

1 **SHORELINES HEARINGS BOARD**
2 **STATE OF WASHINGTON**

3 COALITION TO PROTECT PUGET
4 SOUND HABITAT,

5 Petitioner,

6 and

7 PAUL H. GARRISON and BETTY N.
8 GARRISON,

9 Petitioner-Intervenors,

10 v.

11 PIERCE COUNTY; DARRELL de TIENNE
12 and CHELSEA FARMS, LLC,

13 Respondents.

14 DARRELL de TIENNE and CHELSEA
15 FARMS, LLC,

16 Petitioners,

17 v.

18 PIERCE COUNTY,

19 Respondent.

SHB No. 13-016c

FINDINGS OF FACT,
CONCLUSIONS OF LAW,
AND ORDER

(SHB NO. 13-016)

(SHB NO. 13-018)

(SHB NO. 13-019)

20 Petitioners Coalition to Protect Puget Sound Habitat (the Coalition) and Petitioner-
21 Intervenors Paul and Betty Garrison (the Garrisons) (collectively, Petitioners) challenge Pierce
County's approval of a Shoreline Substantial Development Permit (Permit) issued to
Respondents Darrell de Tienne and Chelsea Farms, LLC (collectively, the Applicants) for a

FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND ORDER
SHB No. 13-016c

1 commercial geoduck farm in Henderson Bay, a portion of Carr Inlet located in Pierce County.

2 The Shorelines Hearings Board (Board) previously issued an Order on Motions to

3 Dismiss and for Summary Judgment that, among other things, dismissed numerous legal issues

4 and dismissed Paul and Betty Garrison's Petition for Review, but granted the Garrisons limited

5 status as Petitioner-Intervenors.

6 A six-day hearing on remaining issues¹ was held in Tumwater, Washington from

7 November 12 through November 19, 2013, at which time the Board received the sworn

8 testimony of witnesses, admitted exhibits, and heard arguments from all parties to this appeal.

9 The Board hearing this matter was comprised of Chair Tom McDonald, Kathleen D. Mix, Joan

10 M. Marchioro, Pamela Krueger, Grant Beck, and Robert Gelder. Administrative Appeals Judge

11 Kristie C. Elliott presided. Pennington Court Reporting provided court reporting services.

12 Board members who missed any portion of the hearing listened to tapes for the portion(s)

13 missed, reviewed the exhibits, and participated fully in the deliberations.

14 Having fully considered the record, the Board enters the following:

15 **FINDINGS OF FACT**

16 **A. The Proposed Farm**

17 [1]

18 In 2005, the Applicants submitted their Permit application for a five-acre geoduck farm

19
20 ¹ The Applicants filed their own Petition for Review to challenge certain conditions imposed by the Pierce County
Hearing Examiner (Hearing Examiner), but settled all issues with the County prior to hearing. Though this
settlement purported to encompass subsequent changes to the Permit, the Board's review in this matter is limited to
the Hearing Examiner's Decision approving the Permit with conditions, and no changes to the Permit made
21 subsequent are before the Board for review.

1 (the Farm) to be located on County Auditors Parcel No. R0122233064 (the Farm Site or Site), a
2 10.47-acre private intertidal and subtidal shoreline parcel owned by Darrell de Tienne in Pierce
3 County. Meaders Testimony; Ex. R-167 at p. 3; De Tienne Testimony; Ex. R-2 at p. 2.

4 [2]

5 The Farm Site is located on the north shore of Henderson Bay, which is part of Carr Inlet.
6 Burley Lagoon is located at the tip of Henderson Bay. The Site is designated Rural-Residential
7 under Pierce County's Code, which permits aquaculture in this zone. It is also designated a
8 shoreline of statewide significance. Booth Testimony; Ex. R-2 at p. 2; Ex. R-3 at p. 1; Ex. R-6;
9 Ex. R-7; Newell Testimony; Ex. P-89.

10 [3]

11 Geoducks are large, edible burrowing clams indigenous to Puget Sound. Commercial
12 harvest began in Washington State in 1970 after discovery of abundant subtidal populations. Ex.
13 P-7. While commercial operations can be limited to harvest of native populations, they also
14 include geoduck "farms," which artificially plant and then harvest the geoduck. Typically these
15 geoduck farms are in the intertidal zone. Here, the Applicants' proposed Farm will include the
16 subtidal zone.

17 [4]

18 The proposed Farm in this case would conduct a single planting and harvesting cycle in
19 10 years, with planting and harvesting staggered for different sections of the Farm. The
20 Applicants will place 4-inch diameter neutral-colored PVC tubes about 15-18 inches apart into
21 the substrate, which will extend about two to three inches above the substrate; three to four seed

1 clams would be placed inside each tube. The tubes would remain for a maximum of two years,
2 with a maximum of two acres of aquatic lands containing up to 56,000 tubes at any one time.
3 After two years, the PVC tubes and predator netting would be removed (though predator netting
4 may be replaced for up to six months), and after the geoducks reach market size in four to seven
5 years, they would be harvested by hand at low tide or by divers in the subtidal area using hand-
6 held water jets at a pressure of approximately 40 pounds per square inch and a volume of
7 approximately 20 gallons per minute to loosen the substrate. The pumps would be run by small
8 engines on a small boat offshore. De Tienne Testimony; Ex. R-1 at p. 4, ¶ 5; Ex. R-24 at pp. 2-4;
9 Ex. R-165 at p. 7. It was also clarified that it is likely that only canopy netting, not the individual
10 tube netting and bands as identified in the Hearing Examiner Decision, will be used for predator
11 exclusion. De Tienne Testimony.

12 [5]

13 Planting and harvesting at the Farm Site would be primarily in the subtidal zone, which
14 distinguishes this Farm from others reviewed by the Board located in the intertidal zone. The
15 Farm would be the first subtidal commercial geoduck operation to be permitted in Pierce County.
16 Booth Testimony; Ex. R-2 at p. 3. Operations would be set back 220 to 320 feet from the
17 shoreline, with only 0.5 acres of the five-acre cultivable area at the Farm Site available for
18 intertidal planting. In the SE quadrant of the property, approximately 3/4 acre of cultivable lands
19 is intertidal while the rest is subtidal. Meaders Testimony; Ex. R-167 at p. 3; Ex. R-24 at p. 2;
20 Ex. R-1 at p. 5, ¶ 6; Ex. R-2 at p. 2. While the Permit allows the Applicants to plant and harvest
21

1 in this smaller area in the intertidal zone, they have not yet made the decision whether to do so.
2 De Tienne Testimony.

3 [6]

4 Another difference of the proposed Farm from other geoduck farms reviewed by the
5 Board is that it sits over a continuous swath of eelgrass that runs adjacent to the shoreline of
6 Henderson Bay. Planting of geoducks in the subtidal area of the Farm would run along the
7 seaward boundary of this eelgrass bed, separated by a buffer, discussed further below. Likewise,
8 the intertidal planting area would run along the shoreward side of the eelgrass bed, again with a
9 buffer area. Additionally, a portion of the planting area of the Farm will be over an area of
10 eelgrass damaged by previous operations at the Farm Site. De Tienne Testimony.

11 [7]

12 This proposed Farm is also unique because it would be the first commercial geoduck
13 farm permitted in the area. Booth Testimony. Though Burley Lagoon has been host to
14 aquaculture previously, this has been focused on other types of aquaculture, in particular, oyster
15 cultivation. *See, e.g., McDonnel Testimony.*

16 [8]

17 This area of Puget Sound supports diverse aquatic life that includes eelgrass and kelp,
18 forage fish (including herring, surf smelt, and sand lance), aquatic organisms (including sand
19 dollars and sea stars), and various terrestrial species such as bald eagles. Purdy Creek is a nearby
20 salmon spawning creek that flows into the north end of Henderson Bay. Orca and grey whales
21

1 have also been spotted in the Bay. *See, e.g.*, Penttila Testimony; Daley Testimony; Newell
2 Testimony.

3 [9]

4 This area also boasts a large fetch, the distance over which the wind can blow
5 unobstructed by land, making it a popular windsurfing spot. The winds create high waves that
6 translate into a higher energy shoreline environment. Newell Testimony; Paradise Testimony;
7 Meaders Testimony.

8 [10]

9 Historically, environmental impacts from commercial geoduck operations have not been
10 extensively studied. The state Legislature recognized the need for more scientific study of
11 industry practices and passed legislation in 2007 that led to commencement of research by the
12 University of Washington Sea Grant Program. Booth Testimony; *see also* Ex. R-3 at p.3;
13 *Coalition to Protect Puget Sound Habitat v. Pierce County*, SHB No. 11-019 (2012)
14 (“*Longbranch*”) at COL 16, p. 25 (recognizing same); RCW 28B.20.475. At that time, the
15 Applicants requested their application for this Farm be put on hold until the new research
16 became available. At some later point, when research was taking too long and County
17 processing deadlines loomed, the County proceeded to review the application. Booth Testimony.

18 [11]

19 The County assessed and mitigated for potential impacts from this project in part under
20 the State Environmental Policy Act (SEPA), chapter 43.21C RCW. On November 21, 2012, the
21 County issued a Mitigated Determination of Nonsignificance (MDNS), in which the County

1 Responsible Official, Ty Booth, initially determined that “the proposal will adversely impact fish
2 and wildlife species and their habitat” and imposed 12 mitigation measures. The County
3 concluded based on these mitigation measures that “the proposal does not have a probable
4 significant impact on the environment.” The MDNS was not appealed. Ex. R-3; Booth
5 Testimony. The County also submitted a Staff Report to the Hearing Examiner that contained
6 additional recommendations for conditions to place on the Farm. Booth Testimony; Ex. R-2.
7 Following a series of public hearings, the Hearing Examiner then approved the Permit with 27
8 conditions. Ex. R-1. The County still needs to issue a Fish and Wildlife Habitat Area approval
9 for the project under its Critical Areas Ordinance. Mr. Risvold testified that the conditions of the
10 fish and wildlife approval are likely to be the same conditions as for the shoreline permit.
11 Risvold Testimony.

12 [12]

13 The Coalition presented five witnesses at hearing (Bradford Newell, Robert Wenman,
14 John McDonnell, Susan Macomson, and Robert Paradise) who were neighbors and/or
15 recreationalists and who testified about impacts from the proposed Farm on the environment
16 and/or recreational use of the area. The Coalition also presented the testimony of three scientific
17 expert witnesses: Daniel Penttila, a fish biologist; Wayne Daley, also a fish biologist; and Dr.
18 Gary Ritchie, a forestry expert with statistical expertise. In addition, Paul Garrison as Petitioner-
19 Intervenor testified on environmental conditions at the Farm Site. Four witnesses including one
20 expert witness testified for Respondents: Darrell De Tienne; Ty Booth, a planner with the
21

1 County; Dave Risvold, an environmental biologist with the County; and Marlene Meaders, a fish
2 biologist with expertise in shellfish aquaculture.

