# 15.0PRELIMINARY RECOMMENDATIONS FOR2DESIGNATIONS AND BUFFERS

# 3 5.1 SHORELINE ENVIRONMENT DESIGNATIONS

4 The Ecology guidelines (WAC 173-26-211) recommend a shoreline classification system with

5 six basic environment designations. According to the guidelines, "*This classification system* 

6 shall be based on the existing use pattern, the biological and physical character of the shoreline,

7 and the goals and aspirations of the community as expressed through comprehensive plans as

8 well as the criteria in this section. Each master program's classification system shall be

9 consistent with that described in WAC 173-26-211 (4) and (5) unless the alternative proposed

- 10 provides equal or better implementation of the act." The six environment designations described
- 11 in the WAC are as follows:

# 12 • High Intensity

- 13 Shoreline Residential
- Urban Conservancy
- 15 Aquatic
- Rural Conservancy
- 17 Natural

The purpose and criteria for each of the Ecology recommended designations are shown in Table5-1.

20 21

# Table 5-1. Ecology Recommended Shoreline Environment Designation Menu(WAC 173-26-211)

SED	Purpose	Main Criteria
High Intensity	Provide high intensity water-oriented commercial, transportation, and industrial uses while protecting ecological functions and restoring functions in degraded areas. Allow full build out of existing high intensity areas before expanding this designation to include new areas.	<ul> <li>Inside Urban Growth Areas and incorporated municipalities</li> <li>Currently support or planned to support and suitable for high intensity uses</li> </ul>
Shoreline Residential	Accommodate residential development.	<ul> <li>Inside Urban Growth Areas and incorporated municipalities</li> </ul>
		<ul> <li>Predominantly single-or multi- family development or planned and platted for development</li> </ul>
Urban	Protect and restore ecological functions in	Potential for ecological restoration
Conservancy	urban and developed settings.	Floodplains that should not be intensively developed
		<ul> <li>Areas that retain ecological function even though they are partially developed</li> </ul>
		Have potential for development that incorporates     ecological restoration

SED	Purpose	Main Criteria
Aquatic	Protect, restore, and manage unique characteristics and resources of the areas waterward of the ordinary high water mark.	<ul><li>Lands waterward of the ordinary high water mark</li><li>May include wetlands</li></ul>
Rural Conservancy	Protect, conserve, and restore ecological functions to provide ecological protection, sustain resource use, and provide recreational opportunities.	<ul> <li>Applies to areas outside the urban growth area or municipal city limits</li> <li>Supports resource-based uses such as agricultural, forestry, or recreation</li> <li>Supports human uses but subject to environmental limitations such as steep slopes, or flood prone areas</li> </ul>
Natural	Protect and restore shoreline areas that are free from human influence or include minimally degraded functions. Restrict uses to maintain ecosystem-wide functions.	<ul> <li>Supports ecosystems that have particular scientific or educational interest</li> <li>Ecologically intact and performing irreplaceable functions or processes</li> <li>Unable to support new development or uses without impact or risk to ecological functions</li> </ul>

1 These WAC designations differ from those that are currently in effect in Jefferson County (see

2 Maps 21, 22, and 23 for existing designations). To comply with the state's requirements, the

3 County's existing SED system must be updated to match WAC 173-26-211. The County has

4 some discretion to develop different designations or identify parallel environments where

5 appropriate. However, alternative designations must provide a similar level of shoreline

6 protection.

7 The proposed SED menu for Jefferson County outlined in this chapter is modeled on the WAC

8 but includes a few minor modifications that are appropriate for the local conditions. The High

9 Intensity (HI), Shoreline Residential, (SR) Aquatic (A), and Natural (N) designations proposed

10 for Jefferson County are consistent with the WAC in terms of the purpose and criteria for

11 designation. However, the Conservancy (C) designation is proposed in place of the WAC-

12 recommended Rural Conservancy and Urban Conservancy designations, since there is no

13 compelling reason to differentiate between rural and urban areas in Jefferson County where the

14 Conservancy designation is concerned. Also, a special designation--Priority Aquatic (PA)—is

15 proposed for high value in-water areas

16 The suggested menu provides a range of designations to suit different types of shorelines from

17 those that are or could be developed for high intensity uses, including water-dependent uses

18 (High Intensity), to those areas that are dedicated to residential development (Shoreline

19 Residential), to those that have relatively intact ecological functions and are able to

20 accommodate lower intensity uses (Conservancy), to those that are most sensitive to disturbance

21 and/or provide the highest levels of ecosystem function (Natural). Areas waterward of the

22 ordinary high water mark would be designated Aquatic and the most vital in-water salmon

23 streams/nearshore areas and highest value marine shellfish habitats would be designated Priority

