

April 9, 2008

Pierce County
Planning and Land Services
2401 S 35th St
Tacoma, WA 98409

Attention: Natalie Kamieniecki, Teresa Lewis.

Re: SSD 608680, 608683, SD 34-07, Sewell Project Narrative-Cronk/Smith, Habitat Assessment-Pauley.

Please kindly enter my comments and all supporting documents into the record for your consideration. I would be happy to supply hard copies of any submitted documents. Thank you.

This is in response to the Sewell Project Narrative prepared by Jon Cronk and Sheldon Smith on behalf of Andrew Sewell, dated December 14th, 2007, and the Habitat Assessment Report prepared by Amberlynn Pauley for J.S Jones and Associates, Inc., also on behalf of Andrew Sewell and also dated December 14th, 2007.

My impetus is to provide factual commentary and an opposing viewpoint to the overall proposal, and to provide correction to some minor erroneous information presented in the narrative and habitat assessment. Beginning with the most important environmental issues, I will provide links to web supported documents that bolster my assertions.

Although I appreciate the efforts given here to mitigate ecological damage, and the efforts to assuage the concerns of the Dutcher Cove community, I remain convinced that this project will cause habitat damage, and should not be approved by Pierce County.

The narrative states that the Sewell Family Shellfish Farm: “will be small scale, eco-friendly...utilizing habitat conscious methods...”. However, the entire 26 acres appears to be utilized in the proposal, including 14.8 acres for geoduck. This is a larger area than the 12 acre Taylor-Foss site near Joemma Beach. Unlike Joemma however, Dutcher Cove is a high habitat value pocket estuary and thus is much more susceptible to habitat damage. Additionally: “The number of farmhands on the tidelands...will not exceed 10 hired farmhands”. None of these statements suggest “small scale” or “eco-friendly” by any standard, even given the minimal rotational basis of the geoduck areas as proposed.

On page 2 of the narrative, it is stated: “Netting will be run continuously whenever possible”, and on page 4: “...netting will be placed on the beach”. PVC tubes and predator exclusion netting are known to disrupt bird, salmon and benthic habitat.

Bird habitat:

With the use of predator exclusion nets, there is also a potential impact to bird populations. Below is a picture of a juvenile bald eagle trapped in a Harstine Island geoduck farm, August, 2006. Some recreational boaters passing by eventually freed the eagle.



The photo below: stressed, exhausted juvenile eagle after being freed from the geoduck net.



There are affidavits on file (but no photos) of other similar instances involving eagles in South Sound. Both the Tahoma Audubon Society and the Sierra Club have voiced their condemnation of shellfish aquaculture and the utilization of predator exclusion nets on Puget Sound's tidelands.

Although Taylor Shellfish has said that this was an isolated incident, they now use individual nets placed over the PVC tubes, and then secured with rubber bands, rather than using 50' x 50' canopy nets. This is done only when geoduck farms are in the vicinity of eagles nests. These nets and rubber bands also cause problems for wildlife.

According to the Sewell Habitat Assessment Report, by Pauley, quote: **“A bald eagles nest is located approximately 0.5 miles south of the project area, and bald eagles have been observed perching, foraging and fishing in the mouth of Dutcher Cove”**. Exacerbating the problem: juvenile bald eagles have a tendency to lock up their talons when grabbing prey. So there is some probability that predator exclusion nets in Dutcher Cove could negatively impact this eagle population. Bald eagles are currently [listed by the USFWS](#) as a species of concern.

Salmon habitat:

The Canadian Science Advisory Secretariat (CSAS), in a [review of the environmental impacts of intertidal shellfish aquaculture in Baynes Sound](#), 2001, page 44: **“Habitat modification and the covering of the substrate with predator exclusion nets may thus adversely impact the production of [harpacticoid copepods](#) and other [epibenthic](#) organisms, and hence adversely impact the successful feeding of salmon rearing in the area”**.

