

Chapter 16

Aquaculture

Shoreline Master Program Planning Process

Introduction

Aquaculture is a historic, diverse use of Washington’s shorelines. It includes a broad array of activities, from oyster and geoduck (Figure 16-1) farms and salmon net pens to lesser known activities such as restoration of pinto abalone and seed cultivation in an urban marina.

Aquaculture is defined as “the culture or farming of fish, shellfish, or other aquatic plants and animals. Aquaculture does not include the harvest of wild geoduck associated with the state managed wildstock geoduck fishery” [WAC 173-26-020(6)].

Aquaculture policies and regulations are developed for Shoreline Master Program (SMP) updates, during Phase 3 of the SMP planning process for local governments starting their update prior to July 2013, and during Task 6 for those starting the update later. The SMP Guidelines, particularly WAC 173-26-241(3)(b), address aquaculture.

This handbook chapter provides direction to shoreline planners working on SMP updates and amendments and includes information relevant to review of aquaculture permit proposals. This chapter reviews state and national aquaculture policy and the SMP Guidelines. Discussion



Figure 16-1: Workers tend the Taylor Shellfish Farms, Inc. geoduck farm at Cape Horn, Mason County. (Ecology staff photo.)

addresses specific types of aquaculture, protection of ecological functions and native eelgrass, and potential impacts. Appendices include an overview of state and federal aquaculture regulations, the (SMP) Guidelines aquaculture provisions, information sources used in the chapter and useful for the SMP supporting documents, and obsolete aquaculture provisions. (Note: Interim aquaculture guidance was previously published in June 2012. This chapter replaces that guidance.)

Policy and regulatory landscape

National and state initiatives have been launched in the last 15 years to restore native shellfish, enhance recreational shellfish harvest, and grow aquaculture jobs sustainably – to help feed a growing world and boost regional economies. New aquaculture methods and processes continue to be developed.

These initiatives and the growing demand for Washington products have resulted in expansion of this use into new shoreline areas and communities. Citizens have raised concerns over how aquaculture affects existing uses, ecological functions, native salmon and the long-term recovery of Puget Sound.

Stakeholders from all sides of the issue are actively engaged and keenly aware of the significant role that SMPs and shoreline permits play in aquaculture's future. Local governments are updating existing or writing new aquaculture provisions and seeking guidance on how best to respond to stakeholder concerns within a dynamic policy and regulatory landscape.

The following list illustrates this landscape.

- The Governor's office coordinates the Washington Shellfish Initiative (WSI) that was launched in December 2011. The initiative combines the National Oceanic and Atmospheric Administration's (NOAA) National Shellfish Initiative and the state's interest in promoting clean water, food for a growing population, and jobs. The state initiative outlines specific action items related to permitting, research, restoration and enhancement, water quality and ocean acidification. Most actions are integrated into the Puget Sound Action Agenda that is administered by the Puget Sound Partnership.
- As part of the state initiative, a Shellfish Interagency Permitting Team of tribal, federal, state and local government representatives identified efficiencies in shellfish permitting. The team completed its initial assignment in 2015 and continues to meet as part of Phase II of the WSI. Results to date include revised JARPA (Joint Aquatic Resource Permit Application) guidance intended to help applicants for shellfish aquaculture prepare better applications.
- The U.S. Army Corps of Engineers (Corps) administers the federal permit program for shellfish aquaculture (Appendix 1). Permit conditions designed to protect endangered

Pacific salmon are based on the 2012 biological opinion (scientific review) conducted by NOAA's National Marine Fisheries Services (NMFS). The Corps is revising permit conditions based on an updated biological opinion published in November 2014 (NMFS 2014).

- The state Noxious Weed Control Board listed *Zostera japonica* (non-native eelgrass) as a Class C noxious weed in 2012. This state listing changed the policy interpretation of the SMP Guidelines regarding eelgrass protection [WAC 173-26-221(2)(c)(iii) and WAC 173-26-241(3)(b)(i)(C)]. Local governments are now required to protect only native eelgrass – *Zostera marina*. Important management considerations for local governments include distinguishing between *Zostera japonica* and *Zostera marina*, and determining proximity of aquaculture to eelgrass beds. (See the Eelgrass section on page 27 for more detail.)
- Ecology's Water Quality Program administers National Pollutant Discharge Elimination System (NPDES) permits for finfish net pens with over 20,000 pounds annual production of fish on hand at any one time. There are currently eight privately owned pens and one tribal/Washington Department of Fish and Wildlife (WDFW) pen under NPDES permits.

Future commercial net pens will need to secure an NPDES permit and comply with state water quality and sediment standards. Permit conditions are expected to continue to include salmon escapement and recapture plans, sea lice monitoring plans, and reporting of fish feed, biomass and chemical usage. Net pens are discussed in more detail in the "Finfish net pens, hatcheries and in-water acclimation facilities" section on page 33.

- Washington Department of Natural Resources (DNR), NOAA, Puget Sound Restoration Fund, and Pacific Shellfish Institute are conducting research about shellfish in Washington. Washington Sea Grant coordinates and funds geoduck and other shellfish aquaculture research and shares results through publications and workshops. This research builds on our current understanding of interactions between aquaculture and the aquatic environment.

It is within this changing landscape that local governments are developing, updating, and implementing their SMPs. Ecology is available to work closely with local governments responding to changes in laws, legal interpretations and new scientific findings.

Legal framework

This section describes national policy and provisions of the state Shoreline Management Act (SMA) and SMP Guidelines applicable to aquaculture. It also briefly describes additional state and federal requirements applicable to aquaculture.

National policy

National policy informs the statewide interest in aquaculture. The National Aquaculture Act of 1980 states it is “in the national interest, and it is the national policy, to encourage development of aquaculture in the United States.” The national Marine Aquaculture Policy of 2011 calls for promotion of aquaculture use and environmental protection, including an overall policy to “Encourage and foster sustainable aquaculture development that provides domestic jobs, products, and services and that is in harmony with healthy, productive, and resilient marine ecosystems, compatible with other uses of the marine environment.”¹

The National Oceanic and Atmospheric Administration (NOAA) is advancing this policy through a National Shellfish Initiative designed to increase bivalve shellfish populations through commercial production and conservation activities. The initiative encourages shellfish aquaculture, advances science and research, and streamlines permitting at federal, state and local levels.²

The statutory basis for NOAA’s aquaculture activities also includes the Coastal Zone Management Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Marine Mammal Protection Act, the Endangered Species Act, the National Marine Sanctuaries Act, and the Fish and Wildlife Coordination Act.

The SMA is one of the enforceable policies of Washington’s Coastal Zone Management Program, which is part of the federal program administered by NOAA. Shoreline Master Programs for jurisdictions along the Pacific coast and Puget Sound are part of the federal program.

State policy

The SMA establishes as preferred uses those that are “consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state’s shoreline” [RCW 90.58.020]. Aquaculture is identified as a water dependent use in the SMP Guidelines, and its water dependent status has been affirmed in cases before the Shorelines Hearings Board. (See [Aquaculture case summaries](#) on page 42.)

¹NOAA 2011, page 1-2; Online at:

http://www.nmfs.noaa.gov/aquaculture/docs/policy/noaa_aquaculture_policy_2011.pdf

² Online at: http://www.nmfs.noaa.gov/aquaculture/policy/13_policy_and_reg_homepage.html

For shorelines of statewide significance, including all marine waters below the line of extreme low tide, the SMA establishes the following order of preference for shoreline uses:

- (1) Recognize and protect the statewide interest over local interest;
- (2) Preserve the natural character of the shoreline;
- (3) Result in long-term over short-term benefit;
- (4) Protect the resources and ecology of the shoreline;
- (5) Increase public access to publicly owned areas of the shorelines;
- (6) Increase recreational opportunities for the public in the shoreline; [RCW 90.58.020].

The Legislature has also provided relevant policy direction regarding the statewide interest through the Aquaculture Marketing statute (see box) administered by the Department of Agriculture, and the Washington Shellfish Initiative, listed in the “Policy and regulatory landscape” section, above.

In the early days of statehood, the Legislature encouraged the growth of an oyster industry by selling state-owned tidelands to private parties. The Bush Act and Callow Act, Laws of 1895, were changed over the years to allow for other shellfish cultivation. RCW 79.135.010 is the current law regarding Bush and Callow lands. The State stopped the sale of tidelands into private ownership in 1971.

Bush Act and Callow Act lands are located in the following counties: Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, and Thurston. (Refer to DNR’s Bush and Callow Act Aquatic Land Maps.) Many acres of tidelands sold under the Bush Act and Callow Act are currently used for shellfish cultivation.

SMP Guidelines

The SMP Guidelines include aquaculture as a water-dependent use, which is “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” [WAC 173-26-020(39)]. The SMP Guidelines recognize aquaculture as an **activity of statewide interest** and a **preferred use**.

This activity is of statewide interest. Properly managed, it can result in long-term over short-term benefit and can protect the resources and ecology of the shoreline.

Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area [WAC 173-26-241(3)(b)(i)(A)].

RCW 15.85.010: “The legislature declares that aquatic farming provides a consistent source of quality food, offers opportunities of new jobs, increased farm income stability, and improves balance of trade.

The legislature finds that many areas of the state of Washington are scientifically and biologically suitable for aquaculture development, and therefore the legislature encourages promotion of aquacultural activities, programs, and development with the same status as other agricultural activities, programs, and development within the state.

... It is therefore the policy of this state to encourage the development and expansion of aquaculture within the state.”

In reserving shoreline areas for aquaculture and other uses, local governments must first give preference to reserving appropriate areas for protecting and restoring ecological functions and next give preference to water-dependent and associated water-related uses over other types of shoreline uses. (See RCW 90.58.020, WAC 173-26-201(2)(d) and WAC 173-26-251(2).) Other uses, in order of preference, are other water-related and water-enjoyment uses, single family residential uses, and non-water-oriented uses.

The aquaculture section of the Guidelines was revised on March 14, 2011, primarily to address commercial geoduck aquaculture. Local governments that adopted SMP updates prior to this date must amend their SMPs to be consistent with the current rule during their periodic reviews and updates.

Other aquaculture provisions of the Guidelines are discussed throughout this chapter. Guidelines provisions most relevant to aquaculture are included in [Appendix 2](#).

Definitions

Several terms related to aquaculture are defined in the WAC and RCW. This section includes those definitions and provides Ecology's guidance for SMP definitions, as well as additional aquaculture terms.

Definitions in SMPs must be consistent with those in the SMA and in WAC 173-26 and 27. Ecology recommends that local governments use these definitions verbatim. This will provide for greater consistency across jurisdictions and more certainty that SMP policies and regulations are consistent with state statute and rules, and will be helpful if SMPs or permits are appealed.

Aquaculture

Aquaculture is defined in WAC 173-26-020(6) as, "the culture or farming of fish, shellfish, or other aquatic plants and animals. Aquaculture does not include the harvest of wild geoduck associated with the state managed wildstock geoduck fishery."

Jurisdictions that have only freshwater streams and lakes and jurisdictions that are outside Puget Sound may delete the last sentence about wild geoduck from the definition of aquaculture.

Development and structure

Development and structure are two terms that have been the subject of litigation regarding aquaculture projects. Using the definitions of development and structure provided in statute and rule will ensure consistency with the SMA and the WAC.

Per RCW 90.58.030(3)(a) and WAC 173-27-030(6), development is defined as:

A use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, or minerals; bulkheading; driving of

piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to this chapter at any stage of water level.

Per WAC 173-27-030(15), structure is defined as:

A permanent or temporary edifice or building, or any piece of work artificially built or composed of parts joined together in some definite manner, whether installed on, above, or below the surface of the ground or water, except for vessels.

Examples of aquaculture that may constitute development include finfish net pens, mussel rafts, oyster rafts, and aquaculture accessory structures such as docks.

The terms “development” and “structure” are interpreted in Attorney General Opinion (AGO) 2007, No. 1 in relation to tube-type geoduck aquaculture. The AGO generally concluded that tube-type geoduck aquaculture may not always meet the definition of development, because the tubes utilized in the typical geoduck aquaculture setting do not constitute structures and geoduck aquaculture does not involve dredging, drilling or removal of materials. However, depending on site specific factors, a geoduck aquaculture project may still constitute development if it involves the placement of an obstruction or causes substantial interference with the normal public use of the surface waters. The AGO is referenced in the geoduck aquaculture provisions of the Guidelines to ensure local governments understand that Ecology will review and approve SMPs consistent with the AGO [WAC 173-26-241(3)(b)(iii)].

Because geoduck aquaculture may not always be considered development, Ecology recommends that the term “use,” or the terms “use and development,” be used when SMPs refer to aquaculture that includes geoduck aquaculture.

Definitions for hatcheries and upland finfish facilities are included in the “Hatcheries and in-water acclimation facilities” section on page 39.

Aquaculture types and terms

Aquaculture is a broad category of uses. Current aquaculture in Washington includes, but is not limited to, research on ecological impacts and new technologies; restoration and enhancement of existing native stock; cultivating shellfish for personal use; and commercial ventures growing product for human consumption and sale. Project proposals may include one or more stages of aquaculture – including raising eggs, seed, smolts or seedlings; growing these plants and animals to maturity; or processing them for sale or non-commercial use. Also, projects may be located in water or on the shore, or both.

Local governments may use one or more terms to describe specific types of aquaculture as long as the specific types are defined and used consistently. For example, these may include shellfish aquaculture, finfish net pens, or restoration of native stock, as well as the broad definition from the WAC.

If specific aquaculture terms such as operations or facilities are used, they should be used consistently throughout the SMP. Definitions should not restrict desirable uses such as cultivation and harvest for personal consumption or restoration and enhancement of native stock. (See “[Aquaculture for personal use](#)” on page 12.)

Other state and federal requirements

A complex framework of state and federal requirements for aquaculture is in place. These requirements may include health certifications, aquatic farm permits, NPDES permits, aquatic land leases, fish transfer permits, tribal harvest notifications, Endangered Species Act consultations and more. In keeping with the SMA direction to consider all plans, studies and information from other agencies [RCW 90.58.100(1)(c)], Ecology developed [Appendix 1](#), an overview of state and federal aquaculture requirements useful for informing SMP updates.

SMP regulations should not confound state and federal regulations and preclude an applicant’s ability to comply with state and federal permits and the local SMP [RCW 90.58.360]. For example, a local regulation that requires cleaning net pen nets in place contradicts state regulations that require nets to be removed and cleaned upland. An applicant would not be able to comply with both regulations.

Local governments are encouraged to avoid including SMP provisions that duplicate state or federal requirements. Ecology recommends SMPs contain simple statements to refer to state and federal regulations, written to incorporate future changes. The SMP may include one general regulation for all shoreline uses, requiring consistency with applicable federal and state laws and regulations, or separate regulations for each shoreline use, as relevant.

For example, a general regulation such as the following could be included in an SMP’s general policies and regulations section or the introduction:

Development, uses and activities in shoreline jurisdiction also must be consistent with the policies and regulations of the comprehensive plan, zoning code, critical areas ordinance, clearing and grading ordinance and other provisions of the county/city code, as well as applicable federal and state laws.

Kitsap County’s SMP addresses any future changes to state and federal laws and regulations generally and specifically applying to aquaculture: “E. Where this Program makes reference to RCW, WAC, or other state or federal law or regulation, the most recent amendment or version shall apply” (Kitsap County SMP, 22.100.125).

The following regulation specific to aquaculture regarding U.S. Coast Guard requirements would still apply if Coast Guard requirements are amended in the future. “1. All floating and submerged aquaculture structures and facilities in navigable waters shall be marked in accordance with U.S. Coast Guard requirements” (Kitsap County SMP, 22.600.115.C).

Kitsap County's SMP also includes a requirement to submit evidence of compliance with federal and state permits prior to any local project approval or permit.

4. Other applications and reports, when applicable or requested, to ensure compliance with permit conditions, which may include: ...b. An accepted Washington Department of Ecology National Pollutant Discharge Elimination System (NPDES) permit, if applicable...d. An accepted WDFW aquatic farm permit, and/or fish transport permit... (Kitsap County SMP, 22.600.115.B.).

General aquaculture provisions

This section provides guidance regarding SMP provisions that apply to all types of aquaculture. Topics include the water-dependent nature of aquaculture, locations for aquaculture, personal use, existing commercial aquaculture and dormancy.

Water-dependent use

Aquaculture is generally dependent on use of the water. Water-dependent uses are preferred uses under the SMA. SMPs generally must allow for aquaculture in appropriate areas so long as it does not result in a net loss of shoreline ecological functions or significantly conflict with navigation or other water-dependent uses [WAC 173-26-241(3)(b)(i)(C)]. SMPs should provide some latitude for new or unforeseen forms of aquaculture. (See text box.)

Although it may be possible to site aquaculture on land, most current aquaculture in Washington occurs in water. For example, while finfish aquaculture could potentially be carried out in contained systems in the upland area, floating net pens are still a water-dependent use.

Aquaculture may be water-dependent in whole or in part. Mussel rafts and floating net pens are water-dependent, but other aquaculture operations such as processing may be carried out in the upland area.

WAC 173-26-241(3)(b)(i)(B): "The technology associated with some forms of present-day aquaculture is still in its formative stages and experimental. Local shoreline master programs should therefore recognize the necessity for some latitude in the development of this use as well as its potential impact on existing uses and natural systems."

