

**JEFFERSON COUNTY
BOARD OF COUNTY COMMISSIONERS**

AGENDA REQUEST

TO: Board of County Commissioners
Philip Morley, County Administrator

FROM: Stacie Hoskins, Planning Manager/Shoreline Administrator *SHA*

DATE: October 3, 2011

SUBJECT: Continued Board deliberation on *Draft Jefferson County Response to Ecology on Changes to the Locally Approved Shoreline Master Program (MLA08-475)*

ATTACHED: 1) Revised Draft Combined Response to Required Changes #13, 14 and 15; 2) Summary of Changes: Revised Draft Combined Response

STATEMENT OF ISSUE: The Board shall continue deliberations to provide staff final direction in preparing the formal *Jefferson County Response to Ecology on Changes to the Locally Approved SMP* as part of the process for final adoption by the state and by local ordinance. Documents regarding the topic of finfish aquaculture attached include:

1. Revised Draft Combined Response to Required Changes #13, 14 and 15 prepared to reflect previous Board deliberations and direction to staff;
2. Summary of Changes: Revised Draft Combined Response.

ANALYSIS/STRATEGIC GOALS/PROS and CONS:

Ecology's approval is regarding the December 7, 2009 *Locally Approved SMP*, submitted to Ecology on March 1, 2010 as Exhibit A of Jefferson County Resolution 77-09 (erroneously referenced in Ecology documents as 'Ordinance Number 77-09') as the proposed amendments to the Jefferson County Comprehensive Plan and Jefferson County Code. This SMP Comprehensive Update (MLA08-475) is required by law and must be completed by December 1, 2011.

In March 2010, the County submitted a *Locally Approved Shoreline Master Program (SMP)* to the Washington Department of Ecology (Ecology) for final review and approval, per RCW 90.58 and WAC 173-26. After a public review process, Ecology reviewed the County's proposed SMP update for consistency with state statutory and rule requirements.

On January 26, 2011 Ecology determined that the County has met the procedural and policy requirements of the Shoreline Management Act and the SMP Guidelines, pending some required changes. A letter from Ecology's director with three attachments outlines their conditioned approval, findings and conclusions, required and recommended changes. The County needs to consider the required changes and respond as to whether to accept or propose alternatives to those changes as part of the process for final adoption by the state and by local ordinance.

The Board considered Ecology's conditioned approval and after thoughtful deliberation proposed

**10/3/11 Revised Draft Combined Response for Required Changes #13, 14, and 15
Summary of Changes**

The following revisions are being considered for inclusion in the County's formal response to Ecology, as based on Board deliberations and direction to staff. The Revised Draft Combined Response shows line-in/line-out changes to the *Locally Approved SMP* text, not the 6/20/11 draft matrix released for public comment. Provided below is a summary of changes to highlight how the revised draft differs from the earlier draft version:

<i>Revised Draft Combined Response Page</i>	<i>LA-SMP Citation</i>	<i>How proposed revision differs from 6/20/11 draft matrix</i>
1	Article 2.1.17	Added new definition for 'in-water finfish aquaculture'
	Article 4.3	Revised Allowed Use Table to reflect text changes for finfish aquaculture;
		Reformatted table to better differentiate between above/below OHWM
2	Article 8.1.B.1 and 2	Added 'except aquaculture'
3	Article 8.2.A.8	Deleted 'Experimental forms of finfish aquaculture use/development in water bodies...as needed'
	Article 8.2.A.12	Added policy to not allow in-water finfish aquaculture
	Article 8.2.A.13	Deleted 'including net pens as defined in Article 2';
		Added 'viruses'
4	Article 8.2.B.1	Reinstated section B for outright prohibition on in-water finfish aquaculture;
		Reformatted numbering of remaining sections as needed.
	Article 8.2.C.1 to 6	In 1, 3, 5 and 6: Deleted 'including net pens' from ;
		In 4: Deleted 'in-water finfish aquaculture, including net pens, is prohibited.'
5	No changes	
6	Article 8.2.D.5.viii	Deleted 'including net pens'
7	Article 8.2.E	Added intro text 'All finfish aquaculture use/development shall also comply with the following, as applicable:'
	Article 8.2.E.3	Changed sub-title to 'Harmful Materials';
		Added 'viruses'
	Article 8.2.E.5	Deleted 'in-water and upland'

REVISED DRAFT Combined Response for Required Changes #13, 14 and 15:
 Add and delete text to read as follows:

Article 2 Definitions

E.15. Experimental aquaculture means aquaculture that ~~uses~~ cultivates new species, or uses growing methods or harvesting techniques that have not previously been cultivated used in the state of Washington and that differ significantly from common practice.