<http://govdocs.aquake.org/cgi/reprint/2004/410/4100110.pdf>

Benthic habitat:

[Influence of Intertidal Aquaculture on Benthic Communities in Pacific Northwest Estuaries](#): Scales of Disturbance, Simenstad/Fresh, 1995, page 23 of the PDF (report page 65). **“Management strategies that fail to consider the tolerance of estuaries to [anthropogenic](#) disturbance, such as that posed by intensive aquaculture, may well threaten the sustainability of estuarine resources and ecosystem processes upon which coastal economies depend. [Estuaries](#) have a critical role in the life histories of many economically and ecologically important animals. Salmon, herring, smelt, crab and flatfish feed in Pacific Northwest estuaries...and several species of migratory waterfowl and shorebirds feed on the large invertebrate production that occurs on the mudflats...”**. **“Growth and survival of animals in estuaries not only depends on specific habitats but on linkages between habitats and areas with the estuary.”**

http://estuariesandcoasts.org/cdrom/ESTU1995_18_1A_43_70.pdf

“The seeding of young geoducks in netted PVC tubes on the beach is likely to alter local physical and biological conditions, both those on the surface of the sediment and those in the sediment.”

[Marine Surveys and Assessments, Dethier, Leitman and Mathews, 2007.](#)

Non-natal salmonids in Dutcher Cove:

It is documented by the WDFW that Coho runs are present and listed as healthy in Dutcher Creek and Haley Creek. Chum are listed as 'potential' in Dutcher Creek. It is also documented and included in the Pauley Habitat Assessment that non-natal salmonids utilize Dutcher Cove habitat. From page 6: **“Salmonids surveyed using Case Inlet and Dutcher Cove include Chinook, Winter Coho, Winter Chum, Cutthroat, and Winter Steelhead.” “Salmonids are using the protected cove waters for feeding and resting, and Cutthroat and Coho are likely to use Dutcher Creek for spawning and freshwater portions of life history”**. Note: Puget Sound Chinook and Steelhead are currently ESA listed as threatened. Coho and Cutthroat are listed as a species of concern.

From the Pauley Assessment, page 7: **“Coho salmon are documented to spawn in Dutcher Creek, and are likely providing an important source of marine nutrient input for the riparian and upland habitats in this system”**.

Page 10: **“Coho salmon are documented in Dutcher Creek, and likely use Dutcher Cove as their rearing estuary before heading out to sea”**.

Page 11: **“Some salmon species may be using Dutcher Cove for non-spawning activity, or those species which rely on Case Inlet as a corridor and may be affected by the proposed project”**.

Adult and juvenile Chinook are utilizing Dutcher Cove habitat as a migratory corridor, for feeding, for osmoregulation and for refuge. WDFW also lists the presence of Chinook in several creeks nearby: Rocky Creek, Coulter Creek, Sherwood Creek and Huge Creek. Please see the WDFW salmonscape website for documentation.

<http://wdfw.wa.gov/mapping/salmonscape/index.html>

Also, please refer to the Puget Sound Acton Team's most recent (2005) Washington State South Sound salmon recovery report: Appendix E-11 and Figure E-11.5. This is an important and relevant document. The survey has identified South Sound's sub-basin pocket estuaries and their likely Chinook functions.

http://www.psparchives.com/publications/our_work/species/salmon/salmon_plan/Appendix%20E-11.pdf

Appendix E-11 tells us an important story. It tells us that 99 % of South Puget Sound's pocket estuaries that exist currently, WITHOUT BOTH shoreline development and aquaculture development related substrate alterations, are properly functioning Chinook habitat.

About 10 % of these pocket estuaries, WITH ONLY shoreline development, are properly functioning. Dutcher Cove is only 1 out of 3 of these 32 estuaries that are properly functioning, and is 1 out of 2 of those that have all 3 Chinook functions: feeding, osmoregulation and refuge habitat.