Determining locations for aquaculture

When aquaculture is a current use or is anticipated to be a future use, SMPs should identify where aquaculture may occur and where it should be excluded. As with other types of uses, local governments should base the rationale for these decisions on the inventory and characterization, scientific studies, and input from federal and state agencies with "special expertise with respect to any environmental impact" [RCW 90.58.100(1)(b)] as well as information from other interested parties. Ecology suggests using caution regarding studies and information from locations where the physical conditions, regulatory framework, and industry operations are different and the conclusions may not be relevant to Washington or a specific jurisdiction. (See [Appendix 3](#) for a list of some helpful sources.)

When considering appropriate locations for aquaculture, local governments should analyze potential use conflicts, consistency with environment designation management policies, and ecological considerations and document these considerations in their shoreline use analysis. (See



Figure 16-2: This floating upweller system (FLUPSY) is used to raise oyster seed. (Keri Weaver, City of Poulsbo, photo.)

SMP Handbook Chapter 8, “Shoreline Use Analysis.”)

Example language for addressing use conflicts is included in the Snohomish County SMP:

- (g) Floating, submerged and intertidal aquacultural structures and other similar structures shall be located and designed to avoid impacts to public use of and access to the water, including navigational access to waterfront property, pedestrian circulation along beaches, and navigation between such structures. Approval of such structures may include the following conditions to protect the public use and access to the water:
- (i) Clustering or spacing of rafts to allow for small boat traffic within or through the facilities;
 - (ii) Directional signage;
 - (iii) Buoys marking the extent of the operation; and
 - (iv) Limits on the type, number, location and size of the facility and any accessory structures;... (Snohomish County SMP, 30.67.510 Aquaculture.)

The presence of water pollution, navigation channels, and residential neighborhoods are not automatic reasons to prohibit aquaculture. For example, growing shellfish for human consumption may need to be restricted in a marina, but growing shellfish seed in a floating upweller system in a boat slip (Figure 16-2), then transferring the shellfish to clean water for final grow out is allowed by the Washington Department of Health (WDOH) and should be allowed by the local SMP. Also, culturing aquatic plants or animals for native species restoration or improving water quality may be appropriate uses near a port or another urbanized location not suitable for growing product for human consumption.

Some local governments have adopted a jurisdiction-wide prohibition where aquaculture does not and is unlikely to occur. For example, these include small streams with developed shorelines or shorelines with highly contaminated areas.

In the city of Tenino, a 1.2 mile length along Scatter Creek is the only area within shoreline jurisdiction. Portions of Scatter Creek, including areas within the city, are seasonally dry, according to the City's final *Shoreline Inventory and Characterization*, June 2011. Tenino determined that aquaculture is incompatible within the shoreline area and prohibited aquaculture "(d)ue to the high use of water resources and the possible conflict with other beneficial uses of water within an urban area" (City of Tenino SMP, Section 7.3).

Aquaculture for personal use

The aquaculture definition in the SMP Guidelines applies to all types of aquaculture – including seeding and culturing shellfish on private tidelands for personal, non-commercial use [WAC 173-26-020(6)]. Most personal use is covered by other regulations, either in other sections of the SMP, regulations in other sections of the local code, or state or federal regulations. These regulations typically address:

- Environmental impacts, including those to critical freshwater and saltwater habitats (SMP).
- Overwater structures (SMP).
- Lights, odors, noise (local nuisance ordinance).
- Dredging (federal regulations).
- Spread of disease and highly noxious and invasive aquatic species (WDFW regulations).
 - Shellfish import and transfer permits.
http://wdfw.wa.gov/licensing/shellfish_import_transfer/
 - Fish stocking and transport permits.
http://wdfw.wa.gov/licensing/fish_transport/transport_app.html

Therefore, SMPs do not need to include specific aquaculture regulations for personal, non-commercial use. If personal use regulations are included, the SMP should be clear which policies and regulations apply to this use compared to commercial aquaculture, aquaculture that includes structures, or aquaculture with potential impacts such as substrate modification and interference with navigation. Policies and regulations that apply to personal use aquaculture only, and a specific line in the shoreline use table, may help to avoid unintentionally requiring a permit or interfering with reasonable use of private property.

For example, Whatcom County's SMP includes the following in the definition of aquaculture.

Private, non-commercial aquaculture activities that do not require development shall not be subject to the use provisions of WCC, Title 20 and are permitted in all zoning districts when permitted in accordance with the provisions of The Whatcom County Shoreline Management Program (WCC Title 23.) (Whatcom County SMP, WCC 20.97.017).

Existing aquaculture uses

Nonconforming use and development provisions of the SMP apply to aquaculture as they do to other uses and development, unless the SMP states otherwise. Ecology's "default" nonconforming regulations in WAC 173-27-080 apply if the SMP does not have other nonconforming regulations. (See SMP Handbook Chapter 14, "Legally Existing Uses and Development" for discussion of nonconforming uses and development.) Ecology recommends local governments review the nonconforming provisions and determine whether they are appropriate for aquaculture.

Here's why:

- If aquaculture is prohibited by the SMP, existing aquaculture would become nonconforming. It could continue as is, but could not expand. If aquaculture operations are determined to be abandoned by the local government due to inactivity, operations could not be restarted if aquaculture is prohibited.
- Under the "default" regulations, "a use which is listed as a conditional use but which existed prior to adoption of the master program or any relevant amendment and for which a conditional use permit has not been obtained shall be considered a nonconforming use." With the exception of single-family residences, these nonconforming uses "shall not be enlarged or expanded" [WAC 173-27-080(3)].

For example, the SMP Guidelines require a conditional use permit for new commercial geoduck aquaculture. Commercial geoduck aquaculture that existed prior to approval of the updated SMP would become nonconforming. A CUP would be required for expansion of existing geoduck operations.

Options to address these scenarios include ensuring regulations do not prohibit aquaculture where it currently exists, revising nonconforming regulations to exclude aquaculture, or writing nonconforming regulations to address aquaculture specifically.

Dormancy

Nonconforming use standards regarding abandonment may apply to aquaculture unless the SMP provides specific abandonment regulations for aquaculture. Ecology recommends local governments address dormancy in order to avoid abandonment provisions from unintentionally applying to ongoing aquaculture operations. Both shellfish and net pen aquaculture undergo periods of dormancy. Periods of dormancy vary with the type of aquaculture and specific situation, and may last from months to many years. Dormancy may occur due to crop rotation or fallowing, state or federal permit requirements, pest infestations, state water quality closures, seed availability, market fluctuations, or other factors beyond the control of the operator. Periods of aquaculture dormancy should not be considered abandonment – the ending of a nonconforming use or occupancy of a nonconforming structure. However, if aquaculture

operations become abandoned and not just dormant, any future aquaculture must be consistent with the SMP.

Ecology recommends SMPs require a case-by-case evaluation of dormancy issues that may arise. For example, the SMP could include the following language:

Section XXXXXX *[insert reference to general abandonment provisions in the SMP]* does not apply to aquaculture operations. The determination of when aquaculture is abandoned shall be made case-by-case in consultation with the operator. In its determination, the City/County shall consider such factors as whether the property was acquired under the Bush or Callow Acts of 1895, the use of crop rotation and fallowing, state or federal permit requirements, pest infestations, seed or juvenile availability, market fluctuations, and pollution of the farm site from other uses or developments.

The reference to the Bush and Callow Acts concerns about 47,000 acres of state-owned aquatic lands that were sold to private parties for shellfish aquaculture [RCW 79.135.010]. (See DNR [Bush and Callow Act Aquatic Lands Maps](#).)

Preparing for permitting

This section provides information about addressing permitting in SMP regulations. Shoreline permits are needed for many proposed aquaculture projects, with conditional use permits (CUP) required for new commercial geoduck aquaculture. Aquaculture projects that do not meet the threshold for substantial development are exempt from requirements for a substantial development permit (SDP) but still must be consistent with the SMP. Local governments may attach mitigation conditions to exemption approvals.

Most aquaculture also requires other state and federal permits, as discussed in “[Other state and federal requirements](#)” on page 8 and in [Appendix 1](#). Projects will also be reviewed for compliance with local regulations such as critical areas regulations incorporated in the SMP, site development, noise, and nuisance regulations, for example.

Shoreline permits for aquaculture

During review of shoreline permits and exemptions, local governments should confirm the applicant has all the proper state and federal permits, consult with state and federal agencies as needed, and require mitigation for potential impacts. Project review may include:

- Determination of water-dependent, water-related and non water-oriented nature of all portions of project.
- Consideration of site conditions.
- Determination of the presence of critical saltwater and freshwater habitats and priority species (eelgrass and kelp beds, forage fish spawning habitat, and migrating salmon, for example).
- Analysis of current science. Relying on current information during project review is essential due to the dynamic nature and changing location of physical features such as eelgrass, forage fish spawning habitat, critical areas and habitats of priority species. Emerging science informs aquaculture practices and our knowledge of impacts, effective best management practices, and natural processes and priority species.
- Consideration of cumulative impacts.

Ecology rules require an assessment of cumulative impacts for projects that require CUPs and variances [WAC 173-27-160 and 170]. However, there have been cases in which the Shorelines Hearings Board has reversed a local government SDP decision for not addressing cumulative impacts. (See [Aquaculture case summaries](#), page 42, *Coalition to Protect Puget Sound Habitat v. Pierce County*, SHB No. 13-016c (January 22, 2014).)

Conditional use permits for geoduck aquaculture



Figure 16-3: New commercial geoduck aquaculture requires a Conditional Use Permit. (Perry Lund photo.)

Under Ecology's SMP guidelines, revised in 2011, updated SMPs must require a CUP for all new commercial geoduck aquaculture [WAC 173-26-241(2)(b)(ii)(D) and (3)(b)(iv)]. The harvest of wild geoduck associated with the state managed wildstock geoduck fishery does not require a CUP, since it is excluded from the definition of aquaculture [WAC 173-26-020(6)].

Application requirements for new commercial geoduck aquaculture should comply with the requirements of the geoduck subsection of the Guidelines, including the requirement to minimize redundancy between federal, state and local permits. Many of the requirements in the geoduck subsection can be met by submitting state or federal permit application materials.

Other major provisions of the Guidelines regarding geoduck aquaculture include:

- Where the applicant seeks to convert existing non-geoduck aquaculture to geoduck aquaculture, local government has discretion to determine whether to require a CUP.
- A new CUP shall not be required for subsequent cycles of planting and harvest.
- An applicant may submit a single CUP for multiple sites within an inlet, bay or other defined feature, as long as all sites are under control of the same applicant and within the same local government jurisdiction.
- Local governments must allow work during low tides, which sometimes occur at night, but may require conditions to reduce impacts to adjacent uses.

Local governments may require a review during geoduck aquaculture operations, per the Shorelines Hearings Board decision in SHB No. 13-006c, in which the Board upheld Thurston County's review requirement. However, a new CUP cannot be required for ongoing operations.

The U.S. Army Corps of Engineers (Corps) requires a federal permit for new commercial geoduck under Section 404 of the Clean Water Act. Until cities and counties adopt the CUP requirement for new commercial geoduck into their SMPs, Ecology will conduct a Section 401 water quality review and Coastal Zone Management Act consistency review for the Corps' permits. The 401 Water Quality Certifications allow Ecology to limit and condition project proposals. These certifications have included monitoring requirements, marking of tubes and other equipment, buffers from eelgrass and other critical habitats, and other requirements to protect water quality and aquatic resources.

After an updated SMP includes the CUP requirement for new commercial geoduck aquaculture, Ecology will no longer issue individual 401 Water Quality Certifications for that jurisdiction. Ecology will rely on the CUP process for state review of project proposals instead.

Permit timelines and revisions

Shoreline permits should include timelines for initial aquaculture activities. WAC 173-27-090 establishes a timeline of two years for construction activities or the beginning of a use or activity if no construction is involved. Local governments may adopt different time limits. The example below establishes a 5-year time limit for initial siting, construction, planting or stocking of an aquaculture farm or facility.

Shoreline permit revisions are required when substantive changes regarding the design, terms or conditions of a project from those approved in the permit are proposed by the applicant. (See text box.)

WAC 173-27-100: "Changes are substantive if they materially alter the project in a manner that relates to its conformance to the terms and conditions of the permit, the master program and/or the policies and provisions of chapter 90.58 RCW."

Local government may approve a revision that is within the "scope and intent" of the original permit and consistent with the SMP. Scope and intent is defined in the WAC. Provisions relevant to aquaculture include:

- No additional overwater construction is allowed, except that piers, docks or floats may be increased by 500 square feet or 10 percent from that allowed by the original permit, whichever is less.
- Development cannot exceed height, setback, lot coverage or other SMP requirements except as authorized by a variance under the original permit.
- The use authorized by the original permit is not changed.
- The revision will not cause adverse environmental impacts.

Revisions that require a CUP or variance must be submitted to Ecology for approval.

The following Kitsap County SMP regulation sets a timeline for initial activity and addresses ongoing operations.

b. When a shoreline substantial development or conditional use permit is issued for a new aquaculture use or development, that permit shall apply to the initial siting, construction, and planting or stocking of the facility or farm. Authorization to conduct such activities shall be valid for a period of five (5) years with a possible extension per Section 22.500.105(H) of this Program. After an aquaculture use or development is established under a shoreline permit, continued operation of the use or development, including, but not limited to, maintenance, harvest, replanting, restocking or changing the culture technique shall not require a new or renewed permit unless otherwise provided in the conditions of approval, or if required pursuant to permit revision criteria in WAC 173-27-100 or this Program. Changing of the species cultivated shall be subject to applicable standards of this Program, including, but not limited to, monitoring and adaptive management in accordance with standard 7, below (Kitsap County SMP, 22.600.115.C.1.).

Letter of exemption

Local governments may provide a written letter of exemption for aquaculture projects that are exempt from the SDP permit process requirements and subject to federal Section 10 or Section 404 permits. This would include Nationwide Permit 48 for existing commercial shellfish aquaculture, administered by the Corps. The Corps requires demonstration of consistency with local SMPs in order to comply with shellfish Section 404 permits. An exemption letter is a practical way to demonstrate consistency. A letter also helps the local jurisdiction track aquaculture projects for future cumulative impacts analyses.

For example, the following requirement may be included in the SMP:

A written statement of exemption is required for aquaculture activities that do not constitute substantial development or otherwise require a shoreline permit. A written statement of exemption constitutes a valid authorization to conduct new or expanded aquaculture activities. A written statement of exemption shall provide a summary of consistency of the aquaculture activities with this SMP and the Shoreline Management Act.

Application requirements

Local governments should strive to minimize the paperwork burden on all permit applicants and be consistent with WAC 173-27-180, which establishes the application requirements for shoreline permits. SMPs and other portions of a local jurisdiction's municipal code can establish specific requirements for applications. If appropriate, local governments can use the revised Joint Aquatic Resources Permit Application (JARPA) to guide shellfish application material requirements, and the state NPDES permit application forms (Form) 1 and Form 2B: to guide net pen application material requirements.

- JARPA: (Governor’s Office for Regulatory Innovation and Assistance, permitting, click on JARPA.) http://www.oria.wa.gov/site/alias_oria/347/our_permitting_services.aspx)
- State NPDES forms:
<https://fortress.wa.gov/ecy/publications/summarypages/ecy070429.html>

For example, Kitsap County’s SMP lists the information required for aquaculture applications if not already provided for in other applications:

B. Application Requirements. In addition to the minimum application requirements in Section 22.500.105(C), aquaculture applications shall include the following information if not already provided in the local, state or federal permit applications. Where requested information is not applicable to a specific proposal, the application shall not be required to include all items listed under this section as long as it is demonstrated why the information does not apply, with concurrence from the department (Kitsap County SMP 22.600.115.).

The list includes a site plan, baseline description of existing and seasonal conditions, operational plan and other applications and reports.

Local governments may consult with the Shellfish Interagency Permitting Team to improve consistency, increase efficiencies, and reduce permitting time frames.

Addressing impacts – general

Aquaculture tends to be in close proximity to critical areas and habitats, navigation channels, and other waterfront uses because it occurs within the Aquatic environment or in a combination of the Aquatic environment and upland environment designations. This creates a potential for conflict and impacts. There is a wide range of aquaculture types and activities and a corollary wide range of potential conflicts or impacts – from minimal to significant, depending on the types of surrounding uses and presence of ecologically important resources.

Aquaculture regulations in local SMPs should be carefully written so they are consistent with WAC 173-26-241(3)(b)(i)(C):

Aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, adversely impact eelgrass and macroalgae, or significantly conflict with navigation and other water-dependent uses. Aquaculture should be designed and located so as not to spread disease to native aquatic life, establish new nonnative species which cause significant ecological impacts, or significantly impact the aesthetic qualities of the shoreline.

This WAC section contains nuanced language and several uses of the word “significant” that qualify the intent and meaning. Ecology recommends that local governments carry-over these qualifiers into their SMPs to ensure the appropriate interpretation of the SMP Guidelines.

SMP regulations should require analysis of all impacts and mitigation of impacts. Many local jurisdictions assume that commercial aquaculture (e.g. oyster farms, net pens of Atlantic salmon) will have more significant impacts than non-commercial aquaculture (e.g. research studies, restoration and enhancement projects). However, this may not be the case given the broad array of aquaculture types and potential impacts.

Aquaculture impacts are generally correlated to a specific use’s location, methods, size and duration, and whether or not structures are part of the project. For example, commercial and noncommercial finfish net pens may pose similar navigation and aesthetic impacts regardless of their end purpose.