I.17. In-water finfish aquaculture means the farming or culture of vertebrate or cartilaginous food fish for market sale when raised in facilities located waterward of the ordinary high water mark in freshwater or saltwater water bodies, in either open-flow or contained systems. This includes net pens, sea cages, bag cages and similar floating/hanging containment structures and is intended to reflect the definition of 'marine finfish rearing facilities' (RCW 90.48.220), but does not include restoration/enhancement facilities used expressly to improve populations of native stocks.

Article 4. 3 Allowed Use Table

Table 1 - Permitted, Conditional and Prohibited Uses by Shoreline Environment Designation

P = Use may be permitted subject to policies and regulations of Program. May require Shoreline substantial development permit or Statement of exemption approval. See Articles 6, 7, 8, 9 and/or 10 for details.

C(a) = Conditional use administrative. See Articles 2, 9 and 10 for definition, criteria and process details.

C(d) = Conditional use discretionary. See Articles 2, 9 and 10 for definition, criteria and process details.

X = Prohibited use.

***** = Exceptions and limitations may apply as noted in the Program. See specific section for details.

	Environment Designations					
	Waterward of OHWM		Landward of OHWM			
Aquaculture:	Priority Aquatic	Aquatic	Natural	Conservancy	Shoreline Residential	High Intensity
<u>Net Pens/Finfish</u>	X*	X*	X*	X*	X*	X*
<u>In-water Finfish (including Net Pens)</u>	X	X	X	X	X	X
<u>Upland Finfish</u>	X	P*	X	C(d)	X	C(d)

Article 8.1 Agriculture

A. Policies – Add new policy:

8. The County recognizes the importance of local food production, both on land and in water areas, when properly managed to control pollution and prevent environmental damage. As consistent with the Jefferson County Comprehensive Plan, RCW 36.70A.030, and RCW 90.58.065, the commercial growth of food fish/finfish, shellfish and other aquatic plants and animals is considered agricultural production, however, for purposes of this Program, such food production that is water-dependent or located in water areas (“in-water”) should be managed as aquaculture and aquaculture activities, as defined in Article 2.

B. Shoreline Environment Regulations – Add and delete text to read as follows:

- 1. Priority Aquatic: New agricultural activities, except aquaculture, are prohibited. Farming and management of shellfish and other aquatic products are subject to the Aquaculture policies and regulations (Article 8 section 2) of this Program.**
- 2. Aquatic: New agricultural activities, except aquaculture, are prohibited.**

C. Regulations – Add new regulation:

- 3. Farming and management of food fish/finfish, shellfish or other aquatic plant or animal products shall be subject to the Aquaculture policies and regulations (Article 8 section 2) of this Program.**

Article 8.2 Aquaculture

A. Policies

- 1. Aquaculture is a preferred, water-dependent use of regional and statewide interest that is important to the long-term economic viability, cultural heritage and environmental health of Jefferson County.**
- 2. The County should support aquaculture uses and developments that:
 - i. Protect and improve water quality; and**
 - ii. Minimize damage to important nearshore habitats; and**
 - iii. Minimize interference with navigation and normal public use of surface waters; and****