24 Aquatic (Table 5-2).

SED	Purpose	Main Criteria
High Intensity	Ensure optimum use of shorelines that are either presently urbanized or planned for urbanization and provide economic development and recreational opportunities at a higher scale and intensity than can be	<ul> <li>Within designated urban growth areas (UGAs), rural areas of more intense development (RAMIDs), rural village centers (RVCs), resort complexes, rural crossroads (RCs), and resource based industrial zones (RBIZs)</li> <li>Heavy industrial areas outside of LIGAs. RAMIDS</li> </ul>
	achieved in more ecologically sensitive shoreline areas.	<ul> <li>RVCs or RCs</li> <li>Do not meet the criteria for the Natural, Public</li> </ul>
		Conservancy, Conservancy or Shoreline Residential environments
		<ul> <li>Suitable for high intensity uses other than residential uses (e.g., commercial and industrial use)</li> </ul>
Shoreline Residential	To accommodate residential development and appurtenant	<ul> <li>Shoreline areas inside UGAs, Rural Areas of More Intense Development or Master Planned Resorts</li> </ul>
	structures and provide appropriate public access and recreational uses	<ul> <li>Do not meet the criteria for the Natural, Public Conservancy, Conservancy or High Intensity</li> </ul>
	density residential developments	<ul><li>environments</li><li>Predominantly single-family or multifamily residential</li></ul>
	and services exist or are planned.	development or are planned and platted for residential development
Conservancy	Provide for sustained resource use, public access and public recreation while protecting ecological functions.	<ul> <li>Private and/or publicly owned lands (upland areas landward of OHWM) of high recreational value or with valuable historic or cultural resources or potential for</li> </ul>
	conserving existing ecological, historical and cultural resources.	public access
		centers, and rural crossroads
		Do not meet the designation criteria for the Natural or Public Conservancy environments
		<ul> <li>Currently supporting low-intensity resource-based uses</li> </ul>
		<ul> <li>Currently accommodating very low density residential uses</li> </ul>
		<ul> <li>Can support low-intensity water-oriented uses without significant adverse impacts to shoreline functions or processes</li> </ul>
Natural	To protect those shoreline areas that are relatively free of human influence and/ or that include intact	<ul> <li>Ecologically intact and performing an important or irreplaceable function or ecosystem-wide process that would be damaged by human activity;</li> </ul>
	or minimally degraded shoreline functions and processes.	<ul> <li>Represents a type of ecosystem or geologic feature that is of particular scientific and/or educational interest;</li> </ul>
		<ul> <li>Unable to support new development or uses without significant adverse impacts to ecological functions or risks to human safety;</li> </ul>
		<ul> <li>Potential to return to near natural conditions with minimal or no restoration activity;</li> </ul>
		<ul> <li>Possesses serious development limitations due to the presence of environmental hazards.</li> </ul>
Aquatic	To protect, restore, and manage	Lands waterward of the ordinary high water mark
	of the areas waterward of the ordinary high water mark.	Iviay include wetlands
Priority Aquatic	To protect to the highest degree possible and, where feasible, restore	<ul> <li>Lands waterward of the ordinary high water mark</li> <li>The most vital salmon streams and nearshore areas</li> </ul>

Table 5-2.	Jefferson County	Recommended	Shoreline	Environment	Designation	Menu
------------	------------------	-------------	-----------	-------------	-------------	------

SED	Purpose	Main Criteria
	waters and their underlying bedlands deemed vital for salmon and shellfish.	<ul> <li>The highest value marine shellfish habitats</li> <li>Documented Endangered Species Act-listed salmonid streams and marine habitats (summer chum, chinook, and steelhead)</li> <li>Estuaries that support Endangered Species Act-listed salmonid rearing</li> <li>Other freshwater shorelines that provide habitat for salmonid species (coho, fall chum, pink, and cutthroat) and are relatively undeveloped</li> </ul>

- 1 Using the proposed designation menu as a guide, preliminary SED recommendations were
- 2 developed for each shoreline reach (Tables 5-3 to 5-5 and Maps 29-31 in Appendix C). The
- 3 initial recommendations were determined based on the inventory information that was available
- 4 and appropriate, summarized in the preceding chapters. Some of this data was only available for
- 5 eastern Jefferson County. Specific consideration was given to the presence of the following key
- 6 ecological and land use attributes:
- Degree of ecological function (function score as identified by Diefenderfer et al., 2006)
- Degree of stress (stressor score as identified by Diefenderfer et al., 2006)
- Salmonid Nodal Corridor/ Refugia (as identified by May and Peterson, 2003)
- Nearshore Salmonid Refugia (as identified by May and Peterson, 2003)
- 11 Salmonid Use
- Salt Marsh / Lagoon / Intertidal Wetland (as identified by Todd et al., 2006)
- 13 Terrestrial Priority Species Use
- 14 Erosive/ Hazardous Slope/CMZ
- Zoning (and assessor's information on parcel density and vacant parcels)
- 16 Public Land
- 17 Public Tidelands
- 18 Commercial Shellfish Status

19 The initial results of this analysis are presented in Table 5-3 to 5-5 (Readers are encouraged to 20 review the SED maps in Appendix C for a more precise depiction of the proposed SEDs for each 21 reach). These tables show the initial designations that were developed for the marine and river 22 shores based on the inventory and the revised SED recommendations that were developed with 23 extensive input from the STAC and SPAC after detailed review of oblique aerial photography for 24 each section of the marine shoreline. The oblique photos allowed a more precise assessment of 25 feeder bluffs, riparian conditions, extent of shoreline modification, land use intensity, and other 26 factors that are essential for developing SEDs recommendations. As a result the revised 27 recommendations represent the best available information regarding SEDs for Jefferson County.