There are 3 pocket estuaries with aquaculture only. Of these, 2 are properly functional, and only 1 has all 3 Chinook functions. Aquaculture and shoreline development are both known habitat **stressors**. In tandem together, they become habitat killers.

Of the pocket estuaries WITH BOTH aquaculture AND shoreline development, only about 15 % are

properly functioning. Conversely, 85 % are not properly functioning or are at risk.

By combining shoreline development and shellfish aquaculture, the chances can thus be estimated then, at about 85 %, that the current high level of habitat function in Dutcher Cove will be lost to some extent. Appendix E-11 also demonstrates that there is no wisdom in bringing both shoreline development and aquaculture simultaneously to pocket estuaries. To do so is directly counter in efforts to preserve habitat, and to bring salmon populations back to sustainable levels, which are both goals of Washington State and Pierce County.

The [importance of pocket estuaries to recovering salmon](#) is well documented. Chinook and other salmonids utilize pocket estuaries to feed, hide and transition to open ocean. Other than spawning streams, there are arguably no other single hydrologic feature more important to salmon recovery than the pocket estuary. Dutcher Cove is a documented high value habitat pocket estuary. Dutcher Cove is also documented as part of an important drift cell that helps to maintain this overall habitat quality.

The survey identifies Dutcher Cove (Figure E-11.5, Box 4) in its entirety, stating: **“The small divergent drift cell in box 4 (Dutcher Cove) should be considered for protection through aggressive landowner education and regulatory protection from Pierce County because of its importance in maintaining the broad intertidal shelf of this shoreline”.**

http://www.psparchives.com/publications/our_work/species/salmon/salmon_plan/Appendix%20E-11.pdf

From the PSAT:

“What South Sound does have in abundance is mud flats. These habitats can exhibit extreme primary productivity through production of a diatom bio-film that grows on the mudflat surface. This bio-film is receiving considerable attention for its role in overall primary productivity in intertidal systems as well as its role in stabilizing fine sediments.”

Also, please see the link below for pocket estuary analysis and drift cell analysis:

http://www.psparchives.com/publications/our_work/species/salmon/salmon_plan/Text6.11.pdf

Aquaculture as habitat stressor:

The South Puget Sound Salmon Recovery Group, in a [review for Shared Strategy for Puget Sound](#), in 2004, page 45-48: **"Shellfish aquaculture in South Sound alters plant and animal assemblages and results in the loss of shallow nearshore habitat and habitat diversity important to salmon resources". "We hypothesize that shellfish aquaculture reduces productivity, abundance, spatial structure, and diversity of salmon populations".**

<http://www.piercecountywa.org/xml/abtus/ourorg/exec/specialprojects/chinookrecovery/Nearshore/SPSSR%20Plan%20Draft%20V1.pdf>

Aquaculture also brings the additional habitat [stressors](#) of wetland and estuarine modification, boat traffic and invasive species.

http://www.protectourshoreline.org/articles/ChinookBullTrout_Recovery_SPS_Draft2_Shellfish_AquacultureStressors.pdf

<http://www.sharedsalmonstrategy.org/watersheds/3-year/SouthSound3yrWorkProgram.pdf>

The Pentec Report:

Another study that puts into perspective the value of Dutcher Cove habitat to salmon populations is the Pentec Report, commissioned by Pierce County in July, 2003, for the purpose of identifying and conserving high quality salmon habitats to be considered for protection. The report identifies Dutcher Cove as especially remarkable. From page 29 of the PDF (report page 21): **“...Dutcher Cove, as well as other accessible protected areas, provide important refuge and epibenthic foraging habitat for juvenile salmonids migrating along the western shoreline of Key Peninsula. This is reflected in the overall habitat scores, with Dutcher Cove scoring highest in terms of relative habitat value”.**

<http://www.co.pierce.wa.us/xml/services/home/environ/water/ps/KGIHabitatAssess.pdf>

Key Peninsula Basin Plan:

Chapter 9 of the Pierce County Key Peninsula Basin Plan, identifies the Dutcher Cove area as habitat worthy of protection. From page 9-1: **“Existing high quality fish and wildlife habitat can be protected by acquisition on behalf of the public and by imposing and enforcing regulations that prevent its destruction by private parties”.** Dutcher Creek (Reach DU-02) is identified as a wetland suitable for acquisition. (Page 9-3, section 9.2.2).