Local governments may consider writing regulations that reflect best practices already endorsed by industry associations. For example, the Pacific Coast Shellfish Growers Association (PCSGA) has an *Environmental Codes of Practice*³ that can be a source of best management practices regarding a wide range of issues such as sand dollar removal, sanitation, noise, odors and lighting. Adherence to these practices are voluntary and the code may change over time, so local governments may elect to articulate specific requirements from industry best practices that address community concerns. In some cases, the Shorelines Hearings Board has found that industry standards should be included as permit conditions. (See [Aquaculture case summaries](#),

³ Request a copy from the Pacific Coast Shellfish Growers Association: <http://pcsga.org/>

page 42: *Taylor Shellfish Farm v. Pierce County*, SHB No. 06-039; *Coalition to Protect Puget Sound Habitat v. Pierce County*, SHB No. 11-019.)

Noise, lights and odor

Concerns about noise, lighting and odor impacts from aquaculture have been raised during SMP update processes and shoreline permit appeals. Ecology recommends that local governments determine if and how their existing nuisance ordinances are applicable to aquaculture uses before writing additional nuisance policies and regulations. If the existing nuisance policies and regulations are sufficient, it should be noted in the SMP and the codes cross-referenced. Doing so will make administration easier during permit review.

Wenatchee's SMP cross-references the aquaculture application requirements to existing codes: "14. Aquaculture activities shall comply with all applicable noise, air, and water quality standards. All projects shall be designed, operated and maintained to minimize odor and noise" (5.4.2 Aquaculture, P. Application Requirements).

Local governments should also review applicable Shorelines Hearings Board's decisions before writing policies and regulations related to potential nuisance impacts. The Board has required shielded lighting and other mitigation to address such impacts. (See [Aquaculture case summaries](#), page 42: *Marnin v. Mason County*, SHB No. 07-021; *Taylor Shellfish Farms v. Pierce County*, SHB No. 06-039.)

Hours of operation

Shellfish harvesting typically occurs at low tides which occur periodically at night and on weekends. SMPs should allow harvesting at low tides regardless of when they occur. In the *Marnin v. Mason County* case, SHB No. 07-021, the Shorelines Hearings Board found that shellfish growers have a right to work during low tides. The Board affirmed this in the *Taylor Shellfish Farm v. Pierce County* case, SHB No. 06-039. The geoduck provisions of the SMP Guidelines that took effect in March 2011 reflect the SHB's findings. These provisions support the right to work during low tides, recognizing that limits and conditions to reduce impacts may be needed, and support the right to harvest [WAC 173-26-241(3)(b)(iv)(H) and (v)(C)].

Litter and debris

Nets, rubber bands, cages and other items have been observed to float offsite and litter nearby properties. These materials may pose a hazard to aquatic life from ingestion or entanglement. The Corps requires new and existing operators to permanently mark their identification information on some materials, and retrieve wayward materials in a timely manner, through the federal shellfish permits.

The Shorelines Hearings Board has found that SMPs may also require equipment marking and litter patrols. SMP provisions that address litter and debris should be aligned with local litter

ordinances and require consistency with state and federal regulations at the time of permitting to ensure operators can comply with all local, state and federal permit requirements.

Visual and aesthetic impacts

The state SMP guidelines require local SMPs to address aesthetic impacts from aquaculture facilities: “Aquaculture facilities should be designed and located so as not to... significantly impact the aesthetic qualities of the shoreline” [WAC 173-26-241(3)(b)(i)(C)].

Visual impacts may be related to factors such as the size of overwater structures and their distance off shore. Visual impacts may be mitigated by changes in design and location during the local shoreline permitting process. Height and distance off shore can be modified to reduce visibility. Concentrating the use and related overwater structures in one location instead of multiple locations may also minimize the visibility of facilities from residential or other high use areas.

The *Aquaculture Siting Study* (Ecology, 1986) is a comprehensive study of visual impacts of Washington aquaculture practices. The study assesses visual impacts of both shellfish and finfish aquaculture structures. The study found that, “At distances greater than 1,500-2,000 feet off shore, the visual presence of most facilities is reduced to a line near the horizon” (page 5). Ecology recommends that local governments rely on flexible standards that incorporate the 1,500-2,000 foot distance to address visual impacts from net pens and other aquaculture overwater structures.

Local governments may also consider requiring a visual impacts assessment for aquaculture proposals that include structures. The siting study (pages 68-82) contains an example of an assessment that could be required as part of a project application.

Ecology suggests the following SMP language:

Finfish net pens and other floating structures should be located at least 1,500 feet off shore and outside major navigation channels. Project proponents may request a smaller distance based on a visual impacts analysis submitted at their own expense. The visual impacts analysis must consist of information comparable to that found in the *Aquaculture Siting Study* (Ecology, 1986). The City/County reserves the right to require a visual impacts analysis and modify the offshore distance of aquaculture floating structures to address visual impacts based on the analysis.

If a visual impacts assessment is required, local governments are advised to also develop criteria and thresholds for evaluating visual impacts. Guidance on developing criteria to manage cumulative visual impacts is provided in the siting study (pages 87-92). The study describes floating zones, which are a mix of density and performance standards. They require designating a certain amount of surface coverage to be allowed in a general area (e.g., maximum number of acres in a bay or lake). Within a floating zone, projects can be aggregated or dispersed, depending on the specific views and existing uses at the time of the project proposal.

Including lighting or color restrictions in SMPs may conflict with navigation and safety requirements of the U.S. Coast Guard (Appendix 1). To avoid conflicts, Ecology recommends referencing the Coast Guard provisions along with height and other restrictions.

Language from Kitsap County's SMP addresses visual impacts, identification and maintenance of structures and equipment, and compliance with Coast Guard standards:

- h. Over-water structures and/or equipment, and any items stored upon such structures such as materials, garbage, tools, or apparatus, shall be designed and maintained to minimize visual impacts. The maximum height for items stored upon such structures shall be limited to three feet, as measured from the surface of the raft or the dock, unless shoreline conditions serve to minimize visual impacts (for example: high bank environments, shorelines without residential development), but in no case shall the height exceed six feet. Height limitations do not apply to materials and apparatus removed from the site on a daily basis. Materials that are not necessary for the immediate and regular operation of the facility shall not be stored waterward of the OHWM.
- i. Aquaculture structures and equipment used on tidelands below ordinary high water shall be of sound construction, with the owners' identifying marks where feasible, and shall be so maintained. Abandoned or unsafe structures and/or equipment shall be promptly removed or repaired by the owner.
- l. All floating and submerged aquaculture structures and facilities in navigable waters shall be marked in accordance with U.S. Coast Guard requirements (Kitsap County SMP 22.600.115.C.).

Contaminated sediments

Shoreline use and development has left behind contaminated tidal and subtidal lands. Shoreline uses and development such as harvesting geoduck and raking manila clams, driving pilings and anchors for barges, or other aquaculture activities may disturb contaminated sediments in the aquatic environment.

Local governments should map aquatic contaminated sediments as part of the inventory and characterization and discuss aquaculture activities that would disturb them in the cumulative impacts analysis. Data sources are available and listed in [Appendix 3](#).

Aquaculture, as with other uses, should not be allowed in areas of known contaminated sediments unless the project proponent can demonstrate that contaminated sediments will not be disturbed and state sediment management standards can be met [WAC 173-204-320(2) and 173-204-562(2)]. Disturbances should be mitigated consistent with WAC 173-26-201(2)(e). Restoration aquaculture might be appropriate in these areas.

Local governments should consult with Washington Department of Health (WDOH) prior to allowing the siting of shellfish aquaculture in contaminated sediments. Allowing oyster and non-

geoduck clam aquaculture in areas of contaminated sediments does not automatically pose a significant human health threat. WDOH has studied oyster and non-geoduck clam tissue samples and found that edible parts of these shellfish do not contain levels of toxic chemicals that pose a significant risk.

WDOH's Site Assessment Program conducts health consultations and community education and outreach to protect Washington residents from potential exposure to these contaminants. Many of these site evaluations involve contaminated sediments and should also be reviewed for specific local concerns. A link to those locations is listed in [Appendix 3](#).

Furthermore, WDOH coordinates the collection of geoduck samples for arsenic analysis throughout Puget Sound in response to China's ban on geoduck imports in 2014. A link to information about sampling and areas cleared for export can be found in [Appendix 3](#).

Addressing impacts – critical saltwater habitats

Protecting critical saltwater habitats is important to achieving no net loss of ecological functions. The SMP Guidelines state, “Critical saltwater habitats require a higher level of protection due to the important ecological functions they provide” [WAC 173-26-221(2)(c)(iii)(A)]. Critical saltwater habitats include:

...all kelp beds, eelgrass beds, spawning and holding areas for forage fish, such as herring, smelt and sandlance; subsistence, commercial and recreational shellfish beds; mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association [WAC 173-26-221(2)(c)(iii)(A)].

Critical saltwater habitats include existing subsistence, commercial and recreational shellfish beds because of their reliance on clean water. However, commercial aquaculture beds can be regulated. “The inclusion of commercial aquaculture in the critical saltwater habitat definition does not limit its regulation as a use” [WAC 173-26-221(2)(c)(iii)(B)]. The SMP Guidelines specifically direct local governments to identify limits and conditions to protect critical saltwater habitats from new commercial geoduck aquaculture [WAC 173-26-241(3)(b)(iv)(L)].

Commercial and recreational shellfish areas also are fish and wildlife habitat conservation areas per WAC 365-190-130. SMP critical areas regulations for critical saltwater habitats apply to all in-water uses in these habitats. For example, the application requirements in critical areas provisions may cover some of the information necessary for reviewing aquaculture proposals that are likely to occur in or over critical saltwater habitats.

Requiring site specific surveys to determine the presence and condition of critical saltwater habitats that need protection is essential to ensuring no net loss of ecological functions. Ecology recommends that local governments require baseline surveys and other information essential to determining necessary mitigation measures. Cross-referencing between aquaculture use provisions and general regulations will make the regulations easier to administer and clearer to interested parties. Examples from local SMPs include the following:

J. Potential impacts. If uncertainty exists regarding potential impacts of a proposed aquaculture activity, and for all experimental aquaculture activities, baseline and periodic operational monitoring by a qualified professional may be required, at the applicant's expense, and shall continue until adequate information is available to determine the success of the project and/or the magnitude of any probable significant adverse environmental impacts. Aquaculture operators may submit monitoring reports prepared by qualified professional as part of City of (sic) monitoring required by other state or federal agencies. 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 (City of Entiat, 5.2.4 Aquaculture Regulations).

2. When a habitat survey (see Section 22.700.145, Biological and Habitat Surveys) is required pursuant to the applicable use or modification section, the Kitsap County Shoreline Inventory and Characterization report shall be consulted as a basis for existing conditions, along with appropriate field verification. See the applicable sections for specific measures necessary for minimization and mitigation of impacts to critical saltwater habitats. (Kitsap County SMP, 22.400.115. D.)

Considerations for siting structures in critical saltwater habitats and avoiding or mitigating impacts to two types of critical saltwater habitats – eelgrass and forage fish spawning habitat – are discussed below.

Structures

Standards in the SMP Guidelines address when human-made structures such as mussel rafts, oyster floats, and net pens may be allowed to intrude into or over critical saltwater habitats. Many SMPs cite these standards verbatim in the critical areas section of the SMP. Structures must meet certain criteria if allowed in critical saltwater habitats:

- a. The public's need for such an action or structure is clearly demonstrated, and the proposal is consistent with protection of the public trust.
- b. Avoidance of impacts to critical saltwater habitats by an alternative alignment or location is not feasible or would result in unreasonable and disproportionate cost to accomplish the same general purpose. A cost analysis may be required to assist with the feasibility determination.
- c. The project, along with any required mitigation, will result in no net loss of ecological functions associated with critical saltwater habitat.
- d. The project is consistent with the State's interest in resource protection and species recovery [WAC 173-26-221(2)(c)(iii)(C)].

Eelgrass

Proposed aquaculture sites sometimes contain eelgrass, or eelgrass may move into existing aquaculture sites. Having clear SMP policies and regulations regarding eelgrass will help achieve protection of native eelgrass – *Zostera marina* – while allowing for management of *Zostera japonica* – a state listed noxious weed.

Eelgrass and other aquatic vegetation is addressed in several locations in the SMP Guidelines. Eelgrass beds are critical saltwater habitat per WAC 173-26-221(2)(c)(iii) and require “a higher level of protection due to the important ecological functions they provide.”

The aquaculture provisions in the SMP Guidelines state that aquaculture “should not be permitted where it would adversely impact eelgrass” [WAC 173-26-241(3)(b)(i)(C)]. WAC 173-26-201(3)(c)(ii) lists “native aquatic vegetation” among the information required for the shoreline inventory and characterization. The SMP Guidelines also provide for invasive, noxious and non-native species such as *Z. japonica* to be treated differently from other species in vegetation management and conservation elements of an SMP [WAC 173-26-020(36), WAC 173-26-221(5)].

The scientific and regulatory communities agree that the overall habitat value of native eelgrass is very high, especially for salmon, forage fish and crab. SMPs should be written to avoid or mitigate impacts to *Z. marina*, without constraining legal control of *Z. japonica*. Given the two eelgrass species occur in close proximity or in mixed beds (Figure 16-4), protection of mixed beds will result in protection of *Z. japonica* as well.

Defining eelgrass and eelgrass bed

The SMP Guidelines were adopted prior to recent regulatory changes and do not define eelgrass, nor do they explicitly distinguish between native and non-native eelgrass. Ecology interprets eelgrass and eelgrass beds as used in the SMP Guidelines to only mean *Z. marina* eelgrass and beds. Ecology recommends local governments define eelgrass as *Z. marina* if an eelgrass definition is included in the SMP.

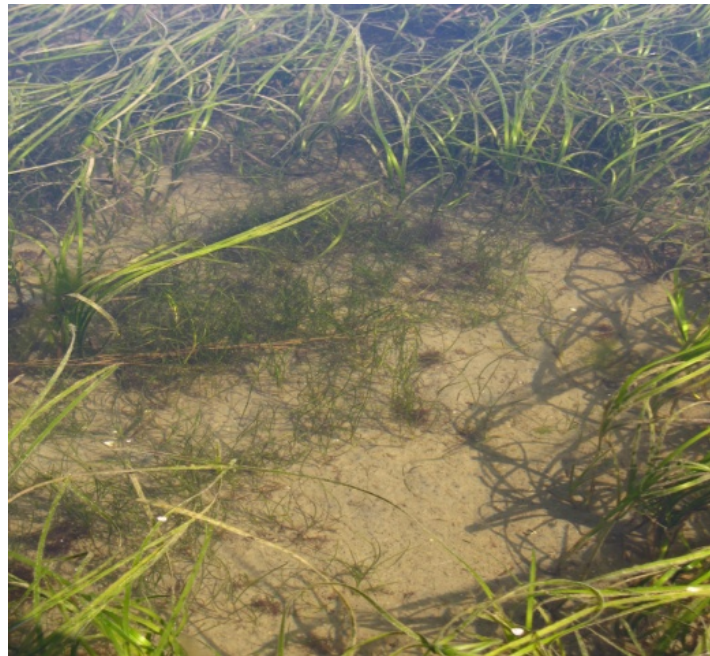


Figure 16-4: *Z. japonica* and *Z. marina* form a mosaic. *Z. japonica* is the shorter and darker eelgrass in the middle. (Jeff Gaeckle, Washington Department of Natural Resources photo.)

The SMP Guidelines also do not define “eelgrass bed.” State and federal organizations use different definitions, which are evolving along with seagrass science. Ecology recommends local governments not define “eelgrass bed” in the SMP but consult with state and federal agencies for the most appropriate definition at the time of project review.

Kitsap County addresses the determination of eelgrass with the following definition: “...Where eelgrass beds are disputed as a critical saltwater habitat, appropriate state agencies and co-managing tribes shall be consulted in order to assist with the determination” (Kitsap County SMP, Title 22.150.260, Definitions).

Taking this approach to defining eelgrass and eelgrass beds will align the SMP with other applicable policies and regulations, including:

- State noxious weed regulations: Washington’s Noxious Weed Control Board lists non-native eelgrass as a Class C noxious weed (WAC 16-750-015) where it occurs. The listing occurred in 2012.

The noxious weed listing does not require shellfish growers and others to control *Z. japonica* but does allow them to voluntarily control it. Physical removal must comply with all state and federal regulations. Individual county weed boards can select the weed for required control. If this occurs, property owners must control non-native eelgrass. Chemical control is only allowed by state permit and is currently only permitted for commercial clam beds in Willapa Bay.

- Water Pollution Control Act: Per RCW 90.48.445, Ecology cannot issue permits that “burden” noxious weed control efforts.
- Nationwide Permit 48: In administering its Section 401 Water Quality Certifications for commercial shellfish beds, Ecology requires buffers for native eelgrass consistent with NWP 48. These certifications include protections for only native eelgrass, including prohibiting expansion into *Z. marina* beds and requiring buffers.
- WDFW’s Priority Habitat and Species list: *Z. japonica* beds are not listed as priority habitat. Non-native species are not included in the Priority Habitat and Species list.
- Puget Sound Action Agenda: The Puget Sound Partnership set a target to increase the extent of native eelgrass to 120% of the area measured during the 2000-2008 baseline period. As an interim measure, DNR is developing a coordinated strategy to accomplish the eelgrass recovery target.

Distinguishing between species



Figure 16-5: A close up of an intermingled eelgrass bed shows taller and wider bladed *Z. marina* on the surface, and shorter, thinner bladed *Z. japonica* underneath (left photo). Padilla Bay tideflats contain the largest continuous eelgrass bed in the Lower 48 states, with intermingled *Z. marina* and *Z. japonica* (right photo). (Cedar Bouta photos.)