28 In some cases, multiple designations are recommended for a given shoreline reach, and the

29 approximate 'break' in the designation boundary is provided. In general reaches or portions of

30 reaches were designated Natural if they had minimal shoreline modification (stairs, bulkheads,

- 31 etc) or other high quality/pristine habitat characteristics (very limited development), or were
- 32 important feeder bluffs or otherwise unsuitable for development (due to geological conditions,
- 33 presence of environmentally sensitive areas, or other factors). Reaches or portions of reaches
- 34 were designated Shoreline Residential if they were platted and/or developed for relatively high-35 density residential development and showed signs of more intense modification/use. Shorelines
- that are currently devoted to higher intensity uses and/or located in areas planned for higher
- 37 intensity development including marinas and commercial developments received a High
- 38 Intensity designation. All other shorelands received a Conservancy designation.

- 1 An Aquatic or Priority Aquatic designation is recommended for all areas waterward of ordinary
- 2 high water mark--essentially creating a parallel designation for all shorelines (one for the
- 3 shoreland or upland area and one for the water). The Priority Aquatic designation provides a
- 4 higher level of protection to in-water areas than the Aquatic designation, so priority Aquatic
- 5 areas are well protected even when paired with designations that allow more intensive uses in the
- 6 shoreland area (e.g., Shoreline Residential). Priority Aquatic areas include the deltas of all the
- 7 major rivers draining eastern slope of Jefferson County; important bays and estuaries such as
- 8 Quilcene Bay, Discovery Bay, Tarboo Bay, Thorndyke Bay, Squamish estuary, and Ludlow
- 9 estuary; and portions of the Toandos Peninsula, Kilisut Bay and Oak Harbor (see SED maps for
- 10 more information).
- 11 For streams or lakes that are potential shorelines of the state, but currently not designated as such
- 12 per WAC 173-18 or 173-22 (see section 1.3.2.1), a default Conservancy designation is
- 13 recommended until additional information is gathered. The same applies to associated wetlands
- 14 that are not otherwise formally designated.
- 15 Shoreline environment designations are one determinant of how individual shoreline reaches are
- 16 to be used, developed and managed/protected. For example, the types of uses allowed along a
- 17 given shoreline reach will generally vary depending on the designation. The level of allowed
- 18 development density would also vary by SED. In many other respects, shoreline reaches will be
- 19 managed and regulated equally regardless of designation differences. Initial recommendations
- 20 are to require the same shoreline buffer (from OHWM) for each type of shoreline (marine, river,
- 21 or lake) regardless of the SED. Vegetation management, water quality, and other environmental
- 22 protection standards would also be generally consistent regardless of SED. Specific
- 23 management recommendations are available for public review in the draft SMP which is
- 24 available at the Jefferson County Community Development Department.

# 25 5.2 PRELIMINARY BUFFER RECOMMENDATIONS

26 The recommended shoreline buffer<sup>1</sup> for lakes is 100 feet. For river and marine shores, the

27 recommended buffer is 150 feet, consistent with the existing County critical areas regulations in

- 28 JCC 18.22.270. One hundred and fifty feet is also the buffer standard adopted by Whatcom
- 29 County for marine shorelines. King County currently applies a 165-foot buffer to Type S
- 30 shorelines outside of urban growth areas via the King County critical areas ordinance. Kitsap
- 31 County is proposing to adopt a 150 foot marine shore buffer in certain shoreline environment

32 designations as a result of a decision by the Central Puget Sound Growth Management Hearings

33 Board (CPSGMHB).<sup>2</sup>

<sup>&</sup>lt;sup>1</sup> The terms buffer refers to the horizontal distance that structures would have to be set back, landward, from the ordinary high water mark. The buffer area would be required to be maintained in a vegetated, undisturbed and undeveloped condition to protect shoreline functions and processes. Policies and regulations could be developed to require increases or allow reductions in buffer width as appropriate to reflect site-specific conditions.