<http://www.piercecountywa.org/xml/services/home/environ/water/ps/basinplans/keypen/KI-Chap9-FINAL.pdf>

Suzuki Foundation:

The report, Sustainable Shellfish, Recommendations for Responsible Aquaculture, by Heather Deal of The David Suzuki Foundation, paraphrasing from page 31 of the PDF (report page 27): **“Sensitive habitats, due to their high ecological value and vulnerability to damage...should not have intertidal shellfish tenures on or near them”.** Dutcher Cove fits the criteria as sensitive via the presence of a salmon stream, estuary and mudflats, significant fish holding and passage areas, and (according to WDFW) probably the presence of surf smelt and sand lance.

<http://www.davidsuzuki.org/files/Oceans/Shellfish.pdf>

Forage fish:

[Surf smelt](#) and [sand lance](#) are important considerations because they also survive on phytoplankton, and thus would be competing for food with unnatural densities of geoduck clams and other bivalves, which are documented as huge consumers of phytoplankton ([a single clam can filter 50 gallons of water a day according to the PCSGA](#)). It has also been scientifically demonstrated that shellfish bivalves can consume the larvae of fish.

The CSAS, in a review of the effects of shellfish aquaculture on fish habitat, 2006, from pages 33-34 of the PDF (report pages 25-26): **“Field studies reported in the same study found that mussels consumed (based on stomach content analysis) copepods (<1.5 mm), crab zoeas (2mm), fish eggs (1-2mm), and even amphipods (5-6mm). Subsequent to this, Lehane and Davenport (Lehane and Davenport 2002) showed that mussels consumed organisms up to 3mm and that cockles (Cerastoderma edule) and scallops (Aequipecten opercularis) are also capable of consuming considerable quantities of zooplankton, both when suspended in the water column and when on the bottom. The size classes of organisms consumed in these studies suggest that the larvae of most commercial species may be at risk from this type of predation”.**

http://www.dfo-mpo.gc.ca/csas/Csas/DocREC/2006/RES2006_011_e.pdf

The WDFW admit that not much is known about these ecologically important forage fish species and their role in the food chain. What is known is that salmon, in addition to copepods and other epibenthic organisms, also rely on forage fish for much of their diet, possibly as much as 60% for juvenile Chinook. The Pauley Report points out that surf smelt spawning areas have been documented about 1/3 mile from Dutcher Cove, but WDFW lists Dutcher Cove as probable but as yet unsurveyed.

Technical Report 2007-03, [Marine Forage Fishes in Puget Sound by Dan Penttila, WDFW](#): **“These agencies (WA Dept. of Agriculture, WA Dept. of Natural Resources) together with WA Dept. of Fish & Wildlife should seek a coordinated approach to the management of the growing aquaculture industry, with an eye toward modification of habitat-damaging culture practices and the mitigation of existing habitat degradation for which the industry has been responsible.”**
“The bulk of the Puget Sound Basin’s shoreline is now in private ownership. The likelihood of continued financial and political pressure for shoreline modification by a landownership population largely ignorant of nearshore resource values and conservation risks is high.”

http://pugetsoundnearshore.org/technical_papers/marine_fish.pdf

Assessing risk:

The CSAS, in a report titled: [ASSESSING HABITAT RISKS ASSOCIATED WITH BIVALVE AQUACULTURE IN THE MARINE ENVIRONMENT](#), 2006.

Page 5: “Effects on fish habitat can extend beyond site-specific footprints and lease monitoring does not allow broad-scale, ecosystem-level effects to be understood or measured. Measurements of variables in far-field benthic and pelagic habitats are needed because deductions from existing ecological knowledge indicate possibilities for altered system states.”