The best state source of eelgrass data is the DNR dataset, which distinguishes between non-native and native eelgrass where such mapping has occurred. DNR's monitoring project maps native eelgrass and identifies non-native eelgrass beds, but does not map the shallow edge of non-native eelgrass. WDFW Priority Habitats and Species (PHS) maps also include some data on eelgrass habitat, but do not distinguish between native and non-native eelgrass. (See Appendix 3 for data sources.) Local SMP inventory and characterization maps may include both species mapped as one feature or separately. Given the dynamic nature of the extent and location of eelgrass, site specific surveys should be required at the time of project review to determine the current extent and species composition on the project site.

Non-native eelgrass generally populates a higher, drier tidal range than native eelgrass. In some parts of Puget Sound and the Pacific Coast, the two species have formed a mosaic pattern on shallow tidelands where there is an uneven surface and water depth. Non-native eelgrass occupies the drier, shallower sediment mounds, and native eelgrass occupies the wetter areas surrounding the mounds. Distribution patterns change with winter storms and other substrate disturbance, and over time, as the eelgrass traps more sediment. Both species may also occupy the same zone of stable, flat tidelands, creating more evenly mixed (intermingled) beds (Figure 16-5). Differentiating the species often requires collecting specimens. Although native eelgrass generally has wider and taller leaves (shoots) and a lighter green color, this is not always the case. In mixed beds, protecting native eelgrass will result in protection of non-native eelgrass.

Site surveys are useful because the two eelgrass species overlap within their range and distribution and are difficult to tell apart under certain conditions. Both species can occupy salmon migration zones and refugia as well as herring and other forage fish spawning habitat (Figure 16-6).

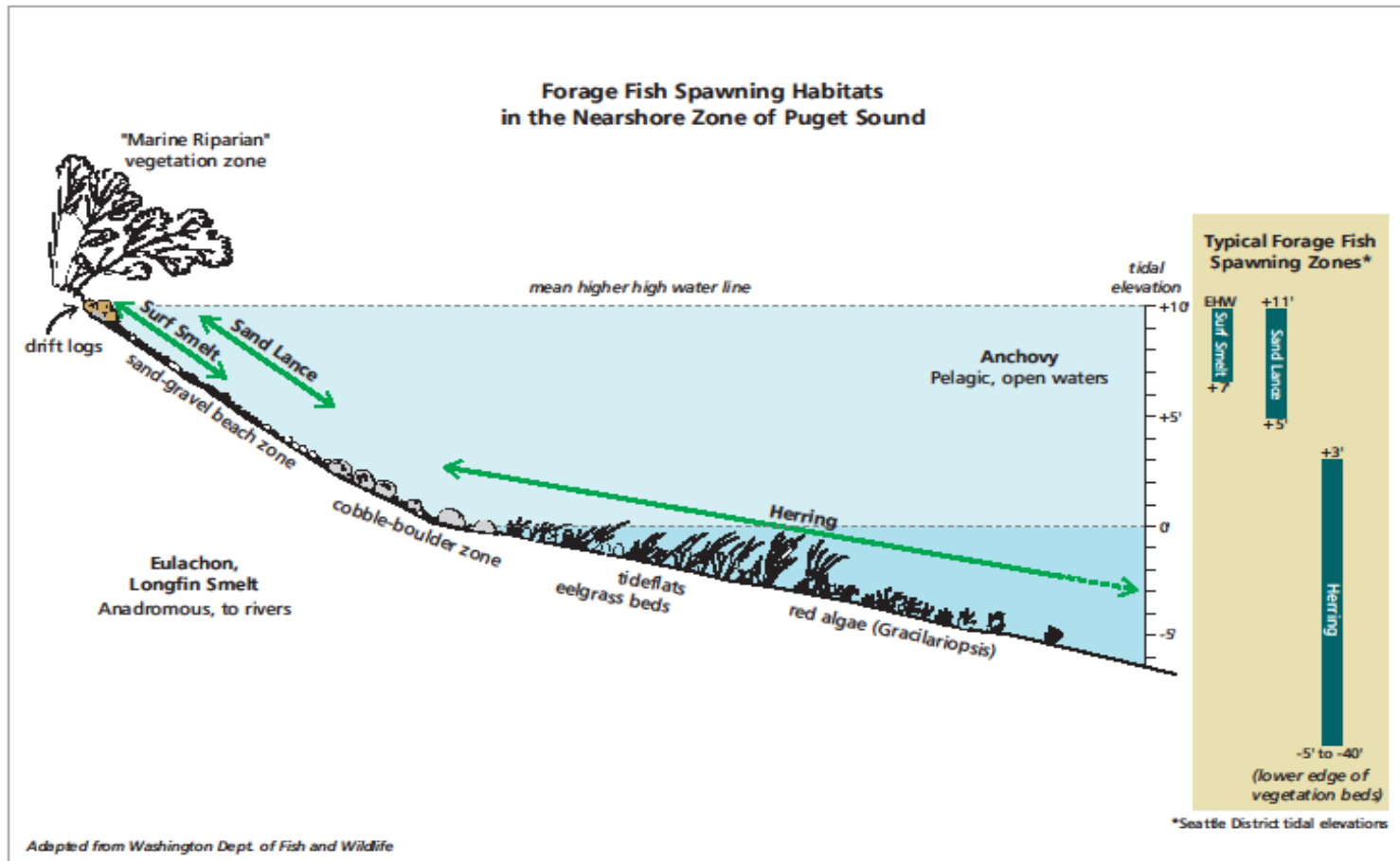


Figure 16-6: This adaption of a Washington Department of Fish and Wildlife illustration by Ecology SEA Program shows forage fish spawning habitats, eelgrass, and red algae in the nearshore zone of Puget Sound.

Defining buffers

Local governments should require buffers in order to avoid impacts to eelgrass and require monitoring to ensure the buffers are adequate. Buffers should be determined on a site-by-site basis using the most relevant science and in consultation with state and federal agencies.

Ecology recommends that local governments consult with DNR regarding appropriate buffers at the time of permit review. The current buffer width range used in state 401 Water Quality Certifications for new intertidal geoduck aquaculture is 10-25 feet. The Corps currently requires 5-meter (16.4 feet) buffers through federal permits for intertidal shellfish aquaculture. DNR will establish eelgrass buffers on state managed aquatic lands based on individual site assessments in order to ensure environmental protection of state-owned aquatic resources. Currently, DNR does not authorize subtidal geoduck aquaculture on state-managed aquatic lands.

During project review, local governments should determine whether the proposed project would be located in or immediately adjacent to eelgrass beds of *Z. marina* by relying on current data and site specific information. A site survey is one way to identify species and extent of coverage. Any site survey should be conducted by an expert who can distinguish between the two species during summer when both species have emerged. WDFW's [Eelgrass/Macroalgae Habitat Interim Survey Guidelines](#) can serve as a useful guide for site surveys and assessing mitigation performance.

Forage fish spawning habitat

Forage fish spawning habitat (Figure 16-5) is a critical saltwater habitat requiring protection. All aquaculture should be sited outside known forage fish (such as Pacific herring and sand lance) spawning habitat, if possible. If not possible, operating during certain work windows and conducting surveys and monitoring for forage fish activity can be used to avoid and mitigate impacts.

Identifying habitat locations

WDFW conducts surveys of forage fish spawning habitat and its [Marine Beach Spawning Fish Ecology website](#) provides some documented locations. Ecology recommends local governments confer with WDFW to ensure the most current information is used for the inventory and characterization, SMP and permit review. Local governments should not rely on the inventory and characterization for permit reviews because forage fish spawning habitat may change over time.

WDFW has identified work windows for intertidal activities that may affect forage fish. Ecology recommends that local governments who want to add work windows to their SMP confer with WDFW on appropriate work time frames that minimize disturbance of forage fish. A second option is to identify an appropriate work window during permitting.

SMPs should require forage fish spawning baseline surveys for new intertidal aquaculture that will occur at or near documented forage fish spawning habitat. The surveys should be conducted by trained personnel using appropriate protocols approved by WDFW. Other aquaculture permits may require a survey and Ecology recommends that proponents be allowed to submit these to meet local requirements.

Shellfish culturing that only occurs below the +3 feet Mean Lower Low Water tidal elevation typically avoids sand lance and surf smelt habitat, but may overlap Pacific herring spawning habitat. For such projects, Ecology recommends local governments require a herring spawning survey for work outside any work window, prior to undertaking activities. If spawn is present, activities should be delayed until the eggs are hatched and spawn is no longer present.

Ecology recommends that shellfish culturing be restricted to below the +5 feet Mean Lower Low Water tidal elevation if the area is documented as Pacific sand lance spawning habitat by WDFW or a site specific survey. Also, shellfish culturing should be restricted to below the +7 feet Mean Lower Low Water tidal elevation if the area is documented surf smelt spawning habitat by WDFW or a site specific survey.

Example SMP language includes:

- Forage fish spawning surveys are required as part of intertidal aquaculture project applications when projects will occur at known or likely forage fish spawning habitat sites. Surveys shall follow WDFW protocols and be conducted by trained personnel. Spawning surveys conducted to meet federal permits may be submitted to meet this requirement, if conducted within a reasonable timeframe to accurately reflect current circumstances.
- Shellfish culturing (e.g., culturing by rack and bag, raft, long-line, ground methods) that occurs at +3 feet of Mean Lower Low Water tidal elevation and below may occur in Pacific herring spawning habitat. For projects within WDFW documented Pacific herring spawning locations, in-water activities that would affect herring spawn should be restricted to WDFW's approved work window. For activities outside the approved work window, a survey should be conducted before undertaking activities including mechanical dredge harvesting, raking, harrowing, tilling or other bed preparation, frosting or applying oyster shell on beds, geoduck planting and harvesting, net removal, and tube removal. The survey should include inspection of vegetation, substrate and equipment. If spawn is present, activities should be delayed until the eggs are hatched and spawn is no longer present.
- Commercial shellfish aquaculture (e.g., culturing by rack and bag, raft, long-line, ground methods other than hand seeding) shall not be allowed above the tidal elevation of +5 feet of Mean Lower Low Water if the area is documented Pacific sand lance spawning habitat by WDFW.

- Commercial shellfish aquaculture (e.g., culturing by rack and bag, raft, long-line, ground methods other than hand seeding) shall not be allowed above the tidal elevation of +7 feet of Mean Lower Low Water if the area is documented surf smelt spawning habitat by WDFW.
- Caution should be taken to avoid impact and minimize disturbance of forage fish larvae that are present. For projects other than commercial shellfish aquaculture within WDFW documented forage fish spawning locations, no activities should occur during spawning windows as identified by WDFW. If forage fish spawn are present in the growing area or adjacent tidelands, then no activities may occur until the eggs are hatched.
- For intertidal shellfish aquaculture reliant on beach access, a designated beach access corridor shall be established to minimize impacts to forage fish spawning habitat. The corridor route should be as narrow as practicable. The corridor restriction does not apply to activities associated with monitoring and debris cleanup.

Finfish net pens, hatcheries & acclimation facilities

The culturing and farming of finfish occurs in almost every county of Washington for food production, recovery of native species, research, or supplementing tribal, commercial and recreational fisheries. The potential for offshore coastal aquaculture is being explored through Marine Spatial Planning. When developing policies and regulations for finfish aquaculture, local governments should consider that visual impacts, navigation hazards, boat and onshore traffic, and in-water and onshore structures may be similar regardless of who owns or operates the facility, or if the pen contains native or non-native species.



Figure 16-7: Atlantic salmon are raised at Cooke Aquaculture Pacific's (formerly American Gold Seafoods) net pen near Fort Ward, Bainbridge Island. (Lori LeVander photo.)

This section addresses specific questions raised by local governments regarding commercial finfish net pens of non-native species, and state and private hatcheries and acclimation facilities.

Federal and tribal net pens

SMPs do not regulate federal or tribal finfish facilities. These facilities are permitted through the U.S. Environmental Protection Agency. For example, SMPs do not regulate the following tribal net pens:

- The Squaxin Island Tribe's large net pen in southern Puget Sound, co-managed with WDFW, is used for the acclimation of hatchery-reared, juvenile Coho salmon to marine waters (More: <http://www.squaxin-nr.org/category/netpens/>).
- Other tribal pens in Puget Sound are used for acclimation of juvenile fish to marine waters, including those operated by the Suquamish Tribe in Elliot Bay and Agate Pass, Port Gamble S'Klallam Tribe in Port Gamble, and the Skokomish Tribe in Quilcene Bay.
- The Pacific Seafood net pens on the Columbia River are used to rear steelhead to marketable size under agreement with the Confederated Tribes of the Colville Reservation. (More: <https://www.pacseafood.com/locations/details/pacific-aquaculture/>).

SMP regulations may apply to land within reservation boundaries owned in-fee by a non-tribal member, depending on a local government's agreement with a tribal nation.

Commercial net pens

The following discussion addresses specific concerns raised by local governments regarding commercial net pens of non-native species. Commercial finfish net pens of Atlantic salmon (*Salmo salar*) have operated in Washington waters for more than 40 years. There are eight commercial net pen sites encompassing approximately 21 total surface acres (Alan Cook, Icicle Seafoods, Inc., personal communication). They are located near:

- Port Angeles in Clallam County (1 site).
- Bainbridge Island in Kitsap County (3 sites).
- Cypress and Hope Islands in Skagit County (4 sites).

All commercial net pens are on state-owned aquatic lands managed by DNR and any new ones will likely be sited on state lands, too. This use of state lands requires a lease agreement with DNR. The current total acreage of state lands leased for commercial net pens is 173 bottom acres (Blain Reeves, DNR, personal communication). The bottom acreage is larger than the surface acreage to allow for anchoring the pens.



Figure 16-8: White bags of clean nets await installation at the Cooke Aquaculture Pacific (formerly American Gold Seafoods) fish farm near Port Angeles in the Strait of Juan de Fuca. (Lori LeVander photo.)

The Aquatic Lands Act directs DNR to provide a balance of public benefits for all citizens of the state. This includes public use and access, water-dependent uses, environmental protection, renewable resources and revenue generation [RCW 79.105.030].

Net pens: Options for local governments

When determining areas where net pens may be allowed or prohibited, local governments may consider the areas of special concern in the Ecology document, *Recommended Interim Guidelines for the Management of Salmon Net-Pen Culture in Puget Sound* (Science Applications International Corporation, 1986, page 7). The interim guidelines identify “areas of special concern in which culture is not recommended unless the applicant can demonstrate that culture will not result in adverse environmental effects.” These areas are shallow and have low flushing rates. A commercial net pen would likely not be able to meet state water quality standards in these locations. These nutrient sensitive areas and the associated counties are:

1. Budd Inlet: Thurston County.
2. Holmes Harbor: Island County.
3. Hood Canal south of Hazel Point: Mason, Jefferson, and Kitsap County.

Local governments should use caution relying on other recommendations of the 1986 interim net pen guidelines and related environmental impact statement (Washington Department of Fisheries, 1990). The interim guidelines document is largely out of date. Ecology has reviewed

the original rationale for the 1986 guidelines and found many recommendations are obsolete, unnecessary or inadequate given today's operations ([Appendix 4](#)).

Net pen provisions should reflect current scientific information and address local issues and conditions. Local governments can require site-specific analysis as part of permit applications. Information about net pen size and design, production capacity and rearing schedules, depth and tidal flushing of the proposed location, water quality, navigation, and use conflicts can be requested of project applicants. Local governments should consider whether applicable SMP critical area provisions have application requirements which will provide the necessary information for a case-by-case, in-depth review, before requiring similar information through the aquaculture use provisions. Cross-referencing to applicable critical areas provisions may be appropriate.

Net pens are subject to state and federal permits ([Appendix 1](#)). Ecology conducts an in-depth review of environmental impacts as part of the NPDES permit application process for commercial net pens. Local governments may require applicants provide state and federal permit information as part of a local permit application and may find that many concerns are already addressed through NPDES permits.

Net pens: Addressing impacts

In addition to general and critical saltwater impacts (pages 20 and 25, respectively), other concerns about impacts from commercial net pens have been raised by residents through local SMP update processes. Many concerns stem from historic impacts that are now addressed through industry changes and state and federal regulations. The permitting process should be used to evaluate proposals and require mitigation and monitoring to assure community interests are met. (See [Preparing for permitting](#), page 15.)

As with other aquaculture provisions in the SMP, net pen provisions should be relevant to today's net pens and grounded in documented rationale. Net pen provisions should reflect current science, practices, and environmental conditions, as well as the existing regulatory framework.

There is abundant published science and other information on commercial net pen aquaculture, which occurs throughout the world. Local governments are encouraged to rely on information relevant to Washington, including Ecology's 20 years of NPDES monitoring data.⁴ Local governments should also rely on comprehensive reviews that draw conclusions based on a set of published work, rather than individual articles that may summarize only one study or perspective. Relying on comprehensive reviews can provide succinct insights into consensus among the scientific community. (See [Appendix 3](#), net pens.)

Example language from the Kitsap County SMP that addresses finfish net pens is shown below.

⁴ Permit and Reporting Information System (PARIS). Ecology's water quality permit database for National Pollutant Discharge Elimination System (NPDES) permits and State Waste Discharge Permits.

H. Policy SH-27. Aquaculture should not be permitted where it would result in a net loss of shoreline ecological functions and processes, adversely impact eelgrass and macroalgae, or significantly conflict with navigation and other water-dependent uses. Aquaculture is not required to protect state-listed noxious weed species when control methods are conducted within applicable agency standards. In general, the following preferences apply when considering new aquaculture activities:

1. Projects that are not likely to negatively impact critical saltwater habitats.
2. Projects that involve little or no substrate modification.
3. Projects that involve little or no supplemental food sources, pesticides, herbicides or antibiotic application.