- iv. Minimize the potential for cumulative adverse impacts, such as those resulting from in-water structures/apparatus/equipment, land-based facilities, and substrate disturbance/modification (including rate, frequency, and spatial extent).
3. When properly managed, aquaculture can result in long-term ecological and economic benefits. The County should engage in coordinated planning to identify potential aquaculture areas and assess long-term needs for aquaculture. This includes working with the Department of Fish and Wildlife (DFW), the Department of Natural Resources (DNR), area tribes and shellfish interests to identify areas that are suitable for aquaculture and protect them from uses that would threaten aquaculture's long-term sustainability.
4. Aquaculture use and development should locate in areas where biophysical conditions, such as tidal currents, water temperature and depth, will minimize adverse environmental impacts. Individual aquaculture uses and developments should be separated by a sufficient distance to ensure that significant adverse cumulative effects do not occur.
5. The County should support tideland aquaculture use and development when consistent with this Program and protect tidelands and bedlands that were acquired and retained under the Bush and Callow Acts by not permitting non-aquaculture use and development on these tidelands.
6. Intensive residential uses, other industrial and commercial uses, and uses that are unrelated to aquaculture should be located so as not to create conflicts with aquaculture operations.
7. The County should promote cooperative arrangements between aquaculture growers and public recreation agencies so that public use of public shorelines does not conflict with aquaculture operations.
8. Experimental forms of aquaculture involving the use of new species, new growing methods or new harvesting techniques should be allowed when they are consistent with applicable state and federal regulations and this Program.
9. The County should support community restoration projects associated with aquaculture when they are consistent with this Program.
10. Commercial and recreational shellfish areas including Shellfish Habitat Conservation Areas are critical habitats. Shellfish aquaculture activities within all public and private tidelands and bedlands are allowed uses. Such activities include but are not limited to bed marking, preparation, planting, cultivation, and harvest. ~~Nothing in this program should be construed as to preclude their use.~~ [Note: See Required Change #12]
11. Chemicals and fertilizers used in aquaculture operations should be used in accordance with state and federal laws, and this Program.
12. In-water finfish aquaculture use/development, including net pens as defined in Article 2, should not be allowed.
13. Finfish aquaculture that uses or releases herbicides, pesticides, antibiotics, fertilizers, pharmaceuticals, non-indigenous species, parasites, viruses, genetically modified organisms, or feed, or other materials known to be harmful into surrounding waters should not be allowed unless significant impacts to surrounding habitat and conflicts with adjacent uses are effectively mitigated.

B. Uses and Activities Prohibited Outright

1. In-water finfish aquaculture use/development, including net pens as defined in Article 2, shall be prohibited in Jefferson County waters.
2. ~~Finfish aquaculture that uses or releases herbicides, pesticides, antibiotics, fertilizers, non-indigenous species, parasites, pharmaceuticals, genetically-modified organisms, feed, or other materials known to be harmful into surrounding waters is prohibited.~~

C. Shoreline Environment Regulations

1. Priority Aquatic: Aquaculture activities may be allowed subject to the use and development regulations of the adjacent upland shoreline environment, except finfish aquaculture is prohibited.
2. Aquatic: Aquaculture activities may be allowed subject to the use and development regulations of the adjacent upland shoreline environment.
3. Natural: Aquaculture activities, except for geoduck aquaculture, may be allowed subject to policies and regulations of this Program. Geoduck aquaculture may be allowed with a conditional use permit (C(d)). Finfish aquaculture is prohibited.
4. Conservancy: Aquaculture activities, except for geoduck aquaculture, may be allowed subject to policies and regulations of this Program. Geoduck and upland finfish aquaculture may be allowed with a conditional use permit (C(d)).
5. Shoreline Residential: Aquaculture activities, except for geoduck aquaculture, may be allowed subject to policies and regulations of this Program. Geoduck aquaculture may be allowed with a conditional use permit (C(d)). Finfish aquaculture is prohibited.
6. High Intensity: Aquaculture activities may be allowed subject to policies and regulations of this Program, except upland finfish aquaculture may be allowed with a conditional use permit ((C)d)).

D. Regulations – General

1. When a shoreline permit is issued for a new aquaculture use or development, that permit shall apply to the initial siting, construction, and/or planting or stocking of the facility or farm. If the initial approval is a shoreline substantial development permit, it shall be valid for a period of five (5) years with a possible one-year extension. If the initial approval is a conditional use permit, it shall be valid for the period specified in the permit.
2. Ongoing maintenance, harvest, replanting, restocking of, or changing the species cultivated in any existing or permitted aquaculture operation is not considered new use/development, and shall not require a new permit, unless or until: [Note: See Proposed Clarification #21]
 - i. The physical extent of the facility or farm is expanded by more than twenty-five percent (25%) or more than twenty-five percent (25%) of the facility/farm changes operational/cultivation methods compared to the conditions that existed as of the effective date of this Program or

any amendment thereto. If the amount of expansion or change in cultivation method exceeds twenty-five percent (25%) in any ten (10) year period, the entire operation shall be considered new aquaculture and shall be subject to applicable permit requirements of this section; or

ii. The facility proposes to cultivate species not previously cultivated in the state of Washington.

3. Aquaculture uses and activities involving hatching, seeding, planting, cultivating, raising and/or harvesting of planted or naturally occurring shellfish shall not be considered development, as defined in Article 2, and shall not require a shoreline substantial development permit, unless:

i. The activity substantially interferes with normal public use of surface waters; or

ii. The activity involves placement of any structures as defined in Article 2; or

iii. The activity involves dredging using mechanical equipment such as clamshell, dipper, or scraper; or

iv. The activity involves filling of tidelands or bedlands.