Page 7: “The literature on the effects of bivalve aquaculture on sensitive habitats is currently fragmented and not conclusive.”

Page 8: “Shellfish aquaculture often occurs in sheltered bays and estuaries because they offer suitable substrate. Such areas are often highly productive environments and key habitats for many migratory species. Work is required to study how potential impacts of bivalve culture (human activity, presence of structures on the seabed and in the water etc.) influence species in these ecosystems.” **“Given the almost complete lack of knowledge on the types of habitat that may be negatively affected by shellfish aquaculture, more research on sensitive habitat is**

needed."

Page 9: Work is needed to identify thresholds values that represent significant changes in fish habitat as indicators of shellfish aquaculture effects on pelagic communities.

http://www.dfo-mpo.gc.ca/csas/Csas/status/2006/SAR-AS2006_005_E.pdf

Banned in BC:

The British Columbia, Canada, [Ministry of Agriculture and Lands states on it's website](#): **Note: "Applications for new intertidal geoduck aquaculture are currently NOT being accepted due to gaps in understanding of geoduck aquaculture techniques on fish habitat".**

Tidal flushing:

Also of importance to Dutcher Cove habitat is the fact that the sub-basins of Case Inlet and South Puget Sound are low flushing.

<http://www.ecy.wa.gov/pubs/0203020.pdf>

The Pauley Assessment states on page 8: **“South Puget Sound shoreline habitats in particular are low energy systems with low flush rates and high water residency times...”** To my knowledge, no flushing studies of nutrient and sediment flows have been completed in Dutcher Cove to determine or estimate carrying capacity. Without this study, the introduction of a shellfish biomass beyond carrying capacity could lead to anoxic conditions similar to the dead zones that struck Hood Canal about a year ago, killing large numbers of fish. 3 acres of geoduck, with each weighing 1 pound, which is about half the harvestable size, with (modest by industry standards) 33,000 geoduck per acre, contains approximately 100,000 pounds of living flesh. No studies have been done to document the amount of feces this produces.

A study issued in January, 2008, for Washington Sea Grant: “The Effects of Geoduck Aquaculture on the Environment: A Synthesis of Current Knowledge” (Synthesis Study), Kristina M. Straus, Lisa M. Crosson, Brent Vadopalas, School of Aquatic and Fishery Sciences, University of Washington, reported a scallop weighing less than an ounce produced .004 ounces of waste per day. Extrapolating from that study, 100,000 pounds of geoduck would produce more than 3 tons of fecal matter (pseudofeces) per day.

The Synthesis Study noted: “Because biodeposition increases organic carbon levels and thus sediment oxygen demand (Giles and Pilditch 2006), high biodeposition rates may lead to anoxic conditions. The mechanism for anoxia was demonstrated at an oyster farm in France (Castel et al. 1989). Oyster biodeposition elevated sediment carbon levels, which increased oxygen demand. These changes led to anoxia which caused localized changes in benthic diversity.” In other words, excessive concentrations of shellfish create dead zones by consuming available oxygen, thus driving out other species.

http://www.wsg.washington.edu/research/geoduck/Geoduck_LiteratureReview.pdf

Habitat Assessment by Pauley:

The assessment appears to be based on '4' site visits of a few hours each. '3' in October and '1' in December. This is somewhat inadequate in my opinion. The references are mostly agreeable to me,

particularly from the WDFW, USFWS and the NMFS. This information is very accurate. There are some statements that appear to be mostly opinion.

On page 2: *“The west side of the cove has many bulkheads, and some un-permitted docks, isolating upland and shoreline processes, and restricting hydrological, sediment and erosion processes, as well as restricting habitat availability and suitability for many species (Zelo et. Al, 2000)”*.

This statement is incorrect. This must be a quote from some other study. It does not apply to the west side of Dutcher Cove. The armoring that does occur there is rather high on the beach. I'm not aware of any docks. At least not since yesterday.