3 [13]

4 Testimony about the potential impacts from the proposed Farm fell into identifiable
5 subject areas including impacts from marine debris and how farm operations may affect the
6 benthic environment, forage fish, and other species. There is some similarity between the issues
7 alleged in this proceeding and prior challenges by the Coalition of other proposed farms. *See*
8 *Longbranch*, SHB No. 11-019 (2012) at FF 5-8, 15-18, pp. 4-6, 11-12; *Coalition to Protect*
9 *Puget Sound Habitat v. Thurston County*, SHB No. 13-006c (2013) (“*Lockhart*”) at FF 17-23,
10 27-30, 33-35, 36-39, pp. 8-11, 12-15, 16-19. Each shoreline appeal must be based upon its own
11 merits, however, and this case presents some unique aspects that include the presence of eelgrass
12 at the Farm Site, the proximity of known herring spawning locations to the Farm Site, the
13 specialized recreational use of the area for windsurfing, and the Farm Site’s location on a
14 shoreline of statewide significance. These areas of distinction serve as the main focus of the
15 Board’s analysis and, ultimately, its decision to deny the Permit in this case.

16 **B. Impacts to Eelgrass**

17 1. Role of Eelgrass in the Ecological System

18 [14]

19 Eelgrass and nearshore marine algal communities (*e.g.*, kelp) provide major ecological
20 benefits. Penttila Testimony; Ex. P-4; Ex. P-49. Eelgrass, in particular, has been called “the
21

1 bread and butter of the marine environment.” *Holley v. San Juan County*, SHB No. 00-001
2 (2000) at FF 5. The Board has previously found:

3 Eelgrass serves essential functions in the developmental life history of fish
4 and shellfish. WAC 220-110-250. It provides refuge sites and shelter from
5 predators for fish and invertebrates, and for other small organisms. Eelgrass is a
6 source of food for many marine animals and birds, and is habitat for red algae
7 and other marine plants. It also provides physical stabilization of the nearshore
8 area. Seagrasses baffle wave and tidal energy, protecting subtidal sediments and
9 shorelines from erosion and can alter local and regional hydrography.
10 Seagrasses such as eelgrass are the only rooted organisms in the near-shore
11 region and they serve as the foundation for thousands of vertebrate and
12 invertebrate species that use it for shelter, foraging, spawning habitat, and
13 nurseries. . . .

14 *Friends of the San Juans v. San Juan County*, SHB No. 08-005 (2008) at FF 15.

15 The Board has repeatedly acknowledged the vital role of eelgrass to the health of Puget
16 Sound and noted its “significant decline” over time, finding:

17 Damage to eelgrass can affect whole populations of fish, including
18 threatened salmon, waterfowl, shellfish, and other animals. Eelgrass also serves
19 to physically stabilize the state’s shorelines by concentrating in nearshore areas
20 where these animals live, feed, and spawn. There has been a marked decline in
21 eelgrass and other sea grasses world-wide, which can be classified as a global
crisis. This decline has accelerated in developed countries such as the United
States. Due to the site-specific nature of the functions and values of eelgrass,
protection of eelgrass beds is preferable to replacement of beds because the
surrounding environment loses the functions and values that the destroyed
eelgrass beds provide, and replacement efforts are not always successful, and
can take a long time. When seagrasses are damaged, restoration is expensive
and uncertain. Many of the lost ecological services cannot be adequately
restored, and the cumulative effects from loss of seagrasses such as eelgrass can
degrade seagrass biomes on both local and regional scales. Documented success
of restoration by replanting is rare.

22 *Id.* at FF 18 (internal citations omitted).

1 The Board has thus recognized the need to protect eelgrass because doing so “safeguards
2 species richness, biodiversity, ecosystem structure, and many ecological processes.” *Id.* at FF 15.

3 [15]

4 Both eelgrass and macroalgae provide major ecological benefits as habitat for out-
5 migrating juvenile salmon and for forage fish, including herring, to spawn. Herring are one of
6 three major shore-spawning forage fish species in Puget Sound; they are a key species in the
7 marine food web and therefore a good “indicator species” for gauging the relative health of the
8 Sound. Herring spawn cling to vegetation, including eelgrass. Evidence of spawning can easily
9 be seen by the naked eye, especially when spawning occurs at medium or high intensities.

10 Penttila Testimony; Exs. P-4; P-23; P-40-41; P-44-48.

11 [16]

12 Eelgrass and macroalgae² serve vital ecological roles in addition to providing spawning
13 habitat. This includes carbon-fixing/sequestration, the production of organic matter and detritus
14 (the basis of the food chain), and the provision of physical habitat for use by adult marine species
15 and as a refuge and nursery area for juvenile life stages. Eelgrass is particularly susceptible to
16 disturbances. This can include both direct disturbances like trampling, plus effects from indirect

17
18 ² In addition to establishing an eelgrass buffer, the Permit mandates a physical separation be maintained between
19 Farm activities and attached kelp species (order Laminariales). Ex. R-1 at p. 30 (Condition 26.C). No attached
20 species of kelp were found at the Farm Site, however. Meaders Testimony. While Mr. Penttila testified that
21 protection should have been afforded to unattached kelp species found at the Farm Site, he did not specify—and it
remains unclear—how this could be accomplished (*e.g.*, how a buffer from activities can practically be maintained
from unattached, free-floating aquatic vegetation). Penttila Testimony. The Board makes no finding in this regard
because the burden of proof as to proper kelp protection was not met. The Board does note that, while the Permit
requires a buffer from attached kelp species, it did not (and possibly should) require subsequent surveys to assess
whether any attached kelp species are present. *See* Ex. R-1 at p. 31 (Condition 26.D) (requiring surveys for eelgrass,
but not kelp).

1 disturbances (e.g., sedimentation and related turbidity) that decrease light availability. Penttila
2 Testimony; Ex. P-4; Ex. P-49.

3 2. Presence of Eelgrass at the Farm Site

4 [17]

5 Eelgrass at the Farm Site was surveyed and mapped in 2004, 2009, and 2012. Ex. R-23;
6 Ex. R-24; Ex. R-21. These surveys have been relied upon by the Applicants to establish baseline
7 conditions for the Site. See Ex. R-9 at p. 1. The surveys confirm that a native eelgrass bed (*Z.*
8 *marina*) spans the Farm Site. It covers approximately 20% of the 10.74-acre parcel. It is present
9 in a tidal range of approximately -2.5 to -8.5 ft MLLW, and contains two zones of eelgrass
10 growth: (1) continuous bed growth within a tidal range of -2 and -7 ft MLLW, and (2) patchy
11 bed growth in a slightly more truncated area between -2 and -7 ft MLLW. There are also
12 isolated patches (less than 4 ft²) and smaller areas (up to 0.04 acres) extending out to
13 approximately -13 ft MLLW below the continuous bed, and to approximately -8 ft MLLW below
14 the patchy bed. The continuous bed growth ranges from moderate to dense (60-80%) in a 36-m-
15 long band with short breaks (1-2 m) in vegetation. The patchy bed growth ranged from sparse to
16 dense coverage (10-80%) in short (2-6 m) sections with long breaks (2-8 m) in vegetation or
17 areas dominated by other vegetation. See Ex. R-24 at p. 44 (summarizing same). Maps showing
18 the eelgrass bed in relation to proposed growing areas are provided in numerous exhibits. See,
19 e.g., Ex. P-1421 at pp. 35-36; Ex. R-7; Ex. R-9 at Figure 1; Ex. R-24 at p. 45, Figure 8.

1 [18]

2 The eelgrass bed extends both directions along the Henderson Bay shoreline, and beyond
3 the boundaries of the Farm Site. Meaders Testimony. The Farm Site also sits, at least in part, on
4 an area of eelgrass that was degraded by prior operations at the Site, discussed further below. De
5 Tienne Testimony.

6 3. Degraded Condition of Eelgrass at the Farm Site

7 [19]

8 The eelgrass underlying the Farm Site was heavily damaged—including removal of
9 eelgrass—during past commercial geoduck operations conducted onsite. In 2001, Mr. De Tienne
10 entered into a lease with Doug McCrae of Washington Shellfish, Inc. to plant and harvest
11 geoduck on the Farm Site. Mr. McCrae also leased three additional nearby parcels, and he began
12 farming all four parcels without shoreline permits. Shoddy and illegal practices led to an
13 enforcement action by the County against Washington Shellfish, and Mr. De Tienne as the
14 property owner. The County issued a cease and desist order that halted the operations in 2003.
15 De Tienne Testimony; Wenman Testimony; Ex. R-2 at p. 4, ¶ 6; Ex. R-3 at p. 2, ¶ 5; Ex P-142h
16 (cease & desist order).

17 [20]

18 To support the Permit application and extent of farming activities at the Site, the
19 Applicants rely on eelgrass surveys performed after the eelgrass beds had been damaged by the
20 previous operations. Ex. R-23 (2004 survey); Ex. R-24 (Biological Evaluation that includes a
21 2009 survey); Ex. R-21 (2012 survey). Notably, the first survey just two years after farming at

1 the Site, in 2004—which also assessed the three other parcels leased by Mr. McCrae—found
2 eelgrass to be in a highly degraded condition:

3 Eelgrass (*Zostera marina*) was noted in most of the shallow areas of the survey
4 between -2.5 MLLW and -7.5 MLLW. All areas were patchy and sparse, with
5 an estimated range of one turion per 1/4 M² to 10 turions per 1/4 M² within the
6 patches. All specimens of Eelgrass were in an unusual condition. Unlike most
7 specimens where blades grow in a vertical direction, the blades on all Eelgrass
8 noted throughout the entire survey were curved. The growing edge was located
9 toward the substrate, not the water columns. In addition to the condition of the
10 individual plants, if taken as a whole, the area looked like a “warzone.” All
11 plants were either partially or wholly dislodged from the substrate with the roots
12 and rhizomes exposed.