4. The County shall assess the potential for interference described in 8.2.C.3 on a case-by-case basis. All proposed new aquaculture uses or developments shall submit a Joint Aquatic Permit Application (JARPA) and SEPA checklist to enable assessment by the county. Activities shall not be considered to substantially interfere with normal public use of surface waters, unless:

i. They occur in, adjacent to or in the immediate vicinity of ~~public waters including~~ public tidelands; and [Note: See Required Change #18]

ii. They involve the use of floating ropes, markers, barges, floats, or similar apparatus on a regular basis and in a manner that substantially obstructs public access, or passage from public facilities such as parks or boat ramps; or they exclude the public from more than one acre of surface water on an ongoing or permanent basis.

5. Aquaculture activities not listed in 8.2.DC.3 and listed activities that fail to meet any of the criteria in 8.2.C.4 A.2 shall require a shoreline substantial development permit (SDP) or conditional use permit (CUP), and shall be subject to all of the following regulations: [Note: See Recommended Change #13]

i. Subtidal, intertidal, floating, and upland structures and apparatus associated with aquaculture use shall be located, designed and maintained to avoid adverse effects on ecological functions and processes.

ii. The County shall consider the location of proposed aquaculture facilities/farms to prevent adverse cumulative effects on ecological functions and processes and adjoining land uses. The County shall determine what constitutes acceptable placement and concentration of commercial aquaculture in consultation with state and federal agencies and Tribes based on the specific characteristics of the waterbody, reach, drift cell, and uplands in the vicinity of the farm/facility.

- iii. Upland structures accessory to aquaculture use that do not require a waterside location or have a functional relationship to the water shall be located landward of shoreline buffers required by the Program.
- iv. Overwater work shelters and sleeping quarters accessory to aquaculture use/development shall be prohibited.
- v. Floating/hanging aquaculture structures and associated equipment shall not exceed six (6) feet in height above the water's surface. The Administrator may approve hoists and similar structures greater than six (6) feet in height when there is a clear demonstration of need. The six foot height limit shall not apply to vessels.
- vi. Floating/hanging aquaculture facilities and associated equipment, except navigation aids, shall use colors and materials that blend into the surrounding environment in order to minimize visual impacts.
- vii. Aquaculture use and development shall not materially interfere with navigation, or access to adjacent waterfront properties, public recreation areas, or tribal harvest areas. Mitigation shall be provided to offset such impacts where there is high probability that adverse impact would occur. This provision shall not be interpreted to mean that an operator is required to provide access across owned or leased tidelands at low tide for adjacent upland owners.
- viii. Aquaculture uses and developments, except finfish aquaculture, shall be located at least six hundred (600) feet from any National Wildlife Refuge, seal and sea lion haulouts, seabird nesting colonies, or other areas identified as critical feeding or migration areas for birds and mammals. Finfish facilities shall be located 1,500 feet or more from such areas. The County may approve lesser distances based upon written documentation that US Fish and Wildlife Service (USFWS), Washington Department of Fish and Wildlife (WDFW) and affected tribes support the proposed location.
- ix. Aquaculture use and development shall be sited so that shading and other adverse impacts to existing red/brown macro algae (kelp), and eelgrass beds are avoided.
- x. Aquaculture uses and developments that require attaching structures to the bed or bottomlands shall use anchors, such as helical anchors, that minimize disturbance to substrate.
- xi. Where aquaculture use and development are authorized to use public facilities, such as boat launches or docks, the County shall reserve the right to require the applicant/proponent to pay a portion of the maintenance costs and any required improvements commensurate with the applicant's/proponent's use.
- xii. Aquaculture use and development shall employ non-lethal, non-harmful measures to control birds and mammals. Control methods shall comply with existing federal and state regulations.
- xiii. Aquaculture use and development shall avoid use of chemicals, fertilizers and genetically modified organisms except when allowed by state and federal law.

- xiv. Non-navigational directional lighting associated with aquaculture use and development shall be used wherever possible and area lighting should shall be avoided and minimized to the extent necessary to conduct safe operations. Non-navigational lighting shall not adversely affect vessel traffic.
- xv. Aquaculture waste materials and by-products shall be disposed of in a manner that will ensure strict compliance with all applicable governmental waste disposal standards, including but not limited to the Federal Clean Water Act, Section 401, and the Washington State Water Pollution Control Act (RCW 90.48).
6. Prior to approving a permit for floating/hanging aquaculture use and development or bottom culture involving structures, the County may require a visual analysis prepared by the applicant/proponent describing effects on nearby uses and aesthetic qualities of the shoreline. The analysis shall demonstrate that adverse impacts on the character of those areas are effectively mitigated.