I. Policy SH-28. Aquaculture facilities should be designed and located to avoid:

- A. the spread of disease to native aquatic life;
- B. the establishment of new nonnative species, which cause significant ecological impacts; and
- C. significant impact to the aesthetic qualities of the shoreline (Kitsap County SMP, 22.300.125).

Floating net pens are prohibited south of Hazel Point on Hood Canal. A conditional use permit (CUP) is required for floating net pens in all areas.

C. Development Standards

1. General Standards.

g. Project applicants proposing to introduce aquatic species that have not previously been cultivated in Washington State are responsible for pursuing required state and federal approvals relating to the introduction of such species, as determined by applicable state and federal agencies. A plan for monitoring and adaptive management shall also be submitted for county review, unless the operation is conducted in a fully contained system with no water exchange to the shoreline. The county shall provide notice and time to comment for appropriate agencies in accordance with county procedural requirements, and shall circulate the monitoring and adaptive management plan. Upon approval, the plan shall become a condition of project approval.

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

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

- a. Fish net pens shall meet, at a minimum, state approved administrative guidelines for the management of net pen cultures. In the event there is a conflict in requirements, the more restrictive shall prevail.
- b. Alternative facilities and technologies that reduce ecological and aesthetic impacts shall be preferred to traditional floating net pens.

- c. Anchors that minimize disturbance to substrate, such as helical anchors, shall be employed.
- d. Net pen facilities shall be located no closer than one thousand five hundred feet from the OHWM, unless a specific lesser distance is determined to be appropriate based upon a visual impact analysis or due to potential impacts to navigational lines.
- e. Net cleaning activities shall be conducted on a frequent enough basis so as not to violate state water quality standards.
- f. In the event of a significant fish kill at the site of the net pen facility, the facility operator shall submit a timely report to the Kitsap public health district and the Kitsap County department of community development stating the cause of death and shall detail remedial action(s) to be implemented to prevent reoccurrence.
- g. Floating net pens shall be prohibited in Kitsap County's Hood Canal jurisdictional area south of the east-west line between Hazel Point (Jefferson County) and the corresponding easterly shoreline in Kitsap County. (Citation: Recommended Interim Siting Guidelines for the Management of Salmon Net Pen Culture in Puget Sound, page 7.) (Kitsap County SMP, KCC 22.600.115 Aquaculture).

Hatcheries and in-water acclimation facilities



Figure 16-9: The Cottonwood Creek acclimation pond for steelhead at the Grand Ronde River near Anatone, Asotin County, provides steelhead for recreational catch. The pond is operated by WDFW. (WDFW photo.)

Supplementing naturally-spawning and artificial fish stocks through hatcheries and in-water acclimation facilities is a common part of state and tribal finfish management efforts. These facilities meet the definition of aquaculture in WAC 173-26-020(6) and should be evaluated and accommodated, where appropriate.

Having clear definitions within the SMP will assist with distinguishing between finfish facilities that are considered aquaculture versus agriculture. The main distinction is that “aquaculture” facilities are public or tribal facilities designed to supplement naturally spawning or artificial fish stocks, while “agriculture” facilities are upland and private. Having distinct definitions makes it easier to specify which are allowed in specific environment designations, and to avoid confounding endangered salmon recovery efforts or recreational fishing improvements designed to benefit all the citizens of Washington.

Ecology recommends the following definitions be used.

- Fish hatchery – A facility designed for the artificial breeding, hatching and rearing through the early life stages of finfish.
- Fish acclimation facility – A pond, net pen, tank, raceway, or other natural feature or artificial structure used for rearing and imprinting juvenile fish to a body of water before their release.

- Upland finfish rearing facilities – Those private facilities not located within waters of the state where finfish are hatched, fed, nurtured, held, maintained, or reared to reach the size for commercial market sale. This shall include fish hatcheries, rearing ponds, spawning channels, and other similarly constructed or fabricated facilities. (Upland finfish rearing facilities are included in the SMA definition of agricultural activities, not aquaculture [RCW 90.58.065]. Upland finfish and upland finfish rearing facilities are not defined in the SMA or implementing WAC.)

Facilities that meet the definition of aquaculture include 83 state-operated facilities, 51 tribal hatcheries, and 12 federal hatcheries distributed across the state. (See WDFW [Salmon Hatcheries Overview](#).) Hatcheries and in-water acclimation facilities typically include temporary and/or permanent structures. All or part of the use may be water-dependent. In-water acclimation facilities may be used to augment hatchery operations. These facilities temporarily hold juvenile fish, then release them. The process allows anadromous fish to imprint on their natal stream, providing critical cues necessary during their return migration as adults. Non-anadromous species are released in the watershed and remain as recreational catch. Acclimation facilities may be located away from hatcheries, potentially in different shoreline environment designations, watersheds or local government jurisdictions.



Figure 16-10: At Palmer Lake in Okanogan County, temporary traps are being set to capture and tag Kokanee salmon. (WDFW photo.)

Hatcheries generally do not meet the substantial development permit (SDP) exemption criteria afforded watershed restoration projects [WAC 173-27-040(2)(n)(i)]. Hatcheries and in-water acclimation facilities will typically require an SDP if the cost threshold is exceeded [WAC 173-27-040(2)(a)].

SMPs should allow hatcheries and acclimation facilities in the Natural environment and other designations when consistent with the purpose of the designation and a state or tribal finfish management plan or watershed restoration plan. Acclimation facilities may need to be sited high in a watershed in areas that meet the Natural environment designation criteria. Ecology recommends in-water acclimation facilities be allowed in all designations provided they are “very low intensity uses...[and] maintain the ecological functions and ecosystem-wide processes” [WAC 173-26-211(5)(a)(i)].

Example language from the city of Cashmere and Grant County SMPs follows.

C. Recognize and facilitate non-commercial aquaculture. Aquaculture can be commercial or non-commercial. Non-commercial aquaculture is used for the purpose of enhancement and restoration of fish and wildlife resources. The goals and objectives of non-commercial aquaculture include, but are not limited to, supplementation, conservation, restoration, supplementation, mitigation, recreation, education, reintroduction, research, and harvest. Non-commercial aquaculture is location dependent because of the requirement for natal waters. Permitting should be streamlined for facilities that support propagation and acclimation of desirable salmonid species, particularly those covered by the Upper Columbia Salmon Recovery Plan (5.4.1 Policies).

A. Location.

1. Water-dependent portions of commercial and non-commercial aquaculture facilities and their necessary accessories may be located waterward of the OHWM or in the shoreline buffer. Water intakes and discharge structures, water and power conveyances, and fish collection and discharge structures are all considered water-dependent or accessory to water-dependent.

5. To the extent that a location in channel migration zones, floodplains or floodways, or wetlands is allowed after mitigation sequencing and is necessary for non-commercial aquaculture facilities, low-intensity, moderate-intensity and high-intensity aquaculture is preferred in that order as defined in Chapter 8 (City of Cashmere Municipal Code, 5.4.2 Regulations).

- (a) Non-commercial aquaculture undertaken for conservation or native species recovery purposes is a preferred use within Grant County’s shorelines. Allowed fisheries enhancement uses shall include net pens in existing water bodies, hatcheries, rearing ponds, spawning channels, water diversion structures, and groundwater wells, provided that their construction does not result in a net loss of ecological function (Grant County SMP, 24.12.310).

Aquaculture case summaries

Over the years there have been court cases, decisions from the Shorelines Hearings and Pollution Control Hearings boards, and an official Attorney General Opinion dealing with aquaculture use and development under the Shoreline Management Act (SMA). This section provides summaries of these cases. Shorelines Hearings Board and Pollution Control Hearings Board decisions are available at the [Environmental & Land Use Hearings Office](#) website.

Geoduck aquaculture cases – key points

The most recent case law has addressed geoduck aquaculture. Some key geoduck aquaculture points from the legal opinion and decisions discussed in this section are:

- Local governments and Ecology have the authority to require shoreline permits for geoduck aquaculture operations and take enforceable actions.
- A 2007 formal Attorney General Opinion (AGO) discusses permitting requirements for geoduck aquaculture using tubes and nets, and concludes that a substantial development permit (SDP) may be required if the project substantially interferes with normal public use of the surface waters or involves the placement of obstructions. Ecology added a section to the SMP Guidelines that reflects the AGO in WAC 173-26-241(3)(b)(iii). Even where an SDP may not be required, a local government can require a CUP under certain circumstances outlined in the SMP Guidelines [WAC 173-26-241(3)(b)(iv)].
- Local governments may condition the operations and specific activities of commercial geoduck operations to reduce noise, light, and other impacts, but the conditions must be reasonable so as not to preclude the activity altogether.
- Commercial shellfish growers harvest geoduck and other shellfish at low tides, which will occur during the night or weekends. Generally, local governments may not restrict commercial growers' right to harvest during these time periods based on time of day or daylight alone.
- Local governments may restrict intertidal geoduck harvest during forage fish spawning seasons, and may require monitoring for forage fish and herring spawn.
- While an SDP does not always require the preparation of a cumulative impacts analysis, there are circumstances in which one is warranted.

Finfish net pen aquaculture cases – key points

- Finfish net pens must be reasonably accommodated as a water-dependent use. Local governments may apply restrictions to protect the public’s health and ecological functions.
- Specific assessments may be required for each proposal to assess environmental effects.
- The state’s National Pollutant Discharge Elimination System (NPDES) permits should apply the “all known, available and reasonable methods” (“AKART”) of pollution, prevention, control and treatment for marine salmon net pens as required under the state water quality program [WAC 173-201A-020] and require monitoring as part of the permits.

Opinion and cases summary

The Attorney General Opinion and cases related to shellfish are under the “Shellfish aquaculture” heading. Cases related to net pens are under the “Net pens” heading.

Shellfish aquaculture

AGO 2007 No. 1: <http://www.atg.wa.gov/>

The AGO considers whether geoduck aquaculture comes within the definition of development under the SMA so as to trigger the requirement for a substantial development permit (SDP). In answering this question, the AGO analyzes the *Washington Shell Fish* case, in which an SDP was required for geoduck aquaculture. *Washington Shell Fish. v. Pierce County*, 132 Wn. App. 239 (2005). In *Washington Shell Fish*, the court considered whether the activity met the SMA definition of development. Per RCW 90.58.030(3)(a) and WAC 173-27-030(6), “development” is defined as:

a use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to this chapter at any state of water level.

The court found the activity interfered with the normal public use of the surface of the waters, based in part on evidence that floating rope associated with the operations interfered with windsurfing activity. The AGO notes that the presence of a neighboring public park appeared to influence the court’s finding of interference with public use of the waters. As noted by the AGO in its discussion of the *Washington Shell Fish* case, the question of whether a project interferes with public use of the waters is a fact-based test. Relevant factors may include the public use of the surface waters at the site and the manner in which the project interferes with public use.

The AGO addresses the other aspects of the definition of development. It concludes that the harvesting of geoducks is not dredging, filling or removal of materials. The AGO also analyzes whether the placement of the geoduck tubes in the tidal substrate involves the construction of structures. WAC 173-27-030(15) defines “structures” as:

A permanent or temporary edifice or building, or any piece of work artificially built or composed of parts joined together in some definite manner, whether installed on, above, or below the surface of the ground or water, except for vessels.

The AGO states that the placement of the plastic tubes and netting typically associated with geoduck aquaculture does not constitute the construction or exterior alteration of structures. Regarding the placement of obstructions, the AGO concludes that geoduck aquaculture could obstruct passage under some circumstances, and that this would have to be determined on a case by case basis.

In summary, the AGO recognizes that local government may find under certain circumstances that geoduck aquaculture substantially interferes with normal public use of the surface waters or involves the placement of obstructions. Under such circumstances, geoduck aquaculture will require an SDP. Whether such circumstances exist is a fact-based inquiry. Lastly, the AGO concluded that that local governments and Ecology could take formal and informal actions against geoduck farms operating illegally, and that conditional use permits (CUPs) may be required, regardless of whether an SDP is required.

(Note: The SMP Guidelines were amended after the AGO was issued. The Guidelines contain further parameters as to when a CUP is required. Any local government that is preparing a comprehensive SMP update must comply with these Guidelines.)

***Clam Shacks of America, Inc. v. Skagit County*, 109 Wn.2d 91, 743 P.2d 265 (1987):** The Washington Supreme Court affirmed Skagit County’s right to regulate shoreline activities such as harvesting clams by hydraulic rake through CUPs. The dispute arose when Clam Shacks applied for and later received from Skagit County a CUP subject to conditions, including a requirement that Clam Shacks conduct a study of the effect of its operation on vegetation, wildlife, and water quality.

Shortly after Clam Shacks began harvesting, Skagit County issued a cease and desist order because of Clam Shacks' failure to sponsor the required study. Clam Shacks contended that its harvesting was not a "substantial development" or an "aquacultural practice," and therefore not subject to regulation under the SMA. The Supreme Court disagreed, holding that the SMA regulates uses as well as development. Accordingly, the court found that CUPs could be required by master programs for activities other than "developments" under the SMA, and that because Clam Shacks' harvesting operation was a shoreline use, it was appropriate to require a CUP under the Skagit County SMP.

***Marnin v. Mason County*, SHB No. 07-021 (February 6, 2008):** In this case, the Shorelines Hearings Board (SHB) first considered whether a clam and oyster aquaculture operation

constituted substantial development as asserted by the County. Relying on AGO 2007 No. 1 (above) and the *Washington Shell Fish* case as guidance, the SHB concluded that certain characteristics of the site such as stacked growing cages, protruding rebar, polyvinyl fencing, and stationary boundary markers presented a hazard to surface water users, thus triggering the requirement for an SDP. However, the SHB rejected the County's contention that certain aspects of the operation that related to the wet storage, handling, and transport of oysters was commercial activity requiring a CUP.

The SHB then turned its attention to the conditions imposed on the aquaculture activity by the County. In large part, these conditions addressed use conflicts with neighboring residences. The SHB struck down, affirmed or modified several permit restrictions on operations. The SHB struck down restrictions on hours and days of operations that were based on subtidal harvesting restrictions in WAC 220-52-019, which would have significantly impeded intertidal harvesting during low tides. The SHB stated:

Intertidal shellfish aquaculture is different from subtidal, wildstock geoduck harvest because it is necessary to tend the beds and harvest the product during a low tide. Subtidal wildstock geoducks are harvested by divers in deep water and such activity can be accomplished on a fixed schedule without harming the aquacultural enterprise. Restricting work hours based on daylight **alone** fails to recognize the unique influence tidal fluctuations have on shellfish propagation, maintenance, and harvesting. The 8:00 a.m. to 5:00 p.m. limit on working in the tidelands would significantly harm an intertidal shellfish growing operation. [Emphasis added.] *Marnin v. Mason County*, SHB No. 07-021 Modified Findings of Fact, Conclusions of Law and Order at 25 (February 6, 2008).

The SHB went further to consider the statewide policy of encouraging aquaculture as “an activity of statewide interest” (WAC 173-26-241(3)(b)(A), finding that:

the work hours and work days restrictions imposed in this case are unreasonable, and inconsistent with the recognized statewide interest in properly managed aquaculture, as set forth in Ecology regulations and the MCSMP. Restrictions which make successful aquaculture operations impossible should only be imposed if no other alternative can adequately assure compliance with shoreline regulations and attendant protections for nearby property owners. *Marnin*, SHB No. 07-021 at 26.

The SHB also affirmed lighting restrictions and modified the noise restriction to be more consistent with residential noise standards. The condition addressing the color of mesh oyster bags was modified to allow multiple colors within a range of natural tones. Other permit conditions addressing parking, number of employees working outdoors, boundary marking, stacking growing cages, equipment storage, unimpeded access to the upper beach and lower tidelands, vehicle trips, and water deliveries were affirmed.

***Taylor Shellfish Farms v. Pierce County*, SHB No. 06-039; 07-003; 07-005 (January 23, 2009):** In these consolidated cases, the SHB re-visited the question of permit conditions that limit geoduck (shellfish) harvesting to specific dates and times. Relying on its prior decision in

Marnin, the SHB concluded that it was more appropriate to require specific conditions regarding noise and lights than restricting the hours and days of operations. The SHB also required compliance with the Pacific Coast Shellfish Growers Association's Environmental Code of Practices for all geoduck-related activities, and not just harvest.

The Board concludes that Conditions 5 and 15, when applied to all Taylor activities, and when diligently followed, should adequately minimize impacts from noise and lights on neighbors of the Stratford and Meyer sites. The Board concludes that approaching the noise and light issues through specific conditions addressing these potential impacts instead of imposing timing restrictions on the overall geoduck operation is a more effective and less burdensome approach than the use of timing restrictions on the overall operation. This approach is also consistent with the recommendations from several of the committee members on the Legislature's Shellfish Aquaculture Regulatory Committee. The Board concludes that striking SSDP Condition 12, but clarifying that the ECOP provisions pertaining to noise and light and the requirements of Condition 15 apply to all of Taylor's activities and not just harvesting activities, strikes the appropriate balance between allowing for a successful aquaculture operation while protecting nearby property owners. *Taylor Shellfish Farms v. Pierce County*, SHB No. 06-039 at 16.