13 Ex. R-23 at pg. 1-2 of Eelgrass Survey report.

14 [21]

15 The surveyor did not assign a specific cause to the degradation found, other than to note
16 there could be “many potential causes for such altered Eelgrass,” including “high levels of
17 disturbance from algae harvesters.” Ex. R-23 at pg. 2 of Eelgrass Survey report. Though the
18 surveyor (Amy Leitman) later clarified that the “war zone” comment referred to the County area
19 surveyed, and not De Tienne’s area (Ex. R-22), the survey nonetheless concluded for the
20 privately owned tidelands that “there were no dense beds observed and no healthy Eelgrass
21 observed.” Ex. R-23 at p. 2 of Eelgrass Survey report.

[22]

22 No actions were taken to restore eelgrass at the Farm Site. The eelgrass is still found, at
23 least to some extent, to be in a degraded state at this Site. The latest survey in 2012 confirmed
24 that the eelgrass continues to be found in a degraded state within the shoreward 20-25 meters

1 along the vertical transects perpendicular to shore. Ex. R-24 at pp. 47; Wenman Testimony; Ex.
2 P-128; Meaders Testimony.

3 4. Existing Eelgrass Bed and Adequacy of Eelgrass Buffers in the Permit

4 [23]

5 The Permit sets buffers that prohibit farm activities within certain distances from both the
6 intertidal and subtidal edges of the eelgrass bed that crosses the Farm Site. Farm activities must
7 maintain a minimum of ten horizontal feet away from the eelgrass bed on the shore side for
8 intertidal activities, and a minimum of 25 horizontal feet on the seaward side for subtidal
9 activities (however, the Eelgrass Monitoring Plan allows for ten horizontal feet buffers on fifty
10 percent of the seaward side for each new planting cycle). Ex. R-1 at p. 30 (Condition 26.C(1));
11 *see also* Finding of Fact No. 33, *infra*. The Permit defines an eelgrass bed as more than three (3)
12 shoots of eelgrass per 0.25 square meters and within one (1) meter of adjacent shoots. Ex. R-1 at
13 p. 30 (Condition 26.C).

14 [24]

15 The primary purpose of implementing a buffer is to protect eelgrass from sedimentation
16 caused by farm activities, and physical trampling by divers. Risvold Testimony. Sedimentation
17 and turbidity can occur from commercial geoduck operations and, in particular, from harvest
18 activities. Such disturbances can harm eelgrass, especially if farming activities were to be
19 performed directly within eelgrass. Part of the question before the Board was the spatial extent
20 of “spillover” effects to eelgrass from nearby farm activities, and what size buffer would be
21 necessary to adequately protect the eelgrass from these activities.

1 [25]

2 In 2001, the Washington Department of Natural Resources (DNR) and Washington
3 Department of Fish and Wildlife (WDFW) issued a Final Supplemental Environmental Impact
4 Statement for the State of Washington Geoduck Fishery (SEIS). Ex. P-7. In the SEIS, DNR and
5 WDFW relied on “30 years of fishing, observation, and research” to review the potential
6 environmental impacts from commercial geoduck operations as a “non-project proposal” under
7 the SEPA, WAC 197-11-442. The SEIS took ten years of agency effort and went through
8 significant peer review. It is the only environmental impact statement performed for subtidal
9 geoduck harvesting. Wenman Testimony; Exs. P-7-8.

10 [26]

11 Sedimentation from harvest was addressed as a known impact in the SEIS:

12 Harvest of geoducks disrupts the sediment around each geoduck and the animals
13 that live within the sediment. The area actually dug within a commercial tract
14 depends on the density of geoducks. Average density on unfished tracts in
15 Washington is 1.7 geoducks/m², and 1.9 geoducks/m² in central Puget Sound,
16 southern Puget Sound, and Hood Canal (Goodwin and Pease 1991). Assuming
17 an average density of 1.9 geoducks/m², digging will affect 21% of the area
18 within a harvest tract if all geoducks are removed. A liberal estimate of the
19 amount of area affected by digging would be 25% (State of Washington 1985).

20 Ex. P-7 at p. 69.

21 [27]

While the SEIS generally concluded that “[g]eoduck harvest does not have significant,
long-term, adverse impacts on the benthic environment and (non-geoduck) flora and fauna,” it
also explicitly included (within its conclusions) a number of mitigation measures, which were

1 already being implemented for State-Tribal management agreements and harvest plans. Among
2 these mitigation measures was that “[a] 2 foot vertical buffer or a minimum of 180 foot buffer
3 (for tracts with a very gradual sloping contour) is maintained between the harvest area and
4 eelgrass beds and any substrate used for herring spawning.” Ex. P-7 at pp. 5-6.

5 [28]

6 Following the SEIS, the Applicants originally proposed a two vertical foot buffer in the
7 subtidal zone,³ which would equate to a 40-50 foot horizontal buffer based on conditions at this
8 Site. Ex. P-5 at p. 5. The County’s MDNS and Staff Report that reviewed the application were
9 based on this proposed larger seaward buffer. Booth Testimony; Ex. R-2; Ex. R-3. In addition,
10 some federal agency consultation was based on the larger, two-foot vertical buffer. Booth
11 Testimony; Meaders Testimony; *see, e.g.*, Ex. R-24 (Biological Evaluation for proposal) at p. 2;
12 Ex. R-73.

13 [29]

14 However, as the Permit underwent further review, the Applicants began negotiations for a
15 smaller buffer, with the express intent of gaining more farmable area. The Applicants viewed
16 the larger buffer as “severely restricting the cultivable area of the farm and imposing a
17 significant hardship. . . .” Ex. R-5 at p. 5; De Tienne Testimony; Booth Testimony; Risvold
18 Testimony; Meaders Testimony. While the Applicants assert that agreement was reached as to
19

20 ³ Booth Testimony; Ex. R-1 at p. 4, ¶ 5 (noting same). In fact, the estimate of five cultivable acres available to be
21 farmed at the Farm Site was based on applying the larger two vertical foot buffer from the subtidal edge of the
eelgrass bed. *See* Ex. R-24 at p. 2; Ex. P-1421 at p. 37. The Board was not provided a different estimate for the
cultivable area now available for farming under the smaller buffer contained in the Permit, but it can be assumed to
be larger than five acres.

1 the acceptability of a smaller buffer in conversations with individuals at the State Department of
2 Ecology, WDFW, DNR, the USFW and/or the Corps (Meaders Testimony), the record lacks
3 documentation to show agreement by all agencies involved.

4 [30]

5 The County and the Applicants agreed that the two-foot vertical buffer was too
6 conservative and should not be directly applicable to a shallow subtidal project such as the Farm
7 Site. Regarding sediment transport, they concluded that the larger buffer set out in the SEIS was
8 based on worst case sediment transport that will not really occur. Risvold Testimony; Meaders
9 Testimony. Ms. Meaders asserted that smaller buffers are within the range of buffers (between
10 ten and 25 feet) that regulatory agencies have historically applied to protect eelgrass from other
11 activities, including other types of aquaculture. Meaders Testimony; *see, e.g.*, Ex. R-135; Ex. R-
12 166.

13 [31]

14 The County recognized the range of potential buffers for this project could span from ten
15 horizontal feet as the smallest possible buffer, to two vertical feet (40-50 horizontal feet) as the
16 larger buffer, based in part on the SEIS and eelgrass buffers that had been applied for this and
17 other types of activity. Ex. P-1421 at p. 1.⁴ However, the County ultimately agreed to require
18 smaller buffers (ten feet for the intertidal portion of the Farm and 25 feet for the subtidal
19 portion). In part, the County put substantial weight on the concurrence of the other agencies.

20 ⁴ Mr. Risvold referenced the two-foot vertical buffer as being equal to 180 horizontal feet in this correspondence,
21 but clarified at hearing that he meant a two-foot vertical buffer—which translates into 40-50 horizontal feet as
applied at this Site; confusion came merely from the alternate reference of 180 feet provided in the SEIS for the two-
foot vertical buffer. Risvold Testimony.

1 The County was also convinced by the Applicants that the smaller buffers represented the
2 implementation of “best available science” at the Farm Site, based in large part on Ms. Meaders’
3 presentations to them. Booth Testimony; Risvold Testimony; Ex. P-1421 at p. 27.

4 [32]

5 The ten-foot buffer established by the Permit on the intertidal portion of the Farm follows
6 the jagged edge of the eelgrass bed as it runs adjacent to the shoreline. Ex. R-7. The Applicants
7 concede that farming in this intertidal area will allow sediment to be distributed over the
8 landward edge of the eelgrass bed during harvest activities. This is likely, as sediment will travel
9 laterally along the shore and therefore over the eelgrass, where it will begin to settle out.
10 Meaders Testimony. There has been no analysis of the effects of this sediment deposition on the
11 eelgrass in this area, only a recognition of the potential problem. No Permit term addresses this
12 issue.

13 [33]

14 Although the Permit set a 25-foot seaward buffer, it allowed further reductions in the size
15 of this buffer “in a limited number of locations for purposes of monitoring.” Ex. R-1 at p.31
16 (Condition 26.C(1)). The Applicants prepared a monitoring plan after the Hearing Examiner
17 issued her decision. Ex. R-34. Under the monitoring plan, each of the five subtidal blocks of the
18 Farm Site is divided in half, with a 25-foot buffer on one half and a ten-foot buffer on the other
19 half of each block—resulting in a 50% reduction of the seaward buffer to ten feet. *Id.* at 3. The
20 Permit also allows for reductions in the 25-foot seaward buffer “if monitoring over the course of
21 at least one complete planting and harvest cycle demonstrates a small buffer provides effective

1 protection of the eelgrass bed.” Ex. R-1 at p. 31 (Condition 26.C(2)). No standards, criteria, or
2 process were established for determining whether a buffer change is appropriate.

3 [34]

4 While the claim was made that the 25-foot buffer accounts for the potential expansion of
5 eelgrass, Ms. Meaders clarified that no actual space was added to the buffer for purposes of
6 expansion. *See* Ex. R-34 at p. 1; Meaders Testimony. In short, the buffers will not change under
7 the Permit based on the eelgrass bed expanding or contracting at the Site. Meaders Testimony.
8 The County and Applicant agreed that the extent of the eelgrass bed documented in survey(s) for
9 the Site would constitute a fixed “line” (baseline) for the buffer. The Permit does not contain or
10 reflect this agreement. Risvold Testimony; Ex. R-1; Ex. R-106.

11 [35]

12 The Coalition’s expert, Mr. Penttila, testified that these buffers are not protective of
13 eelgrass. He asserts the project should be denied based in part on the need to protect eelgrass, or
14 else that a two-foot vertical seaward buffer should be imposed. He relies for support on the fact
15 that a two-foot vertical buffer was recommended as mitigation in the SEIS, and is considered
16 necessary to protect forage fish spawning, specifically herring. Ex. P-4; Ex. P-13; Penttila
17 Testimony.