E. Regulations – Finfish

All finfish aquaculture use/development shall also comply with the following, as applicable:

1. Surveys & Monitoring- For experimental finfish aquaculture use/development, and for other proposed finfish aquaculture activities subject to a shoreline substantial development permit (SDP) or a conditional use permit (CUP), the County will require, at the applicant/proponent's expense, baseline and periodic surveys, assessments, and operational monitoring by a County-approved consultant to determine the success of the project and/or the magnitude of any adverse impacts. Permits for such activities shall include specific performance measures and provisions for adjustment or termination of the project at any time if monitoring indicates significant, adverse environmental impacts that cannot be adequately mitigated.
2. Experimental Scope - Finfish aquaculture use or development approved on an experimental basis shall not exceed two (2) acres in area (except land based projects and anchorage for floating systems) and three (3) years in duration; provided that, the County may issue a new permit to continue an experimental project as many times as is deemed necessary and appropriate by the Administrator.
3. Harmful Materials - Any finfish operation/facility that uses or releases herbicides, pesticides, antibiotics, fertilizers, non-indigenous species, parasites, viruses, pharmaceuticals, genetically modified organisms, feed, or other materials known to be harmful into surrounding waters shall demonstrate all significant impacts have been mitigated. When state or federal agencies/permits require the owner/operator to prepare records/reports on the use of such chemicals/materials, copies shall be provided to the County.

4. Mortality Events - In the event of a significant fish kill at the site of any finfish operation/facility, the owner/operator shall submit a timely report to the County Public Health and Community Development departments stating the date and extent of the loss, cause of death, and detailed remedial action to prevent reoccurrence.
5. Siting, Use Conflicts & Impacts - Proposals for finfish aquaculture activities may be allowed with conditional use approval (C(d)) subject to the policies and regulations of this Program, provided that any adverse environmental impacts, facility siting, and use compatibility issues related to the following are demonstrated to be adequately mitigated. Conditions of approval may address:
 - a. Environmental impacts such as:
 - i. In- or over-water processing, sorting, culling, washing or similar activities;
 - ii. Broodstock supply is state-approved;
 - iii. Copies of state- or federal-required monitoring reports provided to County;
 - iv. Copies of required analysis of potential discharge per NPDES provided to County;
 - b. Facility siting issues such as:
 - i. Site characterization and baseline survey including photo/computer simulation of visual impact for any in-water facility located within 1,500' of OHWM;
 - ii. In-water operations/facilities shall locate 2 nautical miles from Type S streams and 1 nautical mile from Type F streams unless documented conflicts with navigation prove this infeasible;
 - c. Use compatibility issues such as:
 - i. Direct light, reflected glare, and security lighting;
 - ii. Odor control;
 - iii. Upland operations must be screened from view by fences, berms, and/or vegetation unless visual assessment shows unnecessary.
6. Enhancement/Restoration - Fish pen structures (such as for temporary holding or diversion) solely and directly established and managed for purposes of native salmon enhancement and/or restoration are not considered aquaculture or net pens for purposes of this Program, as defined in Article 2.

F. Regulations – Application Requirements

- 6.1. Prior to issuing a permit for any proposed ~~bottom culture or floating/hanging culture~~ aquaculture use or development, the County may require copies of permit applications and/or studies required by state and federal agencies to ensure provisions of this Program are met, including, but not limited to, the following information:
- i. Anticipated harvest cycles and potential plans for future expansion or change in species grown or harvest practices
 - ii. Number, types and dimensions of structures, apparatus or equipment.
 - iii. Predator control methods.
 - iv. Anticipated levels of noise, light, and odor and plans for minimizing their impacts.
 - v. Potential impacts to animals, plants, and water quality due to the discharge of waste water from any upland development.
 - vi. Proof of application for an aquatic lands lease from the Washington State Department of Natural Resources (DNR) or proof of lease or ownership if bedlands are privately held.
 - vii. Department of Health (DOH) Shellfish Certification Number.
 - viii. Department of Fish and Wildlife (DFW) commercial aquatic farm or non-commercial, personal consumption designation.
 - ix. Proof of application for any permits required by the U.S. Army Corps of Engineers, Department of Health, or other agency
 - x. Proof of application for any state and federal permits/approvals including any required federal consultation under Section 7 of the Endangered Species Act (16 U.S.C. § 1531 et seq., ESA).
- 7.2. Prior to approving a permit for floating/hanging or upland aquaculture use and development or bottom culture involving structures, the County may require a visual analysis prepared by the applicant/proponent describing effects on nearby uses and aesthetic qualities of the shoreline. The analysis shall demonstrate that adverse impacts on the character of those areas are effectively mitigated.