<sup>&</sup>lt;sup>2</sup> Hood Canal, et al., v. Kitsap County, CPSGMHB Consolidated Case No. 06-3-0012c. See also http://www.kitsapgov.com/dcd/lu\_env/cao/remand/planning\_commission\_status\_mem\_122806.pdf

- 1 Levings and Jamieson (2001) cite findings from the Canadian Ministry of Forestry in British
- 2 Columbia recommending buffers of 300 to 450 feet for marine shores depending on the type of
- 3 shore, wind conditions, and other factors. Depending on the specific nearshore resources being
- 4 protected and the specific functions being provided by the buffer, recommended widths may5 differ.
- 6 The effectiveness of riparian buffers for protecting water quality depends on a number of factors 7 including soil type/stability, vegetation type, slope, annual rainfall, type and amount of pollution, 8 surrounding land uses, and buffer width. Soil stability and sediment control are directly related 9 to the amount of impervious surface. In areas where riparian vegetation has been removed and 10 soils have been compacted, soils are less capable of intercepting and absorbing rainfall (May, 11 2003). Water that is not absorbed/intercepted by vegetation runs off the surface leading to 12 erosion, siltation, burial of aquatic environs, and introduction of contaminants into water and can increase potential for landslides. Pollutants such as excess nutrients, metals, and organic 13 14 chemicals are commonly found in stormwater and agricultural runoff, usually in particulate form. 15 Sediment control therefore is essential for removing a large percentage of the pollutant load 16 (May, 2000). In general, a 50-foot buffer is estimated to be approximately 60 percent effective at 17 removing sediments, while an 82- to 300-foot buffer would remove approximately 80 percent of 18 sediment load (Brennan and Culverwell, 2004; Pentec 2001). Although sediment carried into
- 19 nearshore marine environments will seldom be of a magnitude to significantly compromise water
- 20 clarity, the minimum recommended buffer width for sediment control and pollutant removal is
- 21 98 feet (30 meters) (May, 2003).
- 22 According to the literature, buffer widths as small as 27 feet could reduce nitrogen by as much as
- 23 60 percent, while widths up to 200 feet would be required to reduce nitrogen by 80 percent
- 24 (Desbonnet et al., 1994, in Pentec, 2001). Minimum buffer recommendations for controlling
- agricultural runoff are 79 feet for 20 percent slopes with slight erosion, and 160 feet for 30
- 26 percent slopes with severe erosion (Brennan and Culverwell, 2004). Control of fecal coliform
- 27 inputs from agriculture or septic systems to acceptable levels for primary contact recreational use
- could be achieved by a 115 feet buffer (Young et al., 1980, in Pentec, 2001).
- 29 For wildlife, the principal functions of riparian buffers are to provide habitat and travel corridors,
- 30 microclimate regulation, organic input, and to ameliorate the impacts of human disturbance such
- 31 as light and noise (Parametrix et al., 2005). Bald eagles, kingfishers, and other birds use logs on
- 32 beaches, tideflats, and estuarine channels as perches (which provide visibility for foraging,
- resting areas), and to reduce flight times (energy conservation) between foraging areas and
- nesting sites. Herons and egrets will use drifted trees that are partially out of the water, as well
- as floating logs and log rafts for foraging and resting. Cormorants, pelicans, small shorebirds,
- and some waterfowl also require perches and platforms for rest between periods of foraging to
- spread their wings to dry their feathers and for preening themselves. As rotting trees on land
   near the water become limiting, purple martins and other cavity-nesting birds will use rotting
- 39 snags on beaches for nesting. Gulls use log beaches and estuarine meadows for breeding. Logs
- 40 function to visually isolate adjacent nests, provide thermoregulatory benefits for egg
- 41 development, and cover for newly hatched chicks. Logs enable gulls to spend less time
- 42 protecting the nest and more time foraging, resulting in increased survival of chicks. LWD is
- 43 suspected to serve similar functions for other ground nesting wildlife. In addition, LWD and