18 [36]

19 While Ms. Meaders is knowledgeable of the geoduck industry and science underlying
20 aspects of industry practices, based on testimony and evidence, the Board did not find her to be a
21 credible expert in all aspects of study related to the nearshore environment to which she claimed

1 expertise. The Board finds that Ms. Meaders is not an expert, in particular, in geomorphology or
2 sediment transport, or eelgrass biology and growth. Due to her lack of independent expertise in
3 these areas, Ms. Meaders' testimony largely constituted her summarization of work done by other
4 experts on the potential for spillover effects to eelgrass, thus making her unable to offer an
5 independent opinion. In any event, as discussed further below, the Board found the studies upon
6 which Ms. Meaders relied to be unpersuasive scientific support for the smaller eelgrass buffer at
7 this Site.

8 [37]

9 Ms. Meaders relied upon one soon-to-be published study and three unpublished studies or
10 analyses subsequent to the SEIS as showing that the small 10-25-foot buffer is protective of
11 eelgrass at this Site. She first pointed to a study conducted by Glenn R. VanBlaricom, Jennifer
12 R. Price, and others as part of the University of Washington Sea Grant research. The
13 VanBlaricom/Price Study, now in press for publication, assessed the benthic effects of geoduck
14 aquaculture at three existing intertidal farms. It considered impacts to infaunal benthic
15 organisms like polychaetes, mollusks, and crustaceans, and found modest effects but no
16 significant (“significant” being an undefined term in the study) “spillover” effect. The study
17 concluded that turbidity and suspended sediments produced by geoduck harvesting are at levels
18 similar to natural disturbances, with effects that are highly localized and limited in duration.
19 Meaders Testimony; Ex. R-167 at p. 13; Ex. R-143; Ex. R-116. However, this study did not
20 address impacts to eelgrass, in particular, and it was not one of the three pieces of evidence Ms.

1 Meaders primarily relied upon for her opinion on the reduced eelgrass buffer in this case.

2 Meaders Testimony.

3 [38]

4 Published studies have proven that severe effects result when geoduck farming occurs
5 *within* eelgrass beds, *see* Ex. R-20 at 3 and Ex. R-87, however, no published studies have
6 examined the effects of geoduck harvest on *nearby* eelgrass. *See* Ex. P-116 at 6 (noting same).
7 In the absence of any such published studies, Ms. Meaders relied primarily on the following
8 three unpublished analyses or studies to support the smaller buffer being applied at this Site: (1)
9 an internal agency Technical Memorandum on the Operational Definition of an Eelgrass
10 (*Zostera marina*) Bed (Tech Memo: Ex. R-51); (2) an unpublished study by Michael Horwith at
11 the University of Washington that assessed “spillover effects” from an existing Samish Bay
12 geoduck farm (Horwith Study: Ex. R-121); and (3) an unpublished study by Dr. Pearce of the
13 Department of Fisheries and Oceans in Canada that directly assessed the impacts of a subtidal
14 geoduck harvest on nearby eelgrass (Pearce Study: Ex. R-68, Ex. P-116).

15 [39]

16 The agency Tech Memo was prepared for internal use in 2011 by DNR, in order to
17 summarize then-current discussions among representatives of the Washington shellfish
18 aquaculture industry, DNR management, and DNR aquatics staff. Risvold Testimony; Ex. R-51
19 at p. 1. It addressed how to define an eelgrass bed, and described the biological constraints of
20 eelgrass beds (*e.g.*, how far seed dispersal would occur, and the extent to which a bed will recede
21 or expand). The analysis did not address impacts to eelgrass from geoduck aquaculture, nor

1 suggest an appropriate buffer area. However, Ms. Meaders relies on it for its assessment of the
2 extent of natural expansion and contraction of eelgrass beds, which the Tech Memo concludes is
3 four to five meters seasonally. Meaders Testimony; Ex. R-51 at p. 26. Ms. Meaders indicated
4 that this Tech Memo supported her opinion that eelgrass is limited in its ability to expand at the
5 Farm Site based on limitations in subtidal light. The Board does not find Ms. Meaders' opinion
6 on this point persuasive due to her lack of expertise in this area, the fact that the Tech Memo did
7 not provide direct support for this opinion, and the fact that her opinion was not supported by any
8 site-specific analysis. Nor did Ms. Meaders evaluate the fact of prior eelgrass damage and
9 degradation as it pertains to the manner in which eelgrass would be expected to recover and
10 expand at the Site over time. Meaders Testimony; De Tienne Testimony; Wenman Testimony;
11 Ex. R-167.

12 [40]

13 The Horwith Study assessed impacts from an operating intertidal geoduck farm in Samish
14 Bay. The farm in this study was attributed to having created an artificial edge to eelgrass, which
15 Ms. Meaders acknowledged distinguishes it from the proposed Farm in this case. Mr. Horwith
16 examined potential spillover effects to eelgrass in subsequent areal zones that spread away from
17 the farm, and found both positive and negative effects. Meaders Testimony. In particular, and to
18 a statistically significant degree, he found higher shoot density and lower shoot size in summer
19 within the first few zones. Meaders Testimony; Ex. R-167 at pp. 13, 25 (Reference #38); Ex. R-
20 121; *see also* Ex. R-61.

1 [41]

2 Interpreting the possible spatial extent of impacts found in his study, however, Mr.
3 Horwith was fairly circumspect in his conclusions, and stated only that:

4 If we interpret any difference from the reference zone as evidence of a spillover
5 effect, then there is essentially just as much evidence for spillover effects 3 to 9
6 meters from the farm as there is from 0 to 3 meters. There is much less evidence
7 for spillover effects more than 9 m from the farm.

8 Ex. R-121. He also noted that recovery of eelgrass from observed impacts took at least two
9 years post-harvest, and that the magnitude of the difference in impacts between the zones
10 actually increased post-harvest—which led him to conclude that, while harvest may be a driver
11 for spillover effects, other aspects of geoduck farming also likely contribute to spillover effects.

12 Ex. R-121.

13 [42]

14 Although acknowledging the limited use of the study results to the proposed Farm, Ms.
15 Meaders nonetheless relied on this study as identifying a maximum spatial extent for spillover
16 effects from geoduck harvest that is limited to nine meters (the end of the second zone in the
17 study). She further testified that, in her opinion, nine meters overestimates the potential for
18 spillover effects at this Site. Meaders Testimony. This opinion is not adequately supported by
19 the Horwith Study.

20 [43]

21 Ms. Meaders testified that she relied most heavily on the Pearce Study because it actually
looked at effects from a subtidal geoduck harvest on nearby eelgrass. The test plot in the Pearce

1 Study was planted five meters from an existing eelgrass bed. Results post-harvest showed no
2 change in parameters (biomass, shoot length, or shoot density) in the eelgrass bed or in samples
3 downcurrent from the harvest plot. Suspended sediments were not generally perceived beyond
4 five meters from the harvest plot, with levels measured comparable to those during a calm sea,
5 and lower than those during a winter storm event. Meaders Testimony; Ex. R-167 at p. 14; Ex.
6 R-68 (slide labeled “Summary”). However, Mr. Pearce apparently requested that the report on
7 his study (Ex. P-116) not be relied upon as evidence at hearing, as it has not been peer reviewed
8 or published—and Appellants cautioned the Board not to rely upon it. Meaders Testimony
9 (relying on a personal communication with Mr. Pearce); Ex. R-167 at pp. 14, 25 n. 35 (same);
10 Statement by Robert M. Smith (counsel for the Applicants); *see also* Ex. R-68.

11 [44]

12 To the extent the Board considers the Pearce Study, the Board finds it provides limited
13 applicability to the current proposed Farm. The planting densities and duration of harvest
14 activities in the Pearce Study are different from those of the proposed Farm in this case. In the
15 Pearce Study, a 1.5-acre subtidal plot (60 x 100 m²) was planted with geoducks at a density of
16 1.58 individuals per one-half square meter (approximately five square feet). Ex. P-116 at pp. 7-
17 8. The edge of the study plot was five meters seaward of an eelgrass bed. *Id.* at 48. Geoducks
18 were harvested over a two-day period, with a total of 1,554 harvested. *Id.* at 12. In contrast, the
19 tubes at the proposed Farm will be placed approximately 15 inches apart on center and will be
20 planted with three to four seeds each. Ex. R-24 at p. 6. Harvesting activity will be more intense
21 as it will occur five to eight days at a time, for up to four hours on 0.1 to 0.8 acres depending on

1 the number of harvesters. Ex. R-1 at p. 14. Although no precise figure was presented, it is
2 anticipated that the harvested quantities of geoducks from the proposed Farm will substantially
3 exceed those in the Pearce Study.

4 [45]

5 It is also not clear that the Pearce Study assessed subtidal conditions like those found at
6 this Site, including the high wind and wave activity translating into a higher energy subtidal
7 environment at the Site.

8 [46]

9 In support of the Pearce Study, Ms. Meaders also referenced a personal communication
10 with Dr. Jennifer Ruesink at the University of Washington in which Dr. Ruesink reportedly
11 conveys her “similar observation” that “the effects of geoduck farming are likely restricted to the
12 farm footprint, and buffers would be important to consider primarily [for] access issues.”
13 Meaders Testimony; Ex. R-167 at p. 14. However, as Ms. Meaders herself characterizes, most
14 of Dr. Ruesink’s studies are “in relation to the direct effect of harvest operations and subsequent
15 recovery, but not necessarily the distance that would protect eelgrass resources adjacent to
16 geoduck operations.” Ex. R-86. Dr. Ruesink’s work is of limited or no applicability in this case
17 because it analyzed the effects of geoduck planting and harvesting directly within an eelgrass
18 bed. Ex. R-20 at p. 3; Ex. R-87.

19 [47]

20 The Board finds these studies do not provide sufficient scientific support for Ms.
21 Meaders’ opinion that the buffers imposed will adequately protect eelgrass at this Site, and thus

1 finds Ms. Meaders' opinion on the protectiveness of the smaller buffer unpersuasive. The Board
2 is left with no real analysis in the record that assesses spillover effects to nearby eelgrass for a
3 similarly-scaled geoduck farm operating in a higher energy subtidal environment.

4 [48]

5 In the absence of better information on a protective buffer size, the County and the
6 Applicants apparently shifted to monitoring and adaptive management to justify the reduced
7 buffer size. Ms. Meaders and Mr. Risvold both stated that their comfort with the smaller buffer
8 was in part based on the fact that monitoring would be done to assess its effectiveness at
9 protecting the eelgrass bed. Meaders Testimony; Risvold Testimony.