Jefferson County Rationale:

Attachment B. Required Changes

13. The County recognizes a complete prohibition of a water-dependent, preferred shoreline use would make the County vulnerable to a legal challenge and instead proposes alternate provisions to allow the use only in appropriate areas to ensure no net loss of shoreline resources and to minimize use conflicts. The alternative proposal is consistent with the statutory requirement to allow such new shoreline activity as a water-dependent, preferred use and with Ecology's requirement for allowance as a conditional use. However, rather than Ecology's allowance for new finfish aquaculture use/development in all shoreline environment designations (SEDs) the County proposes to allow the use only in appropriate areas to ensure adequate protection of sensitive shoreline functions, processes and features and to minimize conflicts with adjacent shoreline use/development. The specific performance standards made part of this SMP are consistent with state guidance on finfish aquaculture use/development with respect to siting, use conflicts, and environmental impacts. Further, the provisions clarify aquaculture as a subset of agricultural use/development.

The County proposes to allow new upland finfish aquaculture use/development with a conditional use permit limited to the Aquatic, Conservancy and High Intensity shoreline designations. This allowance recognizes that an upland operation may require water intake and discharge

components located waterward of the ordinary high water mark (OHWM). In-water finfish aquaculture, including net pens and floating contained systems, is proposed to be prohibited. This provides appropriate shoreline locations for an intensive agricultural use while ensuring adequate protection of nearshore habitat such as marine riparian and submerged aquatic vegetation, benthic communities, migration corridors for endangered salmonids, and minimizing the potential for use conflicts anticipated to occur along the Natural and Shoreline Residential designated shorelines.

The County proposes to modify the Locally Approved SMP to include these provisions as a matter of legislative discretion based on input from Ecology and by the interested public and stakeholders. In the 1/26/11 conditional approval letter from Ecology, two reasons were given as rationale for rejecting the proposed outright ban on all finfish aquaculture: 1) the water-dependent status of the use; and 2) the lack of adequate science to support a ban. Both concerns are responded to below.

The definition for 'Water-dependent use' provided in Article 2.W.3 is consistent with the definition provided by WAC 173-26-020 that reads:

(39) "Water-dependent use" means a use or portion of a use which cannot exist in a location that is not adjacent to the water and which is dependent on the water by reason of the intrinsic nature of its operations.

The County recognizes finfish aquaculture as a water-dependent use because of the standard industry practice to locate in or near natural water bodies for the purpose of water intake and discharge. The County also notes there is at least one example of freshwater finfish species being raised in upland facilities operated without any connection to surface waters, such as in Montana where water is supplied to the facility from a well.

Arising from Ecology's response, the County conducted further investigation in greater detail of the science in support of and opposition to finfish aquaculture, with special focus on in-water operations such as net pens. The Finfish Bibliography includes some 100 documents including peer-reviewed journal articles, state and federal agency policy and technical guidance, permit samples from existing Puget Sound net pen operations, Shoreline Master Programs from other Puget Sound jurisdictions, and other sources of pertinent information. The Bibliography includes documentation submitted during formal public comment and constitutes a representative sample of the available science. Upon review

of the Finfish Bibliography, the County concludes that while the science before it does not present a consensus opinion, there is considerable evidence that in-water finfish aquaculture, such as net pens, can be detrimental to shoreline functions and processes, including native salmon populations - especially migrating juveniles. There are many risks recognized in relation to net pen operations:

- Biodeposits - food and feces
- Chemical Use - pesticides, pharmaceuticals, etc
- Disease - bacteria, viruses
- Parasites - sea lice
- Escapement - GMOs, breed/compete with natives
- Impacts to Puget Sound - low dissolved oxygen, shellfish, forage fish, kelp & eelgrass, mammals, other restoration efforts

In addition, there are risks for conflicts with adjacent shoreline uses such as aesthetics, lighting, glare, noise, and odor.

In light of the requirement for 'no net loss' and in keeping with the precautionary principle, the County believes the science dictates that in-water finfish aquaculture, including net pens, is not an appropriate use in Jefferson County waters.

14. See #13 above.

15. See #13 above.