- 1 beach wrack provide habitat structure for species that are prey for fish and wildlife (Brennan and
- 2 Culverwell, 2004).
- 3 For Washington State, the average width reported to retain riparian function for wildlife habitat
- 4 is 288 feet (Knutson and Naef, 1997). No requirements for riparian corridor connectivity have
- 5 been established in scientific literature; however Booth et al. (2002, in King County, 2004)
- 6 recommend riparian buffer zones that minimize road and utility crossings as well as overall
- 7 clearing.
- 8 Microclimatic influences on air that passes through riparian vegetation include humidity,
- 9 temperature, and wind speed. This in turn affects plant growth, therefore influencing ecosystem
- 10 processes such as decomposition, nutrient cycling, plant succession, and plant productivity.
- 11 (Snohomish County, 2005). The minimum recommended buffer for microclimate protection is
- 12 328 feet (May, 2003).
- 13 Recent studies have shown that riparian vegetation on open marine shorelines may play an
- 14 important role in producing terrestrial insect prey for juvenile salmon. Eelgrass beds are known
- 15 to provide habitat for numerous fish and invertebrates, abundant fish prey production, as well as
- 16 spawning habitat for herring. Buffer recommendations have not been made for protection of fish
- 17 prey production function.
- 18 Shade provided by riparian vegetation along marine shorelines is not likely to influence marine
- 19 water temperatures due to mixing and tidal fluctuations, but may be an important factor in
- 20 moderating water temperature in pocket estuaries. Solar radiation is also an important factor
- 21 determining distribution, abundance, and species composition of upper intertidal organisms
- 22 (Brennan and Culverwell, 2004). Moisture and direct solar radiation also influence egg viability
- 23 of intertidal-spawning forage fish such as surf smelt and sand lance (Penttila, 2001). Buffer
- 24 recommendations range from 98 to 262 feet for natural temperature regulation and shading, or
- 25 providing equivalent shading as a mature forest (May, 2003).
- 26 Large woody debris provides a multitude of functions in aquatic ecosystems including habitat
- 27 structure. In the marine riparian zone, vegetation and large woody debris trap and stabilize
- 28 sediments in salt marshes and on beaches, creating back beaches, berms, and spits. Beach logs
- 29 retain moisture that becomes important to the establishment and survival of dune plants, which
- 30 further stabilize sediments, provide wildlife habitat, and contribute nutrients to the system. In
- 31 the lower intertidal and subtidal areas, LWD may become immobilized and become colonized by
- 32 sessile invertebrates, algae, and mobile invertebrates for feeding opportunities, refuge, and
- 33 spawning substrate, thereby increasing habitat complexity and attracting other species in search
- 34 of prey, refuge, or spawning substrate. In riverine environments, more than half of all large
- 35 woody debris is recruited from within 15 feet of streams. About 90 percent of all large woody 36 debris somes from trace growing within shout 50 feet of streams (Horror, 2005). Appropriate
- debris comes from trees growing within about 50 feet of streams (Herrera, 2005). Appropriate
   widths for natural levels of recruitment and retention have been reported as one Site Potential
- 37 Widths for natural levels of recruitment and retention have been reported as one Site Potentia 38 Tree Height (SPTH) (May, 2003). The minimum buffer width recommended for LWD
- recruitment is 1 SPTH, or approximately 165 meters (May, 2003).

- 1 Because most buffer recommendations have been developed for riverine systems, marine buffer
- 2 requirements may need to be adjusted to account for the effects of wind, salt spray, desiccation,
- 3 and general microclimatic effects (Brennan and Culverwell, 2004).

1

# This page intentionally left blank

		Factors Used to Recommend Designations ("										Proposed E (These designations are	nvironment Designation superseded by SEDs shown on the official SED map)
Reach	Area	High Function x=YES	Low Stress x=YES	Salmonid Nodal Corridor/ Refugia x=YES	Nearshore Salmonid Refugia	Salt Marsh / Lagoon / Intertidal Wetland	Erosive/ Hazardous Slope	Zoning	Public Land	Public Tidelands	Commercial Shellfish Status	Original SED Recommendation ( May 2007)	Revised STAC/SPAC Recommendation Priority Aquatic
A	Fulton Creek and Associated Near Shore			x			x	RR. PPR	x	x	Α	Conservancy	Conservancy, Natural at #
B	Fulton Creek and Associated Near Shore						v	RR		×	Δ	Conservancy	
							^			^			Conservancy Natural at
С	Fulton Creek and Associated Near Shore			X	р			RR, AL			A	Conservancy	McDaniel Cove #
D	Duckabush River and Black Point			x	р	S (small)	р	RR, AL		x	А	Conservancy (numerous shoreline modifications)	Natural at McDaniel Cove, Conservancy and # SR at north end
E	Duckabush River and Black Point	x	x	x	x	S	x	RR	x	x	A	Natural at mouth of Duckabush River and on feeder bluff on south side of Quatsop Point, Conservancy (Impacts from HWY 101)	Natural at Duckabush delta #
F	Duckabush River and Black Point					S (small)	x	RR		x	A, U	Conservancy	Conservancy and some SR
G	Duckabush River and Black Point							RR			U	High Intensity (dense development)	SR
Н	Duckabush River and Black Point						x	RR	x	x	Р	High Intensity (Marina, modified shore)	ST and HI on inner Pleasant Harbor bay
Ι	Dosewallips River and Brinnon Shoreline					S (small)	р	RR	р		U, R, P	Conservancy	SR
J	Dosewallips River and Brinnon Shoreline			x	р	S	x	RR, PPR, AL, RVC, Olympic NF	x	x	A, R	Natural at mouth of Dosewallips and Jackson Creek, Conservancy, NA at Seal Rock CG, Shoreline Residential at Brinnon, High Intensity at RVC	Natural at mouth of Dosewallips and Jackson Creek, Conservancy, SR at Brinnon
К	Jackson Shoreline	x				S, L		RR, CC	р	х	А	Conservancy	Natural and Conservancy #
L	Jackson Shoreline			x		S (small), L (small)	х	RR, PPR, National WR	x	x	A, U	Natural (Pulali Pt), Conservancy	Conservancy
Μ	Quilcene Bay		x			L (small)	x	RR, PPR, CF	x	x	А	Natural (undeveloped, high bluff)	Natural #
Ν	Quilcene Bay	х	х	х			x	RR, CF, RF	х	х	A, C	Natural	Natural, HI at marina #
0	Quilcene Bay	x		x		S, L, IW	x	RR, AP, AL, PPR (small)	x	x	A, U, C	Natural	SR at South end; HI at # marina; Natural at Big Quilcene delta; Conservancy at Little Quilcene mouth; SR at East Quilcene
Р	Quilcene Bay	x	x		р	IW	x	RR		х	A, U	Natural	SR at north end; #