10 [49]

11 Both qualitative and quantitative monitoring will be done two times a year, and six
12 months before harvesting. The Permit requires some of this monitoring be done in various
13 conditions. In addition, monitoring will be performed under an agreement in which Mr. De
14 Tienne would permit DNR to assess the effects of the Farm on eelgrass compared to a control
15 plot on state lands, to help assess more generally the potential impacts of geoduck aquaculture.
16 De Tienne Testimony; Meaders Testimony; Ex. R-1 at pp. 30-31 (Conditions 25 and 26.D)
17 (incorporating MDNS mitigation conditions and eelgrass surveys); Ex. R-3 at p. 9 (MDNS
18 mitigation condition # 11); Ex. R-34.

19 [50]

20 An unspecified approach to adaptive management will ensue based on the monitoring
21 results. The Applicants stated a commitment to changing the buffers to be more protective if

1 monitoring shows any impacts. De Tienne Testimony; Meaders Testimony. The commitment to
2 change the buffers is not reflected in the Permit's terms or conditions, however. Ex. R-1;
3 Risvold Testimony. Mr. Risvold agreed it would have been "prudent" to include a permit
4 condition specifying that the buffers would change if monitoring proves them not protective.
5 Risvold Testimony.

6 [51]

7 Based on the preceding Findings of Fact, the Board finds that the Coalition has met its
8 burden to show that the Permit conditions are inadequate to protect eelgrass. The ten-foot
9 landward buffer, and 25-foot seaward buffer (50% of which has already been reduced to ten feet,
10 with further reduction possible), represents the lowest sized buffer that could have been applied
11 from the range of buffers typically applied to protect eelgrass. The Board finds a lack of
12 complete and/or reliable scientific evidence in the record to support a buffer of this size at this
13 Site, given the scale and density of the commercial geoduck farming proposed in both intertidal
14 and subtidal zones, and the conditions found at this Site.

15 [52]

16 The Board also finds an overreliance on monitoring and adaptive management to mitigate
17 impacts. This overreliance is particularly concerning given that the Permit does not incorporate
18 any required implementation for change—*i.e.* to increase the buffer should monitoring prove the
19 need for greater protection. There may be real consequences from selecting the small buffer
20 here, given the particularly fragile state of eelgrass at this Site. Neither the Applicant nor the
21 County considered the extent to which eelgrass might persist in a degraded state, that the past

1 survey(s) may consequently have set what is an already-degraded baseline for assessing eelgrass,
2 and that no area for potential expansion was included in the buffer. Instead, the degraded Site
3 will be used for aquaculture in a manner that will ensure no further recovery.

4 [53]

5 Finally, the Board finds the Applicants cannot limit their assessment exclusively to on-
6 site (on-property) impacts to eelgrass, but must look at impacts to eelgrass off-property as well.
7 The eelgrass bed at this location runs continuously along the Henderson Bay shoreline, extending
8 beyond Farm Site boundaries, but the Applicants did not consider impacts of farming activities
9 to eelgrass on adjacent properties. They only considered whether sedimentation from subtidal
10 operations would flow towards shore and into the eelgrass bed at the Farm Site. Yet Ms.
11 Meaders admitted that sedimentation from intertidal harvest, in particular, would travel laterally
12 along the shore, and that this would be more problematic. Meaders Testimony.

13 **C. Impacts to Herring**

14 [54]

15 Most testimony regarding herring was directed at the need to protect eelgrass as potential
16 spawning habitat. Herring spawn in Burley Lagoon due to excellent habitat and good water
17 flushing. The nearest documented herring spawning habitat from the Farm Site is 0.3 miles to
18 the northwest, or roughly 1,500 feet away, on the other side of Henderson Bay. Meaders
19 Testimony; Ex. R-67; Ex. R-167; Penttila Testimony. This local stock (the Purdy stock) is now
20 recognized as the largest known herring stock in Pierce County, but was only recently discovered
21 in 2008. This means that surveys to date have been limited. Penttila Testimony; Ex. P-4 at pp.

1 2-4; Exs. P-24-32; Exs. P-34-35. As a fisheries expert who has conducted approximately 800
2 herring spawn surveys over the past three decades, it was Mr. Penttila's unopposed view that the
3 Purdy stock's habitat is not yet completely known, and that additional surveys would be
4 necessary to accurately determine the full spatial extent of their spawning habitat. It was also his
5 unopposed opinion that the distance from where the Purdy stock have been documented to spawn
6 to the Farm Site would be a small spatial leap for them to make in subsequent seasons, making it
7 highly likely that herring will spawn at the Farm Site in subsequent years. Penttila Testimony;
8 Ex. P-4. The Board finds that eelgrass at the Farm Site is, therefore, a potential spawning habitat
9 for Purdy stock herring and it is highly likely herring will spawn in the eelgrass beds on and
10 around the Farm Site. The Board finds that, because the Permit fails to adequately protect
11 eelgrass, it also fails to adequately protect herring, which depend on eelgrass for spawning
12 habitat.

13 [55]

14 Only limited testimony was presented on any direct impact to actual spawning activity.
15 Mr. Penttila testified that the herring spawning work windows should be changed from January
16 15 through March 31 to February 1 through April 15—in recognition of the unusually late
17 spawning season documented for the Purdy herring stock. Penttila Testimony. There is no work
18 window imposed in the Permit for herring spawning, however, just the “[m]inimization of
19 activity within the beach” (between October 1 and April 30) for potential sand lance and surf
20 smelt spawning. Ex. R-1 at p. 31 (Condition 26.H(1)). The Permit instead requires that aquatic
21 vegetation (including eelgrass) be inspected for the presence of herring spawn and, if found, that

1 all activities cease until the eggs have hatched. Ex. R-1 at p. 31-32 (Condition 26.I). As Mr.
2 Penttila acknowledged, this incorporates the same recommendation for protecting the potential
3 spawning habitat of forage fish that he made in a previous hearing. Penttila Testimony. Because
4 we reverse the Permit on other grounds, we need not address these more direct conditions for
5 protecting herring spawning activity at this Site.

6 **D. Cumulative Impacts**

7 [56]

8 The portion of the Farm Site waterward of -4.5 tidal elevation is designated a shoreline of
9 statewide significance. Ex. R-2 at p. 2. The Farm will be the first permitted geoduck
10 aquaculture in the Carr Inlet/Henderson Bay area, and the first geoduck operation since the
11 demise of the unpermitted Washington Shellfish operation that was forced to close. Booth
12 Testimony; Wenman Testimony.

13 [57]

14 There is a long history of oyster cultivation in Burley Lagoon at the tip of Henderson
15 Bay, but only about 15-20 acres have been farmed historically. There are no other geoduck
16 farms in Henderson Bay or Burley Lagoon. The closest geoduck farm is on the tip of Key
17 Peninsula, which is the Longbranch facility. The state wildstock and geoduck fishery has tracts
18 throughout Puget Sound, including Henderson Bay. Booth Testimony.

1 [58]

2 There are six pending applications for geoduck farms in Pierce County. New aquaculture
3 projects in this area have been approved, proposed, or are contemplated for proposal. A manila
4 and littleneck clam farm has been approved on the other side of Henderson Bay. In addition,
5 Taylor Shellfish, which is now harvesting oysters and clams on 79 acres, just proposed a new
6 project in Burley Lagoon. There is also an additional geoduck farm intended to be located
7 northeast of the Farm Site that will be virtually on forage fish habitat. Bed preparation has been
8 witnessed since 2012 near the Farm Site. Mr. Booth confirmed he understood there may be an
9 attempt in the near future to submit another geoduck application. Mr. McCrae of Washington
10 Shellfish submitted an application in 2002, but was recently told he needs to submit a new one if
11 he wishes to proceed with aquaculture operations. De Tienne Testimony; McDonnel Testimony;
12 Penttila Testimony; Newell Testimony; Booth Testimony; Ex. P-117; Ex. P-139; Ex. P-142c.

13 **E. Recreational Impacts**

14 [59]

15 Witnesses presented evidence that the gear used in aquaculture—including the nets and
16 PVC pipes specifically used in geoduck aquaculture—can break and/or escape and can result in
17 significant marine debris. Newell Testimony; Ex. P-127; Macomson Testimony; Ex. P-129;
18 McDonnel Testimony; Wenman Testimony; Ex. P-128; Paradise Testimony. Additionally, the
19 high winds and waves in this area would make it more likely that gear will come loose. The
20 County has received increased complaints regarding aquaculture debris in Burley Lagoon, with
21 loose netting being a particular complaint. Booth Testimony; Ex. P-111. The Permit requires

1 beach patrols be done weekly at the proposed Farm Site, and within one day of storm events to
2 retrieve any debris. Ex. R-1 at p. 30 (Condition 25) (incorporating MDNS mitigation conditions
3 and eelgrass surveys); Ex. R-3 at p. 9 (MDNS mitigation condition # 8). This was a mitigation
4 measure premised on the assumption that debris will occur. Booth Testimony.

5 [60]

6 Numerous witnesses testified that they use the area around the proposed Farm Site to
7 swim, scuba dive, kayak, windsurf, and otherwise enjoy the natural environment. *See, e.g.,*
8 Paradise Testimony; Newell Testimony; Macomson Testimony. In particular, the high waves in
9 the area make it a popular windsurfing site. The Farm Site is located roughly 1,500 feet west of
10 Purdy Sand Spit Park/Wauna Public Boat Launch. Windsurfers often begin there and ride
11 towards the area nearer the Farm Site. It is possible some could end up closer to the Farm Site.
12 Paradise Testimony; Newell Testimony; Ex. R-2 at p. 2 (proximity to boat launch). In addition,
13 many of the witnesses recounted incidents in which they or others who were boating, swimming,
14 or otherwise recreating, became ensnared in loose netting, or had their recreational or boating
15 gear damaged or ensnared. This was presented as a safety concern, given the potential for
16 individuals to drown or otherwise come to harm. Broken PVC tubes left in place intertidally
17 have also injured people walking or otherwise recreating on the tidelands. Finally, concerns over
18 potential harassment by farm owners were expressed, based on similar experiences elsewhere.
19 Newell Testimony; Wenman Testimony; McDonnel Testimony; Paradise Testimony; Macomson
20 Testimony; Ex. P-103; Ex. P-106; Ex. P-109.