On page 8: *“The geoduck tube beds were designed specifically with fish and aquatic organism passage in mind”*.

As I have previously shown per expert scientific analysis: nets and structures in the tidal substrate alter salmon behavior; feeding, resting, and migration patterns. The mentioned tube height of 3 inches is standard industry tube height.

On page 8 and 9: *“Geoduck beds will be placed toward the east side of the project area, giving them the greatest distance possible from the more densely developed west cove area. Because the total area of geoduck planting is small, additional biomass and numbers are likely to be within range of probable historic numbers of bivalves occupying Dutcher Cove, and within carrying capacity of the estuarine system here”*.

The east and west sides of the cove are generally of equal density, so this is incorrect. It appears to me that the proposed location of the placement of the geoduck beds is strictly for the purpose, and in the best interests of planting and harvesting, and not for any other specific reason.

Geoduck are mainly subtidal. Intertidally, they exist only in the lower portions that are under water most of the time. Although the PVC tubes act as tidal pools, thus allowing the geoduck farming to occur higher in the tidelands than normal, this is in an area that has a fair amount of fresh water seepage, and geoduck do not do well around fresh water. This area is also close to a culvert drainage pipe which drains Roberts Road and the entire upland vicinity. If planted in this area, the survival rate would probably be lower than average, and there would likely be a higher possibility of contamination from storm water runoff.

The proposed geoduck tracts are also located in an area of dense sand dollar beds, which are now rare in Puget Sound, along with the presence of a fair amount of kelp beds. Both species are important to habitat.

I also disagree that the additional biomass would be in range of probable historic numbers of bivalves. Since no flushing studies have been done, the carrying capacity is not known. Also, on page 1 of the narrative, it states that: *“Area 'I' is CURRENTLY seeded with a large population of Manila clams.”* Area 'I' is 6.1 acres, according to the narrative. Artificial seeding produces an unnaturally large density of clams. Also, Manila clams are not a native species, and in large numbers such as this, they may be displacing the native bivalves and also consuming resources important to benthic fauna, which in turn are important to forage fish and salmon. No studies were carried out because this seeding was done

surreptitiously, without a permit, and in violation of shoreline regulations. I very much doubt that this 6.1 acres of seeded Manila clams is within range of probable historic numbers of bivalves occupying Dutcher Cove.

On page 2: *“The Sewell's have been residents of Dutcher Cove for over 20 years, and have maintained a clean and aesthetically pleasing beach front...”*

Andrew Sewell purchased the tidelands parcel and the two large lots from the Best Family in June, of 1991. The Sewell's have, more precisely, been here for 16 years and 10 months, not over 20 years, as stated in the assessment. And in that time, Andrew Sewell has commercialized the cove without proper permitting, and without a business license and Federal Tax ID number. This was done under a commercial restriction which he agreed to at the time of closing. The deed also specifies that the tidelands parcel is subject to Pierce County Shoreline Regulations. Mr. Sewell did obtain a WS Department of Health certificate, otherwise he would not have been able to sell the clams that he has been seeding and harvesting in Dutcher Cove without any shoreline permitting.

In 1998 Mr. Sewell contracted with Minterbrook Oyster to begin operations while he was paid a fee. The operation was eventually halted due to the restrictive easement Mr. Sewell had signed at closing. This was done without a Pierce County permit. The Manila clam operation had been ongoing since that time. In 2006, Mr. Sewell planted geoduck tubes in Dutcher Cove without Pierce County permitting and without Army Corp. permitting. Throughout all of this, Mr. Sewell claimed that the clams were for his own personal use, and that he didn't know he needed a permit from Pierce County.

My point is this: there is a reasonable question as to the veracity and the integrity of the parties as it pertains to their claims of voluntarily implementing habitat conscious methods, minimizing impact to environment and neighbors, and maintaining an operation as: 'small and eco-friendly', as stated.