# Table 5-3. Preliminary SED Recommendations by Shoreline Reach – Marine Shores

NOTES:

RR=rural residential

AL=Local Agriculture

x=YES (extensive coverage) S=salt marsh

p=partial coverage L=lagoon

> CF=Commercial Forest AP=Commercial Agriculture

NA = Not Applicable (no county jurisdiction) IW=Intertidal Wetland

PPR=Parks/ Preserves/ Recreation Areas RF=Rural Forest

R=restricted

C=conditional

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

A=approvedU=unclassifiedP=prohibitedSR = ShorelineHI = High Intensity# = SED applies to at<br/>east part of reach

			Factors Used to Recommend Designations (										Proposed Environment Designation (These designations are superseded by SEDs shown on the official SED map)		
Reach	Area	High Function	Low Stress	Salmonid Nodal Corridor/ Refugia	Nearshore Salmonid Refugia	Salt Marsh / Lagoon / Intertidal Wetland	Erosive/ Hazardous Slope	Zoning	Public Land	Public Tidelands	Commercial Shellfish Status	Original SED Recommendation ( May 2007)	Revised STAC/SPAC Recommendation	Priority Aquatic	
													Conservancy; Natural at Fisherman's Pt.		
Q	Dabob Bay	x	x	x	р	S, L, IW	x	RR, PPR, CF, AL (small)	x	x	A	Natural	Natural at Red Bluff; Conservancy; Natural mostly from Broad Spit to north end of reach	#	
R	Dabob Bay			x		S, IW	x	RR, CF	x	x	A	Natural	Conservancy, except Natural at spit on west side of Tarboo Bay	#	
s	Dabob Bay			x	р	S, L, IW	x	RR, CF, AL, Military Res., RF (small)	x	x	А	Natural, NA on military land	Mostly Natural, but Conservancy north of camp Harmony	#	
т	Southern Toandos Peninsula, Thorndyke Bay, and Squamish Harbor	x	x	x		S (small), L (small)	x	RR		x	A, P	Natural	Natural except for head of Fisherman's Harbor	· #	
U	Southern Toandos Peninsula, Thorndyke Bay, and Squamish Harbor		x			S (small), L (small)	x	RR		#	А	Natural (undeveloped, high bluff)	Natural	#	
v	Southern Toandos Peninsula, Thorndyke Bay, and Squamish Harbor	x	x	x	p	S, L	x	RR, Military Res., CF, RF, IF	x	#	A, P	Natural	Natural except Conservancy just north and south of Thorndyke Bay; SR at Bridgehaven; Natural on inner shore near South Point Road; SR on south side of Squamish estuary	#	
w	Southern Toandos Peninsula, Thorndyke Bay, and Squamish Harbor	x		x	x	S, L	x	RR	p	x	A	Possible parallel designation with Natural south of Shine Road and Shoreline Residential north of Shine Road	Natural at Squamish estuary, otherwise SR	#	
#	Hood Canal Bridge to Tala Point	x	x			S, L	x	RR	x	x	A	Conservancy at Wolfe SP/Natural	Natural at Termination Point and Bywater Bay, some Conservancy just south of Bywater Bay	#	
Y	Hood Canal Bridge to Tala Point					S, L (small)	р	RR		x	A	Conservancy	Conservancy and Natural	#	
Z	Hood Canal Bridge to Tala Point	x	х				x	RR		x	A, U	Natural (landslides, undeveloped)	Natural		

 x=YES (extensive coverage)
 p=partial coverage

 S=salt marsh
 L=lagoon

 RR=rural residential
 CF=Commercial Forest

 AL=Local Agriculture
 AP=Commercial Agriculture

 A=approved
 U=unclassified
 P=prohibited

 SR = Shoreline
 HI = High Intensity
 # = SED applies to at east part of reach

page 5-12

IW=Intertidal Wetland

PPR=Parks/ Preserves/ Recreation Areas RF=Rural Forest CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