1 [61]

2 There are no conditions in the Permit to protect recreational users in the area. The Permit
3 requires that “[b]uoys on anchors shall be placed intervisibly along and at angle points on any
4 ownership boundaries that extend below extreme low tide, for the harvest term,” but this a
5 measure for the harvest divers. Ex. R-1 at p. 29 (Condition 10). No conditions were added
6 because, in the County’s view, impacts to recreational users would be unlikely. Mr. Booth
7 testified that this is especially true given the subtidal nature of the Farm, in which the PVC tubes
8 planted (which protrude two to three inches above the substrate), will be fully submerged. Booth
9 Testimony.

10 [62]

11 The Board finds that the recreational use in this area, and in particular its popularity for
12 windsurfing, makes this proposed Farm unique from past geoduck farms reviewed by the Board.
13 While the Board agrees that planted PVC tubes submerged at this subtidal location pose a
14 minimal risk to recreational users, the extent to which other risks may exist nonetheless remains
15 unclear based on the testimony. Of particular concern, is the likelihood that boaters or
16 windsurfers might unknowingly cross into the Farm Site at a time when canopy nets or other
17 gear that could pose a risk are exposed, or that more experienced windsurfers may come in
18 contact with the subtidal structures. In case of a future application at this Site,⁵ any permit issued
19 should contain a condition to better address the unique recreational use of this area and mitigate

20 _____
21 ⁵ While we have reversed the Permit in this case, the decision does not completely rule out that a future operation, with appropriate analysis, buffers, and conditions that address site characteristics and limitations, could not be permitted under the SMA.

1 for any farm activities and use of aquaculture gear that could pose a risk of harm to windsurfers
2 or others.

3 **F. Impacts to the Benthic Environment, Forage Fish, Juvenile Salmon, Whales, Other**
4 **Aquatic Organisms, and Bald Eagles**

5 [63]

6 As noted above in the Findings of Fact, eelgrass serves as habitat and refuge for juvenile
7 salmon. It also serves vital ecological roles that include carbon-fixing/sequestration, the
8 production of organic matter and detritus (which forms the basis of the food chain), and the
9 provision of physical habitat for use by adult marine species and as a refuge and nursery area for
10 juvenile life stages. Because of these vital ecological roles served by eelgrass for benthic
11 species, forage fish, and salmon, the Board finds that adverse impacts to eelgrass at this Site are
12 also likely to adversely affect the ability of these other dependent species to utilize or benefit
13 from eelgrass habitat. The Board thus finds on this basis that the Coalition has also met its
14 burden to show inadequate protection for those species in addition to herring that are dependent
15 on eelgrass—including juvenile salmon, forage fish, and other benthic organisms.

16 As further addressed below, however, the Board finds that Petitioners otherwise failed to
17 show any direct adverse impacts would occur from Farm activities to the benthic environment, to
18 juvenile salmon or forage fish, to whales, to other aquatic organisms, or to terrestrial species like
19 bald eagles.
20
21

1 months. Finally, as discussed above, herring are known to spawn nearby. Penttila Testimony;
2 Ex. P-4 at pp. 5-8; Exs. P-36 through P-39.

3 [67]

4 Mr. Penttila provided no evidence on the diet of geoducks and admits that published data
5 on the diet of geoducks is lacking. Despite insufficient data, his view is that theoretically,
6 geoducks could ingest zooplankton, and he relied on studies that found a large variety of other
7 bivalves ingest zooplankton and cumulatively create competition for food source. He cited
8 published data that suggests an increase in filtration rates and prey sizes occurs with increasing
9 bivalve body size, and asserts that (based on geoduck clams being among the largest clams in the
10 region) it should be assumed they may be capable of ingesting significant amounts and larger-
11 sized zooplankton, including forage fish larvae. Penttila Testimony; Ex. P-4 at pp. 5-8, 19-21;
12 Exs. P-50-56. However, Mr., Penttila's testimony provides an insufficient scientific basis for the
13 Board to find that geoduck feeding practices will affect forage fish. As the Board has found
14 previously—and which has not been adequately controverted by the expert testimony provided in
15 this case—"the weight of scientific evidence supports a finding that it is unlikely that the
16 geoducks' feeding practices will affect forage fish." *Lockhart*, SHB No. 13-006c at FF 29, pp.
17 13-14. The Board finds insufficient evidence that geoducks will cause an adverse impact to
18 forage fish by competing for food or ingesting forage fish larvae.

1 nonetheless be cumulative. He surmised that the process of hydraulic injection in the water
2 column during harvest could result in levels of turbidity ten times greater than background or
3 allowable levels.⁶ He suggested that work windows extending through April be imposed to
4 protect juvenile salmonids. Daley Testimony; Exs. P-58-60, P-64-65, P-70.

5 [70]

6 In response, Ms. Meaders noted that studies show the disturbances from geoduck
7 operations are of short duration, localized, and infrequent, and that juvenile salmonids tend to
8 avoid the areas disturbed. Meaders Testimony; Ex. R-167 at p. 18.

9 [71]

10 The Board finds that Mr. Daley's testimony did not support a finding that adverse effects
11 would occur from this proposed Farm. He provided no evidence or analysis to support his
12 opinion on the proposed Farm operation's direct impacts on juvenile salmon. His estimate on
13 turbidity levels was based on random visual observations. Further, his opinion was not that
14 adverse effects would occur from the proposed Farm, but that the potential for impacts from
15 geoduck aquaculture in general should be studied before any new projects are permitted. This
16 level of analysis is not sufficient to meet Petitioners' burden of proof. The Board finds
17 insufficient evidence that the Farm will cause direct impacts to salmon, other than impacts to the
18 eelgrass used as habitat and refuge for juvenile salmon.

19
20

⁶Mr. Garrison also testified on conditions related to turbidity at the Site. He provided photographs showing that
21 surface water from an outfall enters the Bay at one location, and produces some level of turbidity at that location
onshore. Garrison Testimony; Ex. PG-2. No measurement of turbidity or any analysis was provided by any witness
for how this would translate to impacts from the proposed Farm, however.

1 [74]

2 5. Other aquatic organisms

3 Sand dollars, crabs, and starfish (sea stars) can all be found at the Farm Site. Sand
4 dollars, in particular, are found extensively in the eelgrass beds onsite. Newell Testimony.

5 [75]

6 Evidence was presented that aquaculture uses destructive methods to “manage” aquatic
7 organisms like crab, sea stars, and sand dollars as “pests” all year round. Newell Testimony; Ex.
8 P-87. Damage to aquatic organisms like sand dollars has been observed from other aquaculture
9 operations. Macomson Testimony; Ex P-106. Further, a 2011 report prepared by the
10 Applicants—which the County later questioned—stated that it could take up to five days to
11 relocate sand dollars. Ex. P-1421 at p. 50.

12 [76]

13 The Permit contains the following condition to protect such aquatic organisms:

14 It is expected that relocation of beach features and wildlife will not be necessary.
15 Tube placement and farming activities are to be done in a manner that
16 accommodates existing habitat features (such as, but not limited to, logs and
17 rocks) and wildlife (such as, but not limited to, sand dollars and sea stars).
Where the relocation of such features is unavoidable, they are to be relocated as
minimally as possible and no farther than to another section of the beach, within
the same parcel and at the same tidal elevation.

18 Ex. R-1 at p. 30 (Condition C.26.A).

19 [77]

20 There was insufficient evidence to convince the Board that this condition will not
21 adequately protect these species. The Board finds the Petitioners failed to meet their burden to

1 prove any more direct adverse impacts to other aquatic organisms like sand dollars and sea stars,
2 given the terms of the Permit, other than impacts to eelgrass as habitat for these organisms.

3 6. Bald Eagles

4 [78]

5 The Henderson Bay area is host to many different bird species, including bald eagles.
6 Evidence was presented that aquaculture nets can ensnare birds; one incident documents a bald
7 eagle that became ensnared in a canopy net. Newell Testimony; Wenman Testimony; P-128.
8 This level of analysis is not sufficient to meet Petitioners' burden of proof. The Board finds that
9 while this speculative risk may exist, there was insufficient evidence to support a finding that the
10 Farm poses an actual risk of environmental harm to bald eagles.

11 [79]

12 The Board finds insufficient evidence of adverse impacts to bald eagles or other birds
13 from the proposed Farm. However, in case of any future application at this Site, the Board
14 would suggest that the 600-foot buffer from any existing bald eagle nests, which was proposed
15 by the Applicants as an adaptive management conservation measure in their Biological
16 Evaluation, be made a permit condition. See Ex. R-1 at p. 7, ¶ 11; Ex. R-24 at p. 76.

17 [80]

18 Any Conclusion of Law deemed to properly be considered a Finding of Fact is hereby
19 adopted as such.

20 Based on the foregoing Findings of Fact, the Board enters the following:
21

1 **CONCLUSIONS OF LAW**

2 [1]

3 The Board dismissed many of the legal issues in this case prior to the hearing, on motions
4 to dismiss and for summary judgment. The hearing focused only on Legal Issue No. 15 (with
5 subparts), which states:⁷

6 Legal Issue No. 15: Was the Pierce County Hearing Examiner's approval of the
7 deTienne SSDP done in violation of RCW 90.58.020 (and other subsections included in
part B) and PCC 20.24.020 (and other subsections included in part B) because:

- 8 a. The authorized development in this high value site that includes a Shoreline of
9 Statewide Significance does not protect against adverse impacts of harm, damage,
and loss of ecological functions, loss of the natural environment and values of the
shorelines?
- 10 b. The authorized development does not promote and enhance the public interest
11 including the quality of life, public's opportunity to enjoy the physical and aesthetic
12 quality of the shoreline, preservation of the natural environment, safety, and intensive
recreational uses afforded to the public?
- 13 c. The authorized development is not consistent with the overarching goal of protecting,
14 preserving, restoration of Washington's natural shoreline or consistent with related
state agency goals and management actions?
- 15 d. The authorized development does not preclude damage to specific fragile areas and
16 existing aquatic resources and does not maintain the highest possible levels of
environmental quality and compatibility with native flora and fauna?
- 17 e. The authorized development with perpetual operations does not preclude damage to
18 the natural ecosystem and ecology of the area including, but not limited to, the
following issues: forage fish, salmon, native species, prey resources, forage fish
eggs, forage fish larvae, crab larvae and other intertidal species eggs and larvae?
- 19 f. The authorized development does not preclude damage by allowing plastic netting
20 that decreases biodiversity, increases siltation/sedimentation, increases organic

21 ⁷ Though the Garrisons were dismissed as parties after all their legal issues were dismissed, they were granted limited intervention to participate on Legal Issue No. 15(d).