In addition, although Mr. Sewell has been profiting from the tidelands illicitly, he did not purchase a 'commercial' property and he has not been paying taxes on a commercial property. This is reflected in the assessed value of the 26 acre tideland parcel. The current assessed value is \$3700. The taxes are currently \$57. per year. Mr. Sewell had no legitimate economic expectation when he purchased the property.

Personal observations:

I've been walking out on Dutcher Cove's tidelands my entire life (50 years), and I can attest to the fact that there have never been any appreciable numbers of geoduck in the cove, or anywhere else along the entire tidal shelf, except at extreme low tide. I used to dig for geoduck with my grandfather. In those days, you chopped them up and put them in chowder. I'm probably one of the few people in the cove that has ever eaten any geoduck. We do have modest amounts of horse clams, some razor clams (which are often mistaken for geoduck), butter clams and some pacific oysters.

Historically, the residents of Dutcher Cove (approximately 50 property owners) have used the cove for recreational clamming and oystering, with the blessing of the Best Family prior to 1991, and also afterward, under a claim of right established by the Best Family Dedication of Easement.

I was an avid fisherman in my youth. Here is a list of fish that I've caught in Dutcher Cove in the

1960's and 1970's: Coho, Chum, Steelhead, Dolly Varden or Bull Trout, Bullhead, Flounder, and Dogfish. On occasion, I've seen schools of 20 or 30 salmon (I couldn't tell the species as they were moving too fast) moving through the cove, each weighing around 4 to 6 pounds. Last summer, (2007) a local sport fisherman caught a 30 pound Chinook just off Dutcher Cove. Flounder and Bullhead used to be ubiquitous but are now rare, and there was more red crab near the point decades ago.



Chum, Dutcher Cove, December, 2007.

Conclusions:

Dutcher Cove is part of an important shoreline marine environment and drift cell along the eastern shore of Case Inlet near Vaughn, in Pierce County. Dutcher Cove and Haley Lagoon are also pocket estuaries with high habitat value which are critical areas for the long term survival and recovery of threatened salmon species, including Chinook, Coho and Steelhead. Much of the Chinook utilizing the Cove are probably Nisqually Chinook, and may include both wild and hatchery fish.

Dutcher Cove is subject to Pierce County Shoreline Regulations, and should be protected against commercial development, and various forms of habitat degradation: shoreline armoring, over water

structures, storm water run off, riparian loss, wetland and estuarine modification, boat traffic, invasive species, and shellfish aquaculture.

Dutcher Cove is listed under [Pierce County Critical Areas](#) as potential for fish and wildlife. **“The purpose is to identify regulated fish and wildlife species and habitats and establish habitat protection procedures and mitigation measures that are designed to achieve 'no net loss' of species and habitat due to new development or regulated activities.”** (Ord. 2004 -56s 4 (part) , 2004).

Below are some paraphrased quotes from Pierce County Hearing Examiner, Terrance McCarthy, on the recent Taylor Foss decision, and from Pierce County Councilman Terry Lee.

“Legislative findings set out in RCW 90.58.020, that the shorelines of our State are the most valuable and fragile of its natural resources and that it is of great concern to all throughout our State relating to its utilization, protection, restoration and preservation.”

The hearing examiner's decision also points out, based on expert testimony, that geoduck farms are a **'structure'**, that they **'obstruct public use'** of the water, and that they cause **'habitat disruption'**.

Hearing examiner Terrance McCarthy

“While I believe that people should be able to do what they want with their property, the trouble with it (geoduck farming) is it’s a commercial operation in a residential environment.”

“It becomes very disruptive.” “It (geoduck farming) is dangerous, destructive and obtrusive to the people who want to exercise freedoms on the water to try and allow this type of commercial activity to occur when you most likely would be using that water frontage...”

Pierce County Councilman Terry Lee.



Orcas, Dutcher Cove, 2006.

Thank you in advance for your attention to this matter, and for your consideration.

Regards,

Curt Puddicombe
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