality seafood and import cheaper farmed seafood products to consume here. This is a business and policy issue/problem that cannot ever be solved by exporting our shellfish overseas. Click here for video.

Q. What about the shellfish industry claim that shellfish aquaculture provides healthy protein for a growing population?

A. This is typical false propaganda. Shellfish are a luxury food, and as such will never be a staple protein source. Six medium sized oysters contain about the same amount of protein as one egg. Six medium oysters retail for about $5 or $6 dollars, compared to about .23 cents for one egg - a difference in price of about 95 percent. Oysters and other shellfish are a luxury item that will never be found at the local food bank, nor will they ever be a viable protein source for feeding the masses. The shellfish industry is not about an altruistic desire for clean water or feeding hungry people. The shellfish industry wants to expand for the purposes of increasing profits at the expense of the nearshore ecosystem and public rights.

Shellfish are not necessarily a "healthy" food either. Outbreaks of paralytic shellfish poisoning are relatively common, as is vibrio vulnificus in oysters. Vibrio is one of the most deadly food borne illnesses known, killing half of all people that come into contact with it. Oysters are number 4 on the FDA's top ten list of riskiest foods.

Q. Why is the shellfish aquaculture industry moving into traditional and historic recreational and residential areas of South Sound?

A. Money and greed. The South Sound has optimum conditions for geoduck aquaculture: clean pristine waters, abundance of planktonic nutrients, suitable intertidal substrate, proper salinity and proximity to processing facilities.

Q. Has the government of British Columbia, Canada, banned new intertidal geoduck aquaculture?

A. Yes. The B.C. Ministry of Agriculture and Lands used to state that this was: "due to the lack of understanding on the effects of geoduck aquaculture techniques to fish habitat". Because of pressure from the shellfish aquaculture industry, this now says: "while the policy for intertidal geoduck culture is under review".

Q. What is hypoxia?

A. 'Hypoxia' is low dissolved oxygen, or 'anoxia': absence of oxygen. It is caused by a number of factors, including an over-abundance of shellfish. Other causes: algal or plankton blooms, decaying plant and animal matter and riparian
loss. Plankton blooms can occur naturally and can be exacerbated by septic and fertilizer runoff.

Q. The shellfish aquaculture industry claims that geoduck farming improves hypoxia (low dissolved oxygen) in Puget Sound. Is this true?

A. No, this is not true and cannot be scientifically substantiated. In fact, too much geoduck can contribute to hypoxia in two ways: geoduck as aerobic consumers of oxygen, and from feces deposition increasing organic carbon levels and hence, sediment oxygen demand. Mussel rafts significantly contribute to the hypoxia problem according to the shellfish industry's own environmental assessments.

Q. Is hypoxia caused by upland development?

A. In Hood Canal, the hypoxic conditions are primarily caused by the nitrogen leached from decaying alder leaves and other deciduous trees, a result of massive clearcutting of native evergreens. Reforestation to native conifers would be the best solution to hypoxia in Hood Canal. Residential upland development (septic and fertilizer runoff) accounts for about 10% of the hypoxia problem in Hood Canal.

Q. What about oysters? Are they good for the environment?

A. Yes. A natural abundance of shellfish are important to the ecosystem. Oysters are particularly beneficial. One oyster can filter about 30 gallons of water per day. Oysters are superior at sequestering carbon and provide natural habitat to crab and other filter feeders, such as barnacles.

Q. What about invasive species?

A. The shellfish industry has introduced a number of harmful invasive species, while contributing to the near extinction of the native Olympia oyster. The Pacific oyster is an invasive species, as is the oyster drill from Japan. Mediterranean mussels are invasive, as are Manila clams. Aquaculture is the number one method of introduction of invasive species in Puget Sound. Marine invasive species are a major threat to biodiversity and have profound ecological and economic impacts.

Various forms of the Vibrio bacteria are most likely spread through human activity. In Puget Sound, some shellfish diseases can be distributed through aquaculture activities from the spread of seed from hatcheries in California or outside the Puget Sound area. Hatcheries are generally not regulated. Parasites such as Orthione griffenis are distributed through human activities and may initially take root from ballast water. Griffen's parasite threatens native mud shrimp with extinction, yet the shellfish industry continues to spray Carbaryl in
Willapa Bay to kill mud shrimp and other burrowing shrimp.

Q. Does CISA oppose all shellfish aquaculture?

A. CISA supports reasonable scale, properly sited eco-friendly shellfish culture techniques such as on bottom triploid oyster culture harvested by hand. CISA does not support the use of carbaryl or other pesticides, nor will we support culture methods that negatively impact salmon and other valuable species. CISA does not support further shellfish aquaculture expansion in Puget Sound without site specific unbiased scientific review and stakeholder participation.

Q. How can I help?

A. Call or write or email your local and state representatives. Tell them that you do not want aquaculture expanding into Puget Sound without strict environmental regulations, public participation in the regulatory process, and exhaustive and unbiased scientific review. Or email us at info@caseinlet.org with questions or comments.

CISA
www.caseinlet.org
Case Inlet Shoreline Association
3919 51st Ave Ct NW
Gig Harbor, WA 98335
Copyright 2019. Case Inlet Shoreline Association. All rights reserved.

To access links in this document, go to the online version at:
http://www.caseinlet.org/FAQ_s.php