1 matter, entangles aquatic life as well as poses a safety risk to the public?

- 2 g. The authorized development does not prevent the standard operating procedures that
3 exceed the noise limits regardless of date or time?
- 4 h. The authorized development allows significant interference with the public's use of
5 the water for safe swimming, water skiing, scuba diving, windsurfing, bottom fishing,
6 dropping an anchor, or boating?
- 7 i. The authorized development allows significant interference in navigational and
8 recreational use of the area which violates the public trust in these shorelines?
- 9 j. The authorized development does not protect against aquaculture operations that
10 cannot be maintained in a safe and sound condition in this well-known wind/high
11 energy area?
- 12 k. The authorized development and the arbitrary buffers do not protect the eelgrass and
13 macroalgae conservation areas as required by Pierce County critical areas
14 regulations?
- 15 l. The authorized development has not completed the mandatory Fish and Wildlife
16 Habitat Area approval prior to this permit being issued for review and consistency?
- 17 m. The authorized development failed to provide adequate conditions to properly
18 mitigate for impacts to the shoreline areas as to insure no harm, no loss of ecological
19 function, minimize insofar as practical any resultant damage to the ecology, forage
20 fish, juvenile salmon migratory corridor, or the interference with the public's use of
21 the water?
- n. The authorized development does not require the respondent (deTienne) to mitigate
or restore eelgrass degraded during past geoduck aquaculture activities in this area?
- o. The authorized development does not require a record of survey to be filed prior to
any activity on this proposed high value site and surrounding area that was necessary
to determine the true and full impacts upon the critical habitat and prevent future
damage?
- p. The authorized development does not recognize and protect private property rights
consistent with the public interest?

- 1 q. The authorized development does not control pollution, which includes marine debris
aquaculture pollution?
- 2 r. The authorized development does not protect the first subtidal critical habitat used for
3 geoduck aquaculture without necessary science?
- 4 s. The authorized development failed to consider the cumulative impacts to the ecology
5 and environment of the shorelines of this area and region due to the adverse effects
arising from its operations?

6 [2]

7 Legal Issues No. 15(o) and (p) present similar private property concerns (e.g., boundary
8 surveys required under other authority of law) as issues already dismissed on which the Board
9 previously ruled it lacked subject matter jurisdiction. Legal Issues No. 15(o) and (p) are thus
10 dismissed for the reasons expressed in the Board's Order on Motions for Dismissal and
11 Summary Judgment. In addition, no testimony or evidence was presented at hearing to support
12 Legal Issue No. 15(g); it will therefore be considered waived and the Board will not consider it.
13 Legal Issues No. 15(a)-(f), (i)-(n), and (q-s) remain for resolution and are addressed by general
14 subject area below.

15 [3]

16 The Board has jurisdiction pursuant to RCW 90.58.180. The scope and standard of
17 review for this matter is *de novo*. WAC 461-08-500(1). The Petitioners have the burden of
18 proof. WAC 461-08-500(3).

19
20
21

1 **A. The Shoreline Management Act and Pierce County Code**

2 [4]

3 Shoreline development in Washington must be consistent with the policies and
4 procedures of the Shoreline Management Act (SMA), its associated regulations, and the
5 applicable local shoreline master program. RCW 90.58.140(1); WAC 173-27-150.

6 [5]

7 Aquaculture is encouraged in Washington in numerous ways. The SMA identifies a
8 preference for water-dependent uses of the shoreline, with aquaculture being a “desired and
9 preferred water-dependent use of the shoreline.” RCW 90.58.020. The Board has upheld
10 various permits for aquaculture involving geoducks as consistent with this standard. *See*
11 *Lockhart*, SHB No. 13-006c at p. 30, CL 6 (*citing Longbranch*, p. 23, CL 12).

12 [6]

13 The Pierce County Shoreline Master Program (SMP), implemented through the Pierce
14 County Code (PCC), also encourages use of shoreline areas for aquaculture in areas well-suited
15 for it, giving priority for aquaculture uses to shoreline areas that have the prerequisite qualities in
16 order to protect the county’s aquaculture potential. PCC 20.24.020(A)(1), 20.24.020(A)(10).

17 [7]

18 As noted in the Findings of Fact, the Farm Site is located in the Rural-Residential
19 shoreline environment. Aquaculture is allowed in this shoreline environment, with geoduck
20 aquaculture “permitted outright” subject to obtaining a shoreline substantial development permit.
21 PCC 20.10.010; PCC 20.24.030. As also noted in the Findings, the portion of the Farm Site

1 waterward of -4.5 tidal elevation is designated a shoreline of statewide significance. Ex. R-2 at
2 p. 2; Ex. R-3 at p. 1.

3 [8]

4 There is a balance inherent in the SMA, its associated regulations, and the PCC that,
5 while seeking to encourage aquaculture, also seeks to prevent damage to the shoreline
6 environment, and avoid interference with recreational use. The SMA “contemplates protecting
7 against adverse effects to the public health, the land and its vegetation and wildlife, and the
8 waters of the state and their aquatic life, while protecting generally public rights of navigation
9 and corollary rights incidental thereto.” RCW 90.58.020.

10 Guidance provided by Ecology for developing local shoreline master programs also states
11 that:

12 Local government should consider local ecological conditions and provide limits
13 and conditions to assure appropriate compatible types of aquaculture for the
14 local conditions as necessary to assure no net loss of ecological functions.

14 WAC 173-26-241(3)(b).

15 [9]

16 Though the term “no net loss” does not appear in Pierce County’s implementing code,
17 County witness Mr. Booth testified the concept is embodied in the code’s protection for
18 environmental values. The PCC specifically requires protection for the shoreline environment
19 from aquaculture as follows:

20 Aquaculture operations shall be conducted in a manner which precludes damage
21 to specific fragile areas and existing aquatic resources. These operations shall

1 maintain the highest possible levels of environmental quality and compatibility
2 with native flora and fauna.

3 PCC 20.24.020.A(3).

4 The PCC also recognizes that impacts on navigation and recreation can be minimized:

5 Conflicts between the aquaculture use and the navigational access of current
6 upland residents, and intense recreational boating, commercial fishing, and other
commercial traffic can be minimized.

7 PCC 20.24.020.A(5).

8 [10]

9 Neither the SMA nor the PCC require the County to issue a Fish and Wildlife Habitat
10 Area approval prior to issuing an SSDP. On this basis, the Board rejects the Coalition's
11 contention in Legal Issue No. 15(1) that this was required.

12 [11]

13 In addition, the "no net loss" concept does not assume no impacts, but instead recognizes
14 that future development will occur. *See Ecology's SMP Handbook, ch. 4 at p. 2.* Aquaculture is
15 explicitly recognized as a statewide interest that, when properly managed, does not adversely
16 impact recreation or protection for the shoreline environment, and results in long-term over
17 short-term benefits for the State:

18 [Aquaculture] is of statewide interest. Properly managed, it can result in long-
19 term over short-term benefit and can protect the resources and ecology of the
20 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.

21 WAC 173-26-241(3)(b).

1 [12]

2 Shorelines of statewide significance receive special analysis under the SMA. The
3 legislature declared that the interest of all of the people shall be paramount in the management of
4 shorelines of state-wide significance. RCW 90.58.020. The SMA provides the following
5 particular order of preference for uses on these shorelines:

- 6 (1) Recognize and protect the state-wide interest over local interest;
- 7 (2) Preserve the natural character of the shoreline;
- 8 (3) Result in long term over short term benefit;
- 9 (4) Protection of the resources and ecology of the shoreline;
- (5) Increasing public access to publicly owned areas of shorelines;
- (6) Increasing recreational opportunities for the public in the shoreline; and
- (7) Providing for other elements defined in RCW 90.58.100 as necessary and appropriate.

10 RCW 90.58.020.

11 [13]

12 The Coalition argues that Farm operations and/or related marine debris may or will
13 impact eelgrass, kelp, forage fish, salmon, whales, other aquatic life (e.g., sand dollars and sea
14 stars), and bald eagles, and that any loss of ecological function is a “net loss” that would be
15 inconsistent with the SMA, its implementing regulations, and the PCC. They also allege
16 impairment or risk to recreational use of the shoreline from farm operations and/or debris that is
17 inconsistent with the SMA, its implementing regulations, and the PCC. Finally, they allege a
18 cumulative impacts analysis should have been required before the project was approved. In
19 short, they assert that special scrutiny should be afforded this project as the first subtidal geoduck
20 farm proposed for Henderson Bay, which encompasses a shoreline of statewide significance with
21

1 abundant aquatic life that includes eelgrass and nearby herring spawning, and which is popular
2 with windsurfers and other recreationalists.

3 [14]

4 The Board concludes that the facts in this case require reversal of the County decision to
5 issue this Permit. The Coalition met its burden to prove the Permit fails to offer adequate
6 protection for eelgrass and is thereby inconsistent with the SMA, implementing regulations, and
7 the local shoreline master program, and that a cumulative impacts analysis should have been
8 performed prior to approval of this aquaculture operation.

9 [15]

10 As noted in the Findings of Fact, the Coalition failed to meet its burden on the legal
11 issues related to marine debris, adverse impacts to the benthic environment, forage fish, salmon,
12 other aquatic organisms (other than as affected by inadequate protection of eelgrass), whales, or
13 birds. In addition, and although the Board recommended condition(s) to protect recreation,
14 evidence was insufficient to deny the Permit exclusively based on risks to recreational users.

15 **B. Lack of Adequate Protection for Eelgrass as a Fragile Aquatic Resource**

16 [16]

17 As noted in the Findings of Fact, eelgrass is of particular importance to the health of
18 Puget Sound. Eelgrass (*zostera* spp.) and macroalgae (kelp in the order laminariales) are
19 explicitly recognized in state regulations as a saltwater habitat of special concern based on the
20 essential functions they serve in the developmental life history of fish and shellfish. WAC 220-

1 110-250. They are also regulated under the County’s Critical Areas Ordinance.⁸ PCC Title 18E.
2 While not directly applicable, these regulatory protections acknowledge the importance placed
3 on eelgrass and kelp as a fragile aquatic resource. The SMA and PCC explicitly protect fragile
4 but vital aquatic resources, with protection of the shoreline environment as a particular
5 consideration for this shoreline of statewide significance. RCW 90.58.020(4); PCC 20.24.020.
6 A(3).