Case Inlet v. Department of Ecology, PCHB No. 12-033c (September 28, 2012): This was an appeal of Ecology's issuance of four 401 Certifications (water quality) under the Clean Water Act for four geoduck aquaculture operations in Puget Sound in which Petitioners raised both SEPA claims and issues under the Clean Water Act and the state Water Pollution Control Act. The Pollution Control Hearings Board (PCHB) rejected the Petitioner's argument that the categorical exemption from SEPA for Ecology's 401 water quality certifications under WAC 173-11-800(9) does not exempt the certifications from the requirements of RCW 43.21C.030(2), which requires an alternatives analysis. The PCHB concluded that the categorical exemption for 401 certifications is not limited to the threshold determination and the EIS process, but also includes an exemption from the alternatives analysis requirements of RCW 43.21C.030(2).

The Petitioners also argued that the SEPA categorical exemption did not apply because the four projects were physically or functionally related and had a probable significant adverse impact. The PCHB rejected this argument, finding that the Petitioners failed to provide any evidence showing that the four farms were part of a larger proposal. The PCHB stated:

The fact that each of the Taylor geoduck farms are in the vicinity of, or within the same water source (Puget Sound), does not make the projects physically or functionally related, and is not proof that together the farms will have a probable significant adverse environmental impact under WAC 197-11-305(1)(b)(ii). PCHB No. 12-033c, at 14.

The remaining issues on appeal were resolved through a settlement between the parties.

Coalition to Protect Puget Sound Habitat v. Pierce County, SHB No. 11-019 (July 13, 2012): This was a challenge to Pierce County's SEPA determination and issuance of an SDP for a geoduck farm. The SHB affirmed the County's SEPA determination of non-significance for the

geoduck farm and affirmed the SDP with modifications. The SHB added conditions prohibiting geoduck harvest during sand lance and surf smelt spawning season until a survey of spawn is completed. If spawn is present in or adjacent to the harvest areas, harvest is prohibited until the eggs have hatched. Permit modifications also included making the farm subject to the most current version of the Pacific Coast Shellfish Growers Association Environmental Codes of Practice (June 2011 version) and requiring compliance with certain strategies contained in the document. The SHB also required all nets and tubes not in active use to be stored inside a shed.

Coalition to Protect Puget Sound Habitat v. Thurston County, SHB No. 13-006c (October 11, 2013): Thurston County approved four substantial development permits for geoduck farms. Three of the farms were proposed for Henderson Inlet and one for Eld Inlet. Geoduck farms existed in both inlets at time of the board hearing. The petitioners appealed the County’s decisions and cited adverse effects on forage fish, impacts to salmon, impacts from marine debris, impacts on navigation and recreation, and cumulative impacts.

The SHB concluded that petitioners did not meet their burden of proof that the farms would negatively impact forage fish or salmon and that the farms would have negative impacts due to marine debris. The board concluded that the minor impacts to recreation from the farms would not violate the SMA or the County’s SMP. The Board also concluded that the petitioners did not meet the burden of proving the County should have required a cumulative impacts analysis before it approved the SDPs. The Board states that its conclusion is due to a permit condition that requires review of the geoduck operations prior to replanting or within 7 years, whichever comes first. During that review, if the facts warrant a cumulative impact analysis, then such analysis shall be conducted.

Coalition to Protect Puget Sound Habitat v. Pierce County, SHB No. 13-016c (January 22, 2014): This case was a challenge to Pierce County’s approval of an SDP for a subtidal geoduck farm to be located in Henderson Bay. The SHB denied the SDP, in part due to a finding that the proposed eelgrass buffers were inadequate, and that the proposed farm would be located in an area in which eelgrass was previously damaged by unauthorized geoduck farming. In issuing its decision, the SHB also found that the project, as proposed, was not appropriate for a shoreline of statewide significance, where the area in question is not only populated by eelgrass, but in a high energy area with significant fetch, and is very popular for windsurfing.

The Board addressed the petitioner’s position that a cumulative impacts analysis should have been required for the project.

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

1. Whether a shoreline of statewide significance is involved;
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; and
6. The type of use being proposed, and whether it is a favored or disfavored use. (Pages 54-55.)

In this case, the SHB agreed with the petitioners that a cumulative impacts analysis was required for this particular project. In reaching this conclusion, the Board considered the following facts: that the proposed farm would be a first-of-its-kind operation in an area where minimal aquaculture already existed; that prior unauthorized activities had already adversely impacted the shoreline; that the proposal had the potential to harm eelgrass habitat and potentially impact recreational use; and that additional similar projects had either been approved or proposed.

The careful review required for this shoreline of statewide significance weighs in favor of requiring a cumulative impact analysis of the impacts that might result from granting the first subtidal geoduck farm permit in Henderson Bay—in particular, to assess the potential for longer term impacts to fragile resources like eelgrass, as well as unique use of the area by recreationalists like windsurfers. (Page 57.)

The SHB's decision was appealed to Thurston County Superior Court, and the Court affirmed the SHB's denial of the permit. *Darrell De Tienne v. SHB*, Thurston County No. 14-2-00349-5 (2015). The Superior Court decision has been appealed to the Court of Appeals.

Finfish net pen aquaculture

***Holland v. Kitsap County*, SHB No. 86-22 (February 28, 1994):** The SHB reversed the Kitsap County denial of an SDP for 10 submerged net pens in Yukon Harbor and remanded the case to the County for issuance of an SDP with conditions. The County and Yukon Harbor Concerned Citizens appealed to Kitsap County Superior Court, which remanded the case to the Board to determine two issues: whether the proposal was appropriately considered a water dependent use and whether the applicant had the financial resources to support the project. *Holland* appealed the order of remand to the Court of Appeals, which denied review.

In affirming its initial decision, the SHB stated that net pen development “would not significantly hamper traditional navigation within Yukon Harbor” and that aquaculture “is a desired and preferred water-dependent use of this Puget Sound shoreline of state wide significance.” *Holland*, SHB No. 86-22 at 5. The SHB also stated the proposal “recognizes state wide over local interest by contributing to the statewide and worldwide production of food” and that environmental impacts would be minimal. *Holland*, SHB No. 86-22 at 13. The SHB affirmed this position in its decision on remand, but noted that it was not implying that aquaculture should always take preference over other water dependent activities to the “exclusion or significant detriment of those other uses” *Holland*, SHB No. 86-22 at 5. As to the second issue regarding the financial resources of the applicant, the SHB found that it did not have jurisdiction to consider that issue.

Clean Up South Sound v. Swecker, SHB No. 88-38 (July 13, 1989): Mason County and Ecology approved an SDP and CUP for a 42-pen floating salmon aquaculture facility in Case Inlet near Dana Passage, Puget Sound. Clean Up South Sound and Frank Doleshy appealed to the SHB.

The SHB concluded the proposal was consistent with the Shoreline Management Act policies for shorelines of statewide significance [RCW 90.58.020]. The decision states, “Net pen salmon rearing, like other forms of aquaculture, is a water-dependent use. It serves a state-wide interest through the production of food for a broader market.” *Clean Up South Sound*, SHB No. 88-38. The SHB stated the net pen facility is not likely to obstruct commercial navigation, impacts on recreational boating would be minor, and impacts on natural character, aesthetics, natural systems, public access and recreational uses would not be significant.

Tailfin, Inc. v. Skagit County, SHB No. 86-29 (July 22, 1987): Skagit County denied an SDP and CUP for 32 floating pens for fish rearing in marine waters for commercial rearing of salmon and trout. The proposed location was east of Cypress Island, about ¾ miles southeast of Eagle Harbor in shorelines of statewide significance. The applicant appealed the decision.

The SHB stated that salmon net pen culture that is “properly sited” is a water-dependent use. *Tailfin*, SHB No. 86-29 at 16. The SHB found the proposed facility would cause “only a limited reduction in the public’s ability to navigate.” *Tailfin*, SHB No. 86-29 at 14. The high scenic, recreational and educational value of the Island’s shores “must be evaluated with a view toward the preservation of these values. However, this does not mean, and the SMA does not command, that no development may occur there at all. The challenge is, rather, to insure that any development which does go forward is reasonable and appropriate for the particular setting.” *Tailfin*, SHB No. 86-29 at 26.

The SHB stated that the potential for net pen development is limited in the immediate area “given the character of the surroundings.” *Tailfin*, SHB No. 86-29 at 26. The proposal was found to be consistent with the local SMP if conditions regarding antibiotic use, water quality monitoring, fish slaughter and other precautions were in place. The SHB approved the permits to expire five years from date of issuance, with new permits required to continue operations.

Department of Fisheries v. Mason County, SHB No. 91-33 (June 17, 1992): Mason County denied the Department of Fisheries application for a CUP to build facilities for loading frozen fish food on barges for transport by water to salmon feeding nets. The Department appealed the decision.

The proposed location was on the west shore of Hartstene Island and was already in use as an oyster processing facility. The project included a freezer building, loader storage building, floating dock, ramp, and asphalt driveway.

The SHB found that the dock, ramp, loader and asphalt pavement area were related to barge loading and water dependent. The freezer and storage buildings were deemed to be water related

and “an integral part of a water dependent activity ...” *Department of Fisheries*, SHB No. 91-33 at 19. The SHB reversed the denial and directed the County to issue the permits with several conditions.

***Jamestown Klallam Tribe v. Clallam County*, SHB Nos. 88-4, 88-5 (January 8, 1992):** An SDP for 42 salmon net pens in Discovery Bay proposed by the Jamestown Klallam Tribe and Sea Farm of Washington was denied by the Clallam County Board of Commissioners. The commissioners said the proponents failed to show that the proposal was consistent with control of pollution and prevention of damage to the environment, and the resolution denying the permit referred to a conflict between the proposal and commercial shellfish beds in Discovery Bay. The Tribe and company appealed the denial.

The SHB classified the issues into the following subject headings: nitrogen, sedimentation, antibiotics, disease, aesthetics, use conflicts, and economics. After consideration of the evidence, the SHB determined that:

- Nitrogen produced by the project was unlikely to cause any significant change in phytoplankton crop.
- Sediment from the project was not likely to have an adverse biological effect.
- There was no evidence that net pens caused an increase of the bacteria vibrosis in wild fish, nor was there evidence that net pens caused an adverse impact on herring schools.
- The bacteria vibrio parahaemolyticus was not likely to cause infections near the site of the proposed pens.
- Evidence was not “persuasive” that the proposal was likely to induce antibiotic resistant vibrio parahaemolyticus.
- Aesthetic impact of the proposal would be low to moderate, if the pens were “well kept and developed in colors which blend with the aquatic environment.” (*Jamestown Klallam Tribe*, SHB Nos. 88-4, 88-5 at 17.)
- The proposal was unlikely to have significant adverse effects on fishing, related navigation or tow boat navigation.

In light of these findings, the SHB reversed the denial of the permit and remanded it to the County to issue the permit.

***San Juan County v. Department of Ecology*, SHB No. 88-52 (April 7, 1989):** San Juan County appealed Ecology’s denial of master program amendments related to aquaculture. Although Ecology supported the amendments, the agency denied approval because a majority of Ecological Commission members voiced disapproval. The SHB determined the commission did not have a role in approving SMP amendments.

The San Juan Islands Aquaculture Association intervened due to its concerns that the proposed regulations would result in prohibiting aquaculture. The SHB concluded the amendments “do not prohibit aquaculture but allow for the assessment of each proposal’s environmental effect as contemplated in RCW 90.58.020 and the applicable guidelines.” *San Juan County*, SHB No. 88-52 Conclusions of Law (CL) at 19. Referencing RCW 90.58.020, the SHB stated that “the very priority accorded water dependent uses is balanced against the protection of the public health, the

land, its vegetation, wildlife and the waters of the state, including rights of navigation and corollary uses.” *San Juan County*, SHB No. 88-52 at 18.

The SHB found that the proposed regulations were “commensurate with the potential impacts which aquaculture may pose... We conclude that the amendments impose substantive restrictions on aquaculture which are consistent with RCW 90.58.020 and the applicable guidelines.” *San Juan County*, SHB No. 88-52 at 19. The SHB directed Ecology to approve the amendments.

Marine Environmental Consortium v. Department of Ecology, PCHB No. 96-257 (November 30, 1998): This is a series of consolidated cases in which appellants challenged Ecology’s issuance of 12 National Pollutant Discharge Elimination System (NPDES) permits that authorized the discharge of waste materials from floating net pens. After a full hearing on the merits, the Pollution Control Hearings Board (PCHB) concluded that the permits, with additional conditions added by the PCHB, were consistent with applicable water quality laws.

More specifically, the PCHB considered whether the permits included “all known, available and reasonable methods” (“AKART”) of pollution, prevention, control and treatment for marine salmon net pens as required under the state water quality program [WAC 173-201A-020]. The PCHB ruled that the use of all-female or sterile triploid fish stock was not required under AKART to prevent or control the impacts of escaping Atlantic salmon.

In addition, the PCHB ruled that the permits did not otherwise violate the water quality criteria and sediment management standards by allowing discharges of escaping Atlantic salmon, fish food, feces and other substances. Regarding monitoring, the PCHB conditioned its approval of the permits with the inclusion of additional monitoring and reporting for escape prevention and response and use of antibiotics.

References

This publication is part of a significant agency action under RCW 34.05.272 (<http://www.ecy.wa.gov/publications/supportingliterature.html>). To meet the requirements of the law, the sources of information used to support this action are identified. The required 11 types of sources are listed below by number. Each reference is followed by a bracketed number which indicates the source.

1. Peer review is overseen by an independent third party.
2. Review is by staff internal to Department of Ecology.
3. Review is by persons that are external to and selected by the Department of Ecology.
4. Documented open public review process that is not limited to invited organizations or individuals.
5. Federal and state statutes.
6. Court and hearings board decisions.
7. Federal and state administrative rules and regulation.
8. Policy and regulatory documents adopted by local governments.
9. Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under other processes.
10. Records of best professional judgment of Department of Ecology employees or other individuals.
11. Sources of information that do not fit into one of the other categories listed.

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Parametrix, Inc. 1990. *Final Programmatic Environmental Impact Statement: Fish Culture in Floating Net Pens*. Prepared for Washington Department of Fisheries by <https://fortress.wa.gov/ecy/publications/summarypages/1206019.html> [11]

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RCW and WAC

RCW

The Revised Code of Washington (RCW) titles are available at <http://apps.leg.wa.gov/rcw/default.aspx>.

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Aquatic Lands – General, Chapter 79.105 RCW [5]

Aquatic noxious weed control – Water quality permits – Definitions, Chapter 90.48.445 RCW [5]

Bush act/Callow act lands, Chapter 79.135.010 RCW. [5]

Shoreline Management Act of 1972, Chapter 90.58 RCW, particularly RCW 90.58.020. [5]

WAC

The Washington Administrative Code (WAC) regulations are available at <http://apps.leg.wa.gov/WAC/default.aspx>.

Aquaculture, Chapter 220-76 WAC. [7]

Aquaculture Disease Control, Chapter 220-77 WAC. [7]

Definitions, Chapter 173-201A-020 WAC. [7]

Marine sediment quality standards, Chapter 173-204-320 WAC. [7]

Oyster Diseases and Pests, Chapter 220-72 WAC. [7]

Sediment cleanup levels based on protection of the benthic community in marine and low salinity sediment, Chapter 173-204-562 WAC. [7]

Shoreline Management Permit and Enforcement Procedures, Chapter 173-27 WAC, particularly WAC 173-27-080 Nonconforming uses and WAC 173-27-100 Revisions. [7]

State Master Program Approval/Amendment Procedures and Master Program Guidelines, Chapter 173-26 WAC; particularly 173-26-241(3)(b) Aquaculture and 173-26-020, Definitions. [7]

Federal law

Public Law 92-500, Clean Water Act of 1977, Title 33, United States Code 1251 et seq. [5]

Shoreline Master Programs

The Shoreline Master Programs shown below are available on Ecology’s “Status of local Shoreline Master Programs ” web page.

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City of Entiat Shoreline Master Program, effective March 19, 2013. [8]

Grant County Shoreline Master Program, effective September 22, 2014. [8]

Jefferson County Shoreline Master Program, effective February 21, 2014. [8]

Kitsap County Shoreline Master Program, effective December 24, 2014. [8]

Snohomish County Shoreline Management Program, effective July 27, 2012.

City of Tenino Shoreline Master Program, effective June 5, 2012 and *Shoreline Inventory and Characterization*, June 2011. [8]

City of Wenatchee Shoreline Master Program, effective October 13, 2014.

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Shoreline Master Programs Handbook

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Chapter 8, “Shoreline Use Analysis.” [2]

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Shoreline Management Guidebook

Washington Department of Ecology. *Shoreline Management Guidebook: Volume II, Shoreline Master Program Handbook*, Publication 93-104C, 1994. Chapter 6, “Environment Designations” and Chapter 7. “Shoreline Use Policies and Regulations – Aquaculture.” Obsolete. [3]

Legal opinions and cases

Attorney General Opinion

AGO 2007 No. 1. [11]

Court case

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Shorelines Hearing Board cases

Marnin v. Mason County, SHB No. 07-021 (February 6, 2008). [6]

Taylor Shellfish Farms v. Pierce County, SHB No. 06-039; 07-003; 07-005 (January 23, 2009). [6]

Coalition to Protect Puget Sound Habitat v. Pierce County, SHB No. 11-019 (July 13, 2012). [6]

Coalition to Protect Puget Sound Habitat v. Thurston County, SHB No. 13-006c (October 11, 2013). [6]

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Holland v. Kitsap County, SHB No. 86-22 (February 28, 1994). [6]

Clean Up South Sound v. Swecker, SHB No. 88-38 (July 13, 1989). [6]

Tailfin, Inc. v. Skagit County, SHB No. 86-29 (July 22, 1987). [6]

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Jamestown Klallam Tribe v. Clallam County, SHB Nos. 88-4, 88-5 (January 8, 1992). [6]

San Juan County v. Department of Ecology, SHB No. 88-52 (April 7, 1989). [6]

Marine Environmental Consortium v. Department of Ecology, PCHB No. 96-257 (November 30, 1998). [6]

Pollution Control Board case

Case Inlet v. Department of Ecology, PCHB No. 12-033c (September 28, 2012). [6]

Appendix 1: Overview of state and federal aquaculture requirements

Note: This table is not comprehensive and should be used for general information purposes only.