C=conditional R=restricted

			Factors Used to Recommend Designations (										Proposed Environment Designation (These designations are superseded by SEDs shown on the official SED map)		
Reach	Area	High Function	Low Stress	Salmonid Nodal Corridor/ Refugia	Nearshore Salmonid Refugia	Salt Marsh / Lagoon / Intertidal Wetland	Erosive/ Hazardous Slope	Zoning	Public Land	Public Tidelands	Commercial Shellfish Status	Original SED Recommendation ( May 2007)	Revised STAC/SPAC Recommendation	Priority Aquatic	
AA	Hood Canal Bridge to Tala Point	x	x			S, L	x	RR	х	x	A	Natural (feeder bluff, small lots but many vacant parcels)	Natural at Pt Hannon, Conservancy at White Rock and Tala Pt, SR		
вв	Port Ludlow				р	S, L (small)	x	RR, MPR (Single family)			P, U, A	Shoreline Residential	SR	#	
сс	Port Ludlow			x		L	x	MPR (Single family, Multi family, Village Commercial Center, Resort Complex/Comm unity Facilities)		р	Ρ	Shoreline Residential, Conservancy at Ludlow Creek estuary	SR, Conservancy at Ludlow estuary, HI at Marina		
DD	Port Ludlow	x				L (small)	x	RR, MPR (Single family, Resort Complex/Comm unity Facilities)		x	P, U	Shoreline Residential, High Intensity	South end of reach is HI, SR at north end of reach		
EE	Mats Mats Bay			x		S (small)		RR		x	U, A, C	Natural (undeveloped)	Mostly SR, with Conservancy at Basalt Pt, HI at marina		
FF	Oak Bay					S, L (small)		RR		х	А	Shoreline Residential	SR		
GG	Oak Bay							RR		х	А	Shoreline Residential	SR		
НН	Oak Bay			х			х	RR		х	А	Shoreline Residential	SR		
11	Oak Bay					S, L		RR, PPR	x	х	A, U	Natural (Portage, undeveloped)	Conservancy	#	
JJ	South Indian Island and Marrowstone Island					S, L		Military Res.	other fed	р	A, U	NA	NA		
КК	South Indian Island and Marrowstone Island	x				S, L	x	RR, Military Res.	other fed	x	A, U	NA, Natural on County lands on Marrowstone	Natural at Kinney Pt and Scow Bay portage, otherwise SR	#	
LL	South Indian Island and Marrowstone Island					S (small), L (small)	x	RR, AL, PPR	x	х	U	Natural, Conservancy on Fort Flagler	Conservancy and Natural at Fort Flagler and Lilip Pt		
ММ	South Indian Island and Marrowstone Island	x				S, L	x	PPR	х	х	U	Conservancy (Fort Flagler)	Natural		
NN	South Indian Island and Marrowstone Island					S	x	PPR	x	х	U	Natural, Conservancy on Fort Flagler	Natural except at boat launch		
00	South Indian Island and Marrowstone Island					S	x	RR, PPR	x	х	A, U, P (SMALL)	Natural, Conservancy on Fort Flagler	Natural at Walan Pt, Conservancy		
PP	South Indian Island and Marrowstone Island	x				S, L	x	RR	x	x	A, C	Natural (undeveloped)	Conservancy and SR		
QQ	South Indian Island and Marrowstone Island					S (small)	x	RR, CC	р	x	A, C	Natural (undeveloped)	SR, HI at boat launch	#	
RR	South Indian Island and Marrowstone Island	х					x	RR		х	А	Natural (undeveloped)	SR	#	
SS	South Indian Island and Marrowstone Island	x				S, L	р	RR, Military Res.	other fed	х	Α	Natural (undeveloped)	Natural	#	
TT	South Indian Island (Navy)	x	х			S, L	р	Military Res.	other fed	х	A	NA	NA		

NOTES: x=YES (extensive coverage) S=salt marsh p=partial coverage L=lagoon RR=rural residential AL=Local Agriculture *A*=approved SR = Shoreline *U*=unclassified HI = High Intensity *P*=prohibited # = SED applies to at Residential east part of reach