7 [17]

8 The Board concludes that Pierce County approved a permit with the smallest buffer
9 possible, in the absence of any scientific basis for such a small buffer. This small buffer, when
10 combined with an overreliance on monitoring and adaptive management, a lack of accounting for
11 off-site impacts, and the potential need for restoration and/or expansion of eelgrass made
12 particularly fragile from past commercial geoduck harvest activity at the Site, contravenes the
13 requirements in the SMA, its implementing regulations, and Pierce County’s SMP. In particular,
14 it contravenes the concept of “no net loss” and the local SMP requirement to “preclude[] damage
15 to specific fragile areas and existing aquatic resources” and “maintain the highest possible levels
16 of environmental quality and compatibility with native flora and fauna.” PCC 20.24.020.A(3);
17 WAC 173-26-241(3)(b).

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⁸ Though witnesses for both sides placed reliance on what constitutes “best available science” for assessing impacts from this proposed Farm, the Board notes this is a term used under the Growth Management Act (*see, e.g.*, WAC 365-195-900) that is not employed by the SMA, its implementing regulations, or the local PCC.

1 [18]

2 Although it is clear impacts to eelgrass will occur without an adequate buffer in place, the
3 lack of evidence on what size buffer would be adequate for a proposed project of this size,
4 density, and location in a high-energy subtidal environment, prohibits the Board from making
5 any definitive determination on a more appropriate buffer size within the ranges discussed in the
6 evidence. Rather than change the Permit's conditions, the Board will deny the Permit on this
7 basis.

8 **C. Lack of Appropriate Balance of Statewide Interests**

9 [19]

10 The Board further finds that the preferences and priorities normally provided to properly
11 mitigated and designed aquaculture in state and local regulation do not apply here. Pierce
12 County only prioritizes those projects that are situated in shoreline areas well-suited (i.e. having
13 the "prerequisite qualities") for aquaculture. PCC 20.24.020(A)(10). The fact that the Farm Site
14 here will be operated in a high-energy subtidal environment, bordering a continuous eelgrass bed
15 that provides spawning habitat for nearby herring, and habitat and refuge for other forage fish,
16 juvenile salmon, and various aquatic organisms—makes this Site one without the prerequisite
17 qualities for prioritizing it as an appropriate aquaculture site under PCC 20.24.020(A)(10).

18 [20]

19 These site-specific factors also elevate the importance of other statewide interests over
20 any preference given to aquaculture for this Site. The recognition of aquaculture as a preferred
21 use that is of statewide interest is premised on its proper design and management preventing

1 damage to the environment. Given the lack of protection for eelgrass and related ecosystem
2 values at this Site, the Board concludes that the Farm proposed is not consistent the SMA's
3 requirement that the interest of all people be paramount in the management of this shoreline of
4 statewide significance. RCW 90.58.020. In particular, the potential for impacts to eelgrass and
5 other dependent aquatic resources make this proposal one that does not "recognize and protect
6 the state-wide interest over the local interest," does not "result in long term over short term
7 benefit," and does not adequately "protect the resources and ecology of the shoreline." RCW
8 90.58.020(1), (3), (4). Further, because the Farm may negatively impact the public's use of the
9 area for windsurfing and other recreational uses, it does not "increase recreational opportunities
10 for the public in the shoreline." RCW 90.58.020(5).

11 Balancing these considerations as mandated by the SMA weighs in favor of denying the
12 Permit for this shoreline of statewide significance.

13 **D. The Need for a Cumulative Impacts Analysis**

14 [21]

15 Neither the County nor the Applicants performed a cumulative impacts analysis prior to
16 approval of the Permit. The Coalition, which did not challenge the MDNS issued for the project
17 under SEPA, argues this impacts analysis should have been required under the SMA, local
18 shoreline master program, and associated legal precedent.

19 While the SMA contains no mandate for a cumulative impacts analysis on review of an
20 SSDP, the Board has held it is not precluded from considering cumulative effects where
21 appropriate. *May v. Pierce County*, SHB No. 06-031 (2007); *see also Fladseth v. Mason County*,

1 SHB No. 05-026 (2007) at COL 13, pp. 21-22.; *Lockhart*, SHB No. 13-006c at COL 21-27, pp.
2 37-42. This is particularly true for “cases where there is a clear risk of harmful impacts to high
3 value habitat, loss of community uses, impacts to views or the loss of extraordinary aesthetic
4 values. *See May*, SHB No. 06-031 at COL 18, p. 30. The Washington Supreme Court has
5 confirmed that the Board's statutory duties encompass concern over the ultimate cumulative
6 impact of piecemeal development on state shorelines. *Fladseth*, SHB No, 05-026 at COL 13, p.
7 21, *citing Hayes v. Yount*, 87 Wn.2d 280, 288, 552 P.2d 1038 (1976). The Supreme Court has, in
8 fact, recognized that approval of one project can set a precedent for others to follow, and that it is
9 proper for the Board to consider cumulative impacts that might occur from the granting a
10 substantial development permit. *Id.*, *citing Skagit County v. Department of Ecology*, 93 Wn.2d
11 742, 750, 613 P.2d 121 (1980). As noted by the Board:

12 The Court said that, “[l]ogic and common sense suggest that numerous projects,
13 each having no significant effect individually, may well have very significant
14 effects when taken together.” *Skagit County*, 93 Wn.2d at 750 (quoting *Hayes* at
15 page 287). The *Skagit County* court went on to conclude that “[t]he SMA
16 recognizes the necessity for controlling the cumulative detrimental impact of
17 piecemeal development through coordinated planning of all development. RCW
18 90.58.020.” *Skagit County*, 93 Wn.2d at 750 (1980).

16 *Id.*

17 [22]

18 The factors the Board weighs in considering whether a cumulative impacts analysis is
19 required for an SSDP are listed below:

- 20 1. Whether a shoreline of statewide significance is involved;
- 21 2. Whether there is potential harm to habitat, loss of community use, or a significant
degradation of views and aesthetic values;

3. Whether a project would be a “first of its kind” in the area;
4. Whether there is some indication of additional applications for similar activities in the area;
5. Whether the local SMP requires a cumulative impacts analysis be completed prior to the approval of an SSDP;
6. The type of use being proposed, and whether it is a favored or disfavored use.

Lockhart, SHB No. 13-006c at COL 22, p. 38.

[23]

Factors 5 and 6 do not apply here. As noted above, the PCC allows aquaculture as a favored use, and also does not require a cumulative impacts analysis be performed for an SSDP. The rest of the factors do apply, and weigh in favor of a cumulative impacts analysis being required here.

[24]

This case is unique compared to the past geoduck farm proposals considered by the Board, for which the SSDPs issued by Thurston and Pierce Counties were upheld. The first geoduck proposal that the Board considered, in *Longbranch*, involved a 2.5-acre intertidal farm to be located on Key Peninsula in Pierce County. The shoreline at issue was not designated a shoreline of statewide significance. Eelgrass was not present, and herring did not spawn nearby. The Board found insufficient evidence of impacts in that case to warrant denial of the SSDP, and no evidence was presented of other similar projects proposed or approved to warrant a cumulative impacts analysis. *Longbranch*, SHB No. 11-019 (2012).

1 [25]

2 The second, most recent, geoduck case considered by the Board, *Lockhart*, involved four
3 projects proposed for Henderson Inlet in Thurston County (not to be confused with Henderson
4 Bay here, in Pierce County), each of which would impact less than 1.25 acres of intertidal
5 tidelands. Again, none were to be situated on a shoreline of statewide significance, no eelgrass
6 was present in the areas to be farmed, and no herring spawned nearby. The Board likewise
7 found insufficient evidence of impacts to warrant denial of the farm permits in that case. Though
8 the Board seriously considered whether to require a cumulative impacts analysis in that case, it
9 ultimately declined to do so. *Lockhart*, SHB No. 13-006c (2013).

10 [26]

11 This Farm's proposed location on a shoreline of statewide significance means that
12 particular consideration must be given to balancing the interests of aquaculture as one statewide
13 interest, with other statewide interests like the shoreline's ecological values and the public's
14 recreational use. This is the Board's first opportunity to consider the potential impacts of a
15 larger five-plus (5+)-acre geoduck farm proposed on a shoreline of statewide significance, where
16 extensive but fragile resources including eelgrass are present and where herring spawn nearby.
17 The proposed farm would be a first-of-its kind operation in an area where minimal aquaculture
18 already exists, where unauthorized practices have impacted fragile marine resources through
19 prior harvesting activity, where farm operations pose a potential harm to habitat and loss of
20 community recreational use, and where additional projects have either been approved, proposed,
21 or are likely to be proposed—including at least one similar project.

1 [27]

2 The careful review required for this shoreline of statewide significance weighs in favor of
3 requiring a cumulative impact analysis of the impacts that might result from granting the first
4 subtidal geoduck farm permit in Henderson Bay—in particular, to assess the potential for longer
5 term impacts to fragile resources like eelgrass, as well as unique use of the area by
6 recreationalists like windsurfers.

7 [28]

8 Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such.
9 Having so found and concluded, the Board enters the following

10 **ORDER**

11 For the reasons expressed above, Pierce County's issuance of SSDP No. 35-05 is
12 REVERSED, and the Permit is therefore DENIED.

13 SO ORDERED this 22nd day of January, 2014.

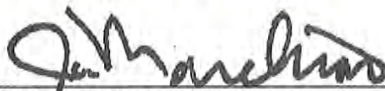
14 **SHORELINES HEARINGS BOARD**

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16 TOM MCDONALD, Chair

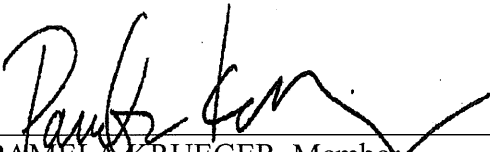
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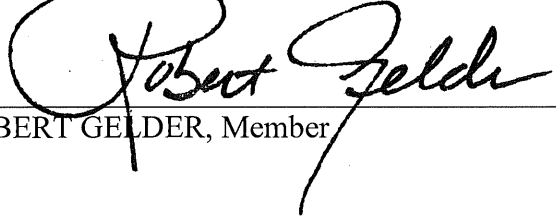
18 KATHLEEN D. MIX, Member

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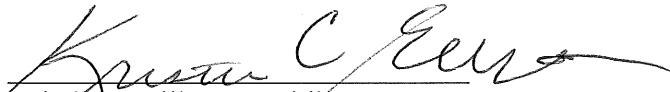
20 JOAN M. MARCHIORO, Member
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PAMELA KRUEGER, Member


ROBERT GELDER, Member

[See dissenting opinion]
GRANT BECK, Member


Kristie C. Elliott, Presiding
Administrative Appeals Judge