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
State			
WA Dept. of Agriculture (WSDA)	Processing plant license Product identification requirements	<u>Chapter 69.07 RCW</u> : Washington Food Processing Act <u>Chapter 15.85 RCW</u> : Aquaculture Marketing <u>WAC 16-603-010</u> : Aquaculture Identification Requirements <u>WAC 220-370-050</u> : Definitions – Aquaculture disease control	All commercial aquaculture
WSDA – Noxious Weed Control Board	State noxious weed list compliance	<u>Chapter 17.10 RCW</u> : Noxious Weeds – Control Boards <u>Chapter 16-750 WAC</u> : State Noxious Weed List <u>Chapter 16-752 WAC</u> : Noxious Weed Seed and Plant Quarantine Noxious Weed Control Board and Noxious Weed List https://www.nwcb.wa.gov/washingtons-noxious-weed-laws	All commercial and non-commercial aquaculture
WA Dept. of Fish and Wildlife (WDFW)	Authority and regulations	<u>Title 77 RCW</u> Fish and Wildlife <u>Chapter 220-370 WAC</u> : Aquaculture See specific references, below.	All aquaculture, with emphasis on marine finfish aquaculture

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
WDFW	Aquatic farm permit and registration	<u>RCW 77.115.040: Registration of aquatic farmers – fee</u> <u>WAC 220-370-060: Aquatic farm registration required</u>	All commercial finfish and shellfish
WDFW	Disease control	<u>Chapter 77.115 RCW: Aquaculture disease control</u> <u>WAC 220-370-180: Aquaculture – Disease – Control</u>	All food fish, shellfish and aquatic animals
WDFW	Finfish aquaculture escape prevention, reporting and recapture	<u>WAC 220-370-110: Marine finfish aquaculture – Escape prevention plan required</u> <u>WAC 220-370-120: Marine finfish aquaculture – Escape reporting and recapture plan required</u>	All marine finfish aquaculture permittees
WDFW	Inspect facilities	<u>WAC 220-370-130: Aquaculture facility inspection authority – Marine finfish aquaculture</u>	All commercial and non- commercial finfish
WDFW	Import and transfer	<u>WAC 220-340-150: Unlawful acts – Permit required</u> <u>Shellfish Import and Transfer Permits</u> <u>http://wdfw.wa.gov/licensing/shellfish_import_transfer/</u> <u>WAC 220-370-100: Marine finfish aquaculture – Approval permit for marine finfish aquaculture</u> <u>Fish Transport Permits</u> <u>http://wdfw.wa.gov/licensing/fish_transport/transport_app.html</u>	All commercial and non- commercial aquaculture

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
WDFW	Hydraulic Project Approval (HPA)	<p><u>Chapter 220-660 WAC: Hydraulic Code Rules</u></p> <p>Also: Hydraulic Project Approval (HPA) http://wdfw.wa.gov/licensing/hpa/</p>	Finfish projects in or near state waters
WDFW	Scientific collection permits	<p><u>RCW 77.32.240: Scientific permit – Procedures – Penalties – Fees</u></p> <p><u>WAC 220-200-150: Scientific collection permits</u></p>	Research and experimental projects (not for the general public)
WA Dept. of Ecology (Ecology)	Water quality and sediment management authority and regulations	<p><u>Chapter 90.48 RCW: Water Pollution Control</u></p> <p><u>Chapter 173-201A WAC: Water Quality Standards for Surface Waters of the State of Washington</u></p> <p><u>Chapter 173-204 WAC: Sediment Management Standards</u></p> <p>See specific permits and certifications, below.</p>	New commercial geoduck farms
Ecology	<u>Individual 401 Water Quality Certification</u>	<p><u>Governor’s Office of Regulatory Innovation and Assistance (ORIA) – Section 401 Water Quality Certification</u> http://apps.oria.wa.gov/permithandbook/permitdetail.asp?id=43</p> <p>Also: <u>Federal permitting at Ecology</u> https://ecology.wa.gov/Regulations-Permits/Permits-certifications/401-Water-quality-certification</p> <p><u>Federal Water Pollution Control Act</u> <u>Clean Water Act Certification, Section 401</u> https://www.epa.gov/cwa-404/clean-water-act-section-401-certification</p>	New commercial geoduck farms

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
Ecology	Individual National Pollutant Discharge Elimination System (NPDES) Permit	<p><u>Chapter 173-220 WAC: National Pollutant Discharge Elimination System Permit Program</u></p> <p>Also: Water quality individual permits https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-individual-permits</p> <p>Governor’s Office for Regulatory Innovation and Assistance (ORIA) – NPDES Individual Permit http://www.oria.wa.gov/Portals/oria/VersionedDocuments/Schematics_N-Z/NPDES-Individual-Permit-Schematics.pdf</p> <p>Permit and Reporting Information System (PARIS) for current net pen permits. Search PARIS. https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-database</p>	Finfish facilities that harvest over 20,000 lbs. per year or feed more than 5,000 lbs. Of fish food during any calendar month
Ecology	Aquatic pesticide (NPDES) permit	<p><u>See water quality individual permit, above.</u></p> <p>Also: <u>Water quality general permits</u> https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-general-permits</p> <p>U.S. EPA – NPDES Permit Program Basics http://water.epa.gov/polwaste/npdes/Clean-Water-Act.cfm</p>	Aquatic herbicide application on shellfish beds
Ecology	State Waste Discharge General Permit	<u>Chapter 173-216 WAC: State Waste Discharge Permit Program</u>	Aquatic herbicide application on shellfish beds

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
Ecology	Coastal Zone Management Act (CZMA)	Federal consistency: https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management	Federal actions in state waters
Ecology	Ocean Resources Management Act (ORMA)	<p><u>RCW 43.143</u>: Ocean Resources Management Act <u>WAC 173-26-360</u>: Ocean management</p> <p>Also: Washington Marine Spatial Planning (outer coast) http://www.msp.wa.gov/</p>	Finfish and shellfish in the 15 coastal counties
Ecology	State Environmental Policy Act (SEPA)	<p><u>Chapter 43.21C RCW</u>: State Environmental Policy <u>Chapter 197-11 WAC</u>: SEPA Rules</p> <p>Also: State Environmental Policy Act (SEPA) https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management</p>	Finfish and shellfish aquaculture
WA Dept. of Health (Health)	Operator's License, Harvest Site Certificate, Export Certificate	<p><u>Chapter 69.30 RCW</u>: Sanitary Control of Shellfish <u>Chapter 246-282 WAC</u>: Sanitary Control of Shellfish</p> <p>Also: <u>Commercial Shellfish</u> http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/CommercialShellfish</p> <p><u>National Shellfish Sanitation Program (NSSP): Guide for the Control of Molluscan Shellfish, 2013 Revision</u> http://www.fda.gov/downloads/Food/GuidanceRegulation/FederalStateFoodPrograms/UCM415522.pdf</p>	Commercial shellfish

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
WA Dept. of Natural Resources (DNR)	Aquatic Use Permit and Aquatic Lands Lease	<p><u>Chapter 79.105 RCW: Aquatic Lands – General</u> <u>Chapter 79.135 RCW: Aquatic Lands – Oysters, geoducks, shellfish, other aquacultural uses, and marine aquatic plants</u> <u>Chapter 332-30 WAC: Aquatic Land Management</u></p> <p>Also: <u>Aquatic use authorization acquired through JARPA</u> http://apps.oria.wa.gov/permithandbook/permitdetail/31</p> <p><u>Aquatic Leasing and Land Transactions</u> http://www.dnr.wa.gov/programs-and-services/aquatics/leasing-and-land-transactions</p>	Aquaculture on state-owned aquatic lands
Federal			
U.S. Army Corps of Engineers (Corps)	Section 10 Rivers and Harbors Act	<p><u>Rivers and Harbors Appropriation Act of 1899, Section 10: Construction of structures or to excavate, fill, or alter/modify course, location, condition of any navigable water of the U.S.</u> http://www.sam.usace.army.mil/Missions/Regulatory/RegulatoryFAQ/RiversandHarborsAppropriationActof1899.aspx</p> <p>Also includes consideration of impacts to treaty-reserved rights.</p>	Any structures or work in U.S. navigable waters
Corps	Section 404 Clean Water Act (CWA)	<p><u>Clean Water Act, 33 U.S.C 1251, Section 404</u> https://www.epa.gov/cwa-404/clean-water-act-section-404</p>	Any discharge into U.S. navigable waters
U.S. Coast Guard (USCG)	Private Aids to Navigation (PATON)	<p><u>Title 33 Navigation and Navigable Waters (33 CFR)</u> <u>See Part 64: Marking of Structures, Sunken Vessels and Other Obstructions (see Subpart C – Structures)</u> http://apps.oria.wa.gov/permithandbook/permitdetail/98</p>	All commercial and non-commercial structures

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
U.S. Dept. of Commerce, National Oceanic and Atmospheric Admin. (NOAA) National Marine Fisheries Service	ESA Section 7 consultation	<u>Endangered Species Act, Section 7</u> http://www.nmfs.noaa.gov/pr/laws/esa/text.htm#section7 <u>Also:</u> <u>NMFS – Consulting with Federal Agencies (ESA Section 7)</u> http://www.nmfs.noaa.gov/pr/consultation/	Aquaculture that requires a Corps permit and that triggers ESA §7 consultation
<i>Office of National Marine Sanctuaries (ONMS)</i>	<i>National Marine Sanctuary Act (NMSA)</i>	<u>Title 16, Chapter 32, Sections 1431 et seq.</u> https://nmssanctuaries.blob.core.windows.net/sanctuaries-prod/media/archive/library/national/nmsa.pdf <u>Also:</u> <u>National Marine Sanctuary Permits</u> https://sanctuaries.noaa.gov/management/permits/	<i>Aquaculture in national marine sanctuaries may or may not require a permit depending on the specific sanctuary standards</i>
U.S. Fish and Wildlife Service (USFWS)	ESA Section 7 consultation	<u>See NOAA NMFS, ESA Consultation, Section 7, below.</u> <u>WDFW’s Live Fish Transport Permit is an extension of USFWS’ Injurious Wildlife Program.</u>	Aquaculture that requires a Corps permit

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
U.S. Food and Drug Admin. (USFDA)	Hazard Analysis and Critical Control Point (HACCP) Plan	<p>HACCP Plan draft guidance for industry (2016): https://www.fda.gov/downloads/food/guidanceregulation/fsma/ucm517391.pdf</p> <p>Center for Veterinary Medicine (CVM) https://www.fda.gov/AnimalVeterinary/default.htm</p> <p>Center for Food Safety and Applied Nutrition https://www.fda.gov/AboutFDA/CentersOffices/OfficeofFoods/CFSAN/default.htm</p> <p>Also: Fish and Aquatic Conservation – Aquatic Animal Drug Approval Partnership https://www.fws.gov/fisheries/aadap/home.htm</p>	Aquaculture product production, handling, processing, distribution and/or consumption

AGENCY	REQUIREMENT	STATUTE/WAC/RESOURCES	APPLICABILITY TO AQUACULTURE
Tribal Individual Tribes and Northwest Indian Fisheries Commission (NWIFC)	Treaty rights and tribal harvest agreement	<p><u>Rafeedie Decision: U.S. v. Washington, 873 F. Supp. 1422 W.D. WA 1994</u> http://law.justia.com/cases/federal/district-courts/FSupp/873/1422/1466184/</p> <p><u>NWIFC: Commercial Shellfish Growers Settlement</u> http://nwifc.org/about-us/shellfish/commercial-shellfish-growers-settlement/</p> <p><u>Commercial Shellfish Growers Settlement: United States v. State of Washington, Nos. 96- 35014, 35082, 35142, 35196, 35200, 35223, U.S. Ninth Circuit Court, 2007</u> http://caselaw.findlaw.com/us-9th-circuit/1222101.html</p> <p><u>Also:</u> <u>Tribal Sharing of Shellfish</u> http://www.dnr.wa.gov/programs-and-services/aquatics/shellfish/aquaculture</p>	Any work affecting treaty rights related to natural and cultural resources
	Corps' notification regarding natural and cultural resources	<p>Natural: Tribes may comment on proposals regarding habitat and treaty-entrusted Usual and Accustomed (U&A) areas. Any comments must be addressed by the Corps prior to issuing a permit.</p> <p>Cultural: Tribes may provide information on potential affect to historic properties.</p>	Corp permits for shellfish and finfish

Appendix 2: Aquaculture provisions

The following excerpts from the SMP Guidelines are relevant to this guidance, and are not intended to be a complete list of all provisions relevant to aquaculture.

Definitions

Aquaculture WAC 173-26-020(6)

“Aquaculture” means the culture or farming of fish, shellfish, or other aquatic plants and animals. Aquaculture does not include the harvest of wild geoduck associated with the state managed wildstock geoduck fishery.

Development WAC 173-26-030(6)

"Development" means a use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to the act at any stage of water level.

Structure WAC 173-26-030(15)

“Structure” means a permanent or temporary edifice or building, or any piece of work artificially built or composed of parts joined together in some definite manner, whether installed on, above, or below the surface of the ground or water, except for vessels.

Inventory and Characterization

WAC 173-26-201(3)(c)

Local government shall, at a minimum, and to the extent such information is relevant and reasonably available, collect the following Information:

(ii)

Existing aquatic and terrestrial wildlife habitats; native aquatic vegetation; riparian and associated upland plant communities; and critical areas, including wetlands, aquifer recharge areas, fish and wildlife habitat conservation areas, geologically hazardous areas, and frequently flooded areas. (See also WAC 173-26-221.)

(xi)

Information specific to the aquatic environment for siting in-water uses and development, such as sediment contamination, intertidal property ownership, aquaculture operations, shellfish beds, shellfish protection districts, and areas that meet department of health shellfish water quality certification requirements.

WAC 173-26-201(3)(d)(vii) Water quality and quantity.

Identify water quality and quantity issues relevant to master program provisions, including those that affect human health and safety. Review data and information specific to shellfish areas.

Identify measures to protect water quality for human health as described in WAC 173-26-221(6). At a minimum, consult with appropriate federal, state, tribal, and local agencies.

Environmental Designation – Aquatic

WAC 173-26-221(5)(c)(ii)(G)

Local governments should reserve shoreline space for shoreline preferred uses. Such planning should consider upland and in-water uses, water quality, navigation, presence of aquatic vegetation, existing shellfish protection districts and critical habitats, aesthetics, public access and views.

Critical Saltwater Habitats

WAC 173-26-221(2)(c)(iii)(A), (B)

(A) **Applicability.** Critical saltwater habitats include all kelp beds, eelgrass beds, spawning and holding areas for forage fish, such as herring, smelt and sand lance; subsistence, commercial and recreational shellfish beds; mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association. Critical saltwater habitats require a higher level of protection due to the important ecological functions they provide. Ecological functions of marine shorelands can affect the viability of critical saltwater habitats.

Therefore, effective protection and restoration of critical saltwater habitats should integrate management of shorelands as well as submerged areas.

(B) **Principles.** Master programs shall include policies and regulations to protect critical saltwater habitats and should implement planning policies and programs to restore such habitats. The inclusion of commercial aquaculture in the critical saltwater habitat definition does not limit its regulation as a use. Reserving shoreline areas for protecting and restoring ecological functions should be done prior to reserving shoreline areas for uses described in WAC 173-26-201 (2)(d)(i) through (v). Planning for critical saltwater habitats shall incorporate the participation of state resource agencies to assure consistency with other legislatively created programs in addition to local and regional government entities with an interest such as port districts. Affected Indian tribes shall also be consulted. Local governments should review relevant comprehensive management plan policies and development regulations for shorelands and adjacent lands to achieve consistency as directed in RCW 90.58.340. Local governments should base management planning on information provided by state resource agencies and affected Indian tribes unless they demonstrate that they possess more accurate and reliable information.

WAC 173-26-221(2)(c)(iii)(C)

(C) **Standards.** Docks, piers, bulkheads, bridges, fill, floats, jetties, utility crossings, and other human-made structures shall not intrude into or over critical saltwater habitats except when all of the conditions below are met:

- The public's need for such an action or structure is clearly demonstrated and the proposal is consistent with protection of the public trust, as embodied in RCW 90.58.020;

- Avoidance of impacts to critical saltwater habitats by an alternative alignment or location is not feasible or would result in unreasonable and disproportionate cost to accomplish the same general purpose;
- The project including any required mitigation, will result in no net loss of ecological functions associated with critical saltwater habitat.
- The project is consistent with the state's interest in resource protection and species recovery.

Private, noncommercial docks for individual residential or community use may be authorized provided that:

- Avoidance of impacts to critical saltwater habitats by an alternative alignment or location is not feasible;
- The project including any required mitigation, will result in no net loss of ecological functions associated with critical saltwater habitat.

Until an inventory of critical saltwater habitat has been done, shoreline master programs shall condition all over-water and near-shore developments in marine and estuarine waters with the requirement for an inventory of the site and adjacent beach sections to assess the presence of critical saltwater habitats and functions. The methods and extent of the inventory shall be consistent with accepted research methodology. At a minimum, local governments should consult with department technical assistance materials for guidance.

Critical Freshwater Habitats

WAC 173-26-221(2)(c)(iv)(A) and (B)

(A) Applicability. The following applies to master program provisions affecting critical freshwater habitats within shorelines of the state designated under chapter 36.70A RCW, including those portions of streams, rivers, wetlands, and lakes, their associated channel migration zones, and flood plains designated as such in the master program.

(B) Principles. Many ecological functions of lake, river and stream corridors depend both on continuity and connectivity along the length of the shoreline and on the conditions of the surrounding lands on either side of river channel and lake basin. Environmental degradation caused by development such as improper storm water sewer or industrial outfalls, unmanaged clearing and grading, or runoff from buildings and parking lots within the watershed, can degrade ecological functions in lakes and downstream. Likewise, gradual destruction or loss of riparian and associated upland native plant communities, alteration of runoff quality and quantity along the lake basin and stream corridor resulting from incremental flood plain and lake basin development can raise water temperatures and alter hydrographic conditions, degrading ecological functions. This makes the corridor inhospitable for invertebrate and vertebrate aquatic, amphibian and terrestrial wildlife species and susceptible to catastrophic flooding, droughts, landslides and channel changes. These conditions also threaten human health, safety, and property. Long stretches of lake, river and stream shorelines have been significantly altered or degraded in this manner. Therefore, effective management of lake basins and river and stream corridors depends on:

(I) Planning for protection, and restoration where appropriate, throughout the lake basin and along the entire length of the corridor from river headwaters to the mouth; and

(II) Regulating uses and development within lake basins and stream channels, associated channel migration zones, wetlands, and the flood plains, to the extent such areas are in the shoreline jurisdictional area, as necessary to assure no net loss of ecological functions, including where applicable the associated hyporheic zone, results from new development.

As part of a comprehensive approach to management of critical freshwater habitat and other lake, river and stream values, local governments should integrate master program provisions, including those for shoreline stabilization, fill, vegetation conservation, water quality, flood hazard reduction, and specific uses, to protect human health and safety and to protect and restore lake and river corridor ecological functions and ecosystem-wide processes.

Applicable master programs shall contain provisions to protect hydrologic connections between water bodies, water courses, and associated wetlands. Restoration planning should include incentives and other means to restore water connections that have been impeded by previous development.

Master program provisions for lake basins and river and stream corridors should, where appropriate, be based on the information from comprehensive watershed management planning where available.

WAC 173-26-221(2)(c)(iv)(C)

Standards. Master programs shall implement the following standards within shoreline jurisdiction:

- (I) Provide for the protection of ecological functions associated with critical freshwater habitat as necessary to assure no net loss of ecological functions.
- (II) Integrate protection of critical freshwater, riparian and associated upland habitat, protection with flood hazard reduction and other lake, wetland, river and stream management provisions.
- (III) Include provisions that facilitate authorization of appropriate restoration projects.
- (IV) Provide for the implementation of the principles identified in (c)(iv)(B) of this subsection.

Conditional Use Permit Required for New Geoduck Aquaculture

WAC 173-26-241(2)(b)(ii)

(ii) If master programs permit the following types of uses and development, they should require a conditional use permit:

(A) Uses and development that may significantly impair or alter the public's use of the water areas of the state.

(B) Uses and development which, by their intrinsic nature, may have a significant ecological impact on shoreline ecological functions or shoreline resources depending on location, design, and site conditions.

(C) Development and uses in critical saltwater habitats.

(D) New commercial geoduck aquaculture as described in (3)(b) of this section.

Aquaculture Shoreline Use Standards

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

(i) General provisions.

(A) Aquaculture is the culture or farming of fish, shellfish, or other aquatic plants and animals. Aquaculture does not include the harvest of wild geoduck associated with the state managed wildstock geoduck fishery.

This activity is of statewide interest. Properly managed, it can result in long-term over short-term benefit and can protect the resources and ecology of the shoreline. Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area. Local government should consider local ecological conditions and provide limits and conditions to assure appropriate compatible types of aquaculture for the local conditions as necessary to assure no net loss of ecological functions.

(B) Potential locations for aquaculture are relatively restricted due to specific requirements for water quality, temperature, flows, oxygen content, adjacent land uses, wind protection, commercial navigation, and, in marine waters, salinity. The technology associated with some forms of present-day aquaculture is still in its formative stages and experimental. Local shoreline master programs should therefore recognize the necessity for some latitude in the development of this use as well as its potential impact on existing uses and natural systems.

(C) Aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, adversely impact eelgrass and macroalgae, or significantly conflict with navigation and other water-dependent uses. Aquacultural facilities should be designed and located so as not to spread disease to native aquatic life, establish new nonnative species which cause significant ecological impacts, or significantly impact the aesthetic qualities of the shoreline. Impacts to ecological functions shall be mitigated according to the mitigation sequence described in WAC 173-26-201 (2)(e).

(D) Local government should ensure proper management of upland uses to avoid degradation of water quality of existing shellfish areas.

(ii) Siting considerations for commercial geoduck aquaculture.

In addition to the siting provisions of (b)(i) of this subsection, commercial geoduck aquaculture should only be allowed where sediments, topography, land and water access support geoduck aquaculture operations without significant clearing or grading.

(iii) Shoreline substantial development permits for geoduck aquaculture.

As determined by Attorney General Opinion 2007 No. 1, the planting, growing, and harvesting of farm-raised geoduck clams requires a substantial development permit if a specific project or

practice causes substantial interference with normal public use of the surface waters, but not otherwise.

(iv) Conditional use permits for commercial geoduck aquaculture.

(A) Conditional use permits are required for new commercial geoduck aquaculture only. Where the applicant proposes to convert existing non-geoduck aquaculture to geoduck aquaculture, the requirement for a conditional use permit is at the discretion of local government.

(B) All subsequent cycles of planting and harvest shall not require a new conditional use permit.

(C) Conditional use permits must take into account that commercial geoduck operators have a right to harvest geoduck once planted.

(D) A single conditional use permit may be submitted for multiple sites within an inlet, bay or other defined feature, provided the sites are all under control of the same applicant and within the same shoreline permitting jurisdiction.

(E) Local governments should minimize redundancy between federal, state and local commercial geoduck aquaculture permit application requirements. Measures to consider include accepting documentation that has been submitted to other permitting agencies, and using permit applications that mirror federal or state permit applications.

(F) In addition to complying with chapter 173-27 WAC, the application must contain:

(I) A narrative description and timeline for all anticipated geoduck planting and harvesting activities if not already contained in the federal or state permit application or comparable information mentioned above.

(II) A baseline ecological survey of the proposed site to allow consideration of the ecological effects if not already contained in the federal or state permit application or comparable information mentioned above.

(III) Measures to achieve no net loss of ecological functions consistent with the mitigation sequence described in WAC-173-26-201 (2)(e).

(IV) Management practices that address impacts from mooring, parking, noise, lights, litter, and other activities associated with geoduck planting and harvesting operations.

(G) Local governments should provide public notice to all property owners within three hundred feet of the proposed project boundary, and notice to tribes with usual and accustomed fishing rights to the area.

(H) Commercial geoduck aquaculture workers oftentimes need to accomplish on-site work during low tides, which may occur at night or on weekends. Local governments must allow work during low tides but may require limits and conditions to reduce impacts, such as noise and lighting, to adjacent existing uses.

(I) Local governments should establish monitoring and reporting requirements necessary to verify that geoduck aquaculture operations are in compliance with shoreline limits and conditions set forth in conditional use permits and to support cumulative impacts analysis.

(J) Conditional use permits should be reviewed using the best scientific and technical information available.

(K) Local governments should apply best management practices to accomplish the intent of the limits and conditions.

(L) In order to avoid or limit impacts from geoduck aquaculture siting and operations and achieve no net loss of ecological functions, local governments should consider the following:

- (I) The practice of placing nursery tanks or holding pools or other impervious materials directly on the intertidal sediments.
- (II) Use of motorized vehicles, such as trucks, tractors and forklifts below the ordinary high water mark.
- (III) Specific periods when limits on activities are necessary to protect priority habitats and associated species. The need for such measures should be identified in the baseline ecological survey conducted for the site.
- (IV) Alterations to the natural condition of the site, including significant removal of vegetation or rocks and regrading of the natural slope and sediments.
- (V) Installation of property corner markers that are visible at low tide during planting and harvesting.
- (VI) Mitigation measures such as buffers between commercial geoduck aquaculture and other fish and wildlife habitat conservation areas as necessary to ensure no net loss of ecological functions.
- (VII) Use of predator exclusion devices with minimal adverse ecological effects and requiring that they be removed as soon as they are no longer needed for predator exclusion.
- (VIII) Use of the best available methods to minimize turbid runoff from the water jets used to harvest geoducks.
- (IX) Number of barges or vessels that can be moored or beached at the site as well as duration limits.
- (X) Public rights to navigation over the surface of the water.
- (XI) Good housekeeping practices at geoduck aquaculture sites, including worker training and regular removal of equipment, tools, extra materials, and all wastes.
- (XII) Where the site contains existing public access to publicly owned lands, consider recommendations from the department of natural resources or other landowning agencies regarding protection of the existing public access.

Appendix 3: Information resources

In addition to the sources listed under References, the following information sources may be useful to local governments developing SMP aquaculture policies and regulations.

Policy

- Washington Department of Fish and Wildlife, Keith Folkerts, 360-902-2390, keith.folkerts@dfw.wa.gov
 - Growth Management Act & Shoreline Management Act Technical Assistance: http://wdfw.wa.gov/conservation/habitat/planning/gma_sma/index.html
- Washington Department of Health, Cathy Barker, 360-236-3303, cathy.barker@doh.wa.gov
 - Shellfish Program: <http://www.doh.wa.gov/AboutUs/ProgramsandServices/EnvironmentalPublicHealth/EnvironmentalHealthandSafety/ShellfishProgram>
- Washington Department of Natural Resources, Hugo Flores, 360-902-1126, hugo.flores@dnr.wa.gov
 - *Shoreline Master Program updates: Coordinating with DNR* brochure: http://www.dnr.wa.gov/Publications/em_fs13_024.pdf
- Northwest Indian Fisheries Commission, David Fyfe, 360-297-6502, dfyfe@nwifc.org
 - Shellfish Aquaculture Policy of the NWIFC web page: <http://nwifc.org/about-us/shellfish/shellfish-aquaculture-policy-of-the-northwest-indian-fisheries-commission/>

Federal and State Permitting

See Appendix 1, Overview of state and federal aquaculture requirements.

Land and water features

- Data sources for City Boundaries and UGA's, Drift cells, FEMA Flood Data, Washington State Levy Inventory, SMA Streams and River Points, SMA Streams and Rivers Arcs, SMA Lakes and Wetlands Polygons, Suggested Points, Suggested Shoreline Arcs, Suggested Shoreline Polygons Impervious Surfaces: <https://ecology.wa.gov/Research-Data/Data-resources/Geographic-Information-Systems-GIS>

- Washington Department of Natural Resources
 - Bush Act and Callow Act Aquatic Lands – maps by county:
http://www.dnr.wa.gov/BusinessPermits/Topics/ShellfishAquaticLeasing/Pages/aqr_bush_callow_maps.aspx
- Washington Department of Fish and Wildlife
 - Priority Habitats and Species data and maps. WDFW maintains GIS data that includes documented forage fish habitat, kelp and eelgrass beds, wetlands, and other indicators of priority nearshore habitat. The list is a non-regulatory tool intended to communicate WDFW’s priorities for conservation:
http://wdfw.wa.gov/conservation/phs/maps_data/
 - Species of Concern, Fish & Shellfish – includes maps of ESA Listed salmonids and background on Pinto ‘Northern’ Abalone, Olympia Mudminnow and other species: <http://wdfw.wa.gov/conservation/endangered/fish.html>
 - Marine Protected Areas within Puget Sound: <http://wdfw.wa.gov/fishing/mpa/>

Contaminated sediments

Data sources:

- Ecology’s Environmental Information Management database – environmental monitoring data <https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database>
- Spills and cleanup <https://ecology.wa.gov//Spills-Cleanup>

Ecological functions

- Washington Department of Fish and Wildlife
 - *White Paper – Protection of Marine Riparian Functions in Puget Sound, Washington*. June 15, 2009. Summary of the current science and management recommendations to inform protection of ecological functions of marine riparian areas. <http://wdfw.wa.gov/publications/pub.php?id=00693>

Eelgrass and kelp

- Washington Department of Agriculture, Noxious Weed Control Board
 - *Z. japonica* (Japanese eelgrass) <http://www.nwcb.wa.gov>
- Washington Department of Ecology
 - *Z. japonica* management water on commercial clam beds in Willapa Bay: <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Aquatic-pesticide-permits/Zostera-japonica-eelgrass-management>
- Washington Department of Natural Resources
 - Nearshore Habitat Eelgrass Monitoring, 360-902-1100: <https://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/nearshore-habitat-eelgrass-monitoring>
 - Puget Sound Eelgrass Monitoring Data Viewer: <http://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/puget-sound-eelgrass-monitoring-data-viewer>

Finfish

- Washington Department of Fish and Wildlife
 - Private Fish Stocking & Transport Permits: http://wdfw.wa.gov/licensing/fish_transport/

Shellfish

- Washington Department of Health, Scott Barbells, 360-236-3324, scott.barbells@doh.wa.gov
 - Shellfish Growing Area Program – commercial and recreational <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/GrowingAreas>
 - Shellfish site assessments <http://www.doh.wa.gov/DataandStatisticalReports/EnvironmentalHealth/SiteAssessments>
 - Shellfish Commercial Harvesting and Cultivating on Private Land (fact sheet) <http://www.doh.wa.gov/Portals/1/Documents/Pubs/332-109.pdf>
 - Information on sampling and areas cleared for export in response to China's ban on geoduck imports in 2014

<http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/CommercialShellfish/ChinaBan>.

- Washington Department of Fish and Wildlife
 - Shellfish Import and Transfer Permits, oyster drill restricted areas
http://wdfw.wa.gov/licensing/shellfish_import_transfer/
- Washington Department of Natural Resources
 - Shellfish and Aquatic Leasing:
<http://www.dnr.wa.gov/BusinessPermits/Topics/ShellfishAquaticLeasing/Pages/Home.aspx>
 - Wildstock geoduck fishery – The wildstock fishery is not considered “aquaculture” under the SMP Guidelines and does not need to be addressed in an SMP. For background information on this fishery useful for the inventory and characterization:
<http://www.dnr.wa.gov/programs-and-services/aquatics/shellfish/washingtons-wild-geoduck-fishery>
- Washington Sea Grant, Teri King, 206-543-6600, guatemal@u.washington.edu
 - Aquaculture Program
<https://wsg.washington.edu/community-outreach/aquaculture-outreach/>
 - Shellfish and Aquaculture research <https://wsg.washington.edu/research/alleviating-regulatory-impediments-to-native-shellfish-aquaculture/>

Stakeholder groups

The following organizations are active in aquaculture issues. The list does not represent all those with an interest in aquaculture.

- Coalition to Protect Puget Sound <http://coalitiontoprotectpugetsoundhabitat.org/>
- Northwest Indian Fisheries Commission <http://nwifc.org/>
- Pacific Coast Shellfish Growers Association <http://pcsga.org/>
- Pacific Shellfish Institute – Research and information services for the West Coast <http://pacshell.org/>
- Puget Sound Restoration Fund – Olympia oyster and Pinto abalone restoration <http://www.restorationfund.org/projects>
- Washington Fish Growers Association <http://wfga.net/>
 - Code of Conduct, Fall 2002 <http://wfga.net/conduct.php>
- Wild Fish Conservancy <http://wildfishconservancy.org/>
- Willapa – Grays Harbor Oysters Growers Association <http://wa.14thstory.com/willapa-grays-harbor-oyster-growers-association.html>

Appendix 4: Obsolete net pen recommendations (paraphrased)

Salmon net pens shall not be located closer than 12 statute miles from the mouth of any river containing significant anadromous fish runs.
Aquaculture uses and facilities shall be located at least 600 feet from any national wildlife refuge lands/or habitats of special significance for birds or mammals as identified in recognized reference documents such as the; provided that fish net-pens and projects involving substantial substrate modification shall be located 1,500 feet or more from such areas; provided lesser distances may be authorized by permit or other than a variance if it is demonstrated by the applicant that the resource will be protected....
Net pens or rafts shall not be located closer than 1 nautical mile to any other aquaculture facility that includes net pens or rafts, provided a lesser distance may be authorized.
Habitats of special significance should be afforded additional margin of protection. If present in depths of 75 feet or less, net pens should not be located over them, within 300 feet any direction of prevailing current, or 150 in any other direction.
Net-pens should not be located within 1500 feet of bird and mammalian habitats of special significance.
Predator control – 3 foot high fencing or netting for otters.
Net pen culture density should not exceed 1,000,000 lbs annual production per square nautical mile.
Minimum depth recommended beneath the net-pens ranges from 20 to 60 feet (Figure 1).
Annual production should not exceed 1 million pounds per square nautical mile. [6076 sq ft]
Storage containers limited to 3 feet in height from surface of raft or dock.
Experimental aquaculture shall not exceed 5 acres in size and 5 years in duration.
To preserve the integrity of any research data collected, aquaculture developments which would be likely to jeopardize an experimental aquaculture development shall not be allowed in same bay, harbor or cover (or within one mile of such a development if the water body is larger than 1 sq. mile).

Source: Ecology, 1994. *SMP Handbook, 1994 Edition, Chapter 7 – Aquaculture*, Washington Department of Ecology, Shorelands and Environmental Assistance Program. Obsolete.