CF=Commercial Forest AP=Commercial Agriculture C=conditional

NA = Not Applicable (no county jurisdiction) IW=Intertidal Wetland

PPR=Parks/ Preserves/ Recreation Areas **RF=Rural Forest** 

R=restricted

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

													Proposed Environment Designation		
			Factors Used to Recommend Designations									(These designations are	superseded by SEDs sho SED map)	wn on the official	
Reach	Area	High Function	Low Stress	Salmonid Nodal Corridor/ Refugia	Nearshore Salmonid Refugia	Salt Marsh / Lagoon / Intertidal Wetland	Erosive/ Hazardous Slope	Zoning	Public Land	Public Tidelands	Commercial Shellfish Status	Original SED Recommendation ( May 2007)	Revised STAC/SPAC Recommendation	Priority Aquatic	
UU	Indian Island (Navy)	х	х			S	x	Military Res.	other fed	x	A, P, U	NA	NA		
vv	Indian Island (Rat Island)	x	x			s	x	Un zoned island	other fed	x	U, P	NA (or Natural if county jurisdiction)	Natural		
WW	Indian Island (Navy)	x	х			S	р	Military Res.	other fed		P, U	NA	NA		
##	Indian Island (Navy)	х				S (small)	x	Military Res.	other fed	х	<i>U,</i> A	NA	NA		
YY	Port Townsend Bay					S, L (small)		RR		х	A, P, U	High Intensity (marina)	HI, SR, Conservancy		
ZZ	Port Townsend Bay				р	S	x	RR, RVC	р	х	U, A, P (SMALL)	Shoreline Residential (low bank residential)	HI, SR, Conservancy	#	
AAA	Port Townsend Bay			x	х	S, L (small)	x	RR	х		U	Shoreline Residential or High Intensity, Conservancy at estuary	Natural, Conservancy at Chimacum estuary	#	
BBB	Port Townsend Bay	х	х		р	S, L	x	RR, PPR	х	х	U	Conservancy	Natural	#	
ссс	Port Townsend Bay (portion outside of City)					L	x	RR, PPR, HI, PT UGA	х	x	U, A, P	High Intensity	Natural near State Park, HI		
DDD	City of PT shoreline	х	х					PT UGA	х	х	U, A	NA	NA		
EEE	City of PT shoreline	x	x				x	RR, PT UGA	x	x	U, A, P	NA and Natural in County jurisdiction (feeder bluff, unstable slopes)	Natural outside City		
FFF	Strait of Juan de Fuca and Discovery Bay	x				L	x	RR, AL		x	<i>U</i> , A	Conservancy	Natural, SR and HU at Cape George		
GGG	Strait of Juan de Fuca and Discovery Bay	x				S, L	x	RR			A	Conservancy	SR at Beckett Pt, Natural south of Pt.		
ннн	Strait of Juan de Fuca and Discovery Bay	x				S, L	x	RR			A	Conservancy	Natural, SR at Adelma Beach, Conservancy south of Adelma Beach	#	
111	Strait of Juan de Fuca and Discovery Bay	x			х	S, L	x	RR, NC		x	A, U	Conservancy, Natural at Salmon /Snow estuary mouth	Natural, SR and Conservancy at creek mouth	#	
JJJ	Strait of Juan de Fuca and Discovery Bay	x					x	RR	р	x	A, U (SMALL)	Conservancy	SR, HI, Natural, and Conservancy north of Kalset Pt	#	
ККК	Strait of Juan de Fuca and Discovery Bay	x	x			S	x	RR			A	Conservancy	Natural, some Conservancy at north end	#	
LLL	Strait of Juan de Fuca and Discovery Bay	x				S, L	x	RR		x	A	Conservancy	Natural, Conservancy at Contractor's Pt and north of Pt to County line	#	
IslandX	Sitting in Strait of Juan de Fuca					L	x	National WR	х	х	U, A	NA	NA		
IslandXI	Sitting in Strait of Juan de Fuca					L	x	National WR	х	х	U, A	NA	NA		

x=YES (extensive coverage) S=salt marsh p=partial coverage L=lagoon RR=rural residential AL=Local Agriculture *A*=approved SR = Shoreline *U*=unclassified HI = High Intensity *P*=prohibited # = SED applies to at Residential east part of reach

page 5-14

CF=Commercial Forest AP=Commercial Agriculture

IW=Intertidal Wetland

PPR=Parks/ Preserves/ Recreation Areas RF=Rural Forest

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

R=restricted C=conditional

This page intentionally left blank

NOTES: x=YES (extensive coverage) S=salt marsh		p=partial coverage L=lagoon	NA = N IW=Inte	ot Applicable (no county jurisdiction) ertidal Wetland		
RR=rural residential AL=Local Agriculture		CF=Commercial Forest AP=Commercial Agriculture	PPR=Parks/ Preserves/ Recreation Areas RF=Rural Forest		CC=Crossroad MPR=Master Plan Resort	HI=Heavy Industrial RVC=Rural Village Center
<i>A</i> =approved SR = Shoreline Residential	<i>U</i> =unclassified HI = High Intensity	<i>P</i> =prohibited # = SED applies to at east part of reach	C=conditional	<i>R</i> =restricted		

			Factors Used to Recommend Designations										
Reach	Area	Salmonid Use	Salmonid Nodal Corridor/ Refugia	Terrestrial Priority Species Use	Erosive/ Hazardous Slope or CMZ	Zoning	Public Land	Recommended SED					
Big Quilcene River1	Big Quilcene River	m,s,r	х	х	х	RR, AL, RF, RVC	х	Natural, Conservancy					
Big Quilcene River2	Big Quilcene River	m,s	х	x	х	RR, CF, Olympic NF	х	Conservancy					
Bogachiel River	Bogachiel River	m,s,r		close proximity	e/l h	CF, RR, RF	х	Conservancy					
Cedar Creek	Cedar Creek	m,s,r				RR, CF	х	Conservancy					
Chimacum Creek1	Chimacum Creek	m,s,r	х	x		RR	x (inholding forest)	Natural					
Chimacum Creek2	Chimacum Creek	m, s	х			AP, RR, PPR	х	Shoreline Residential					
Chimacum Creek3	Chimacum Creek	m, s	х			RR, PPR, CC	х	Shoreline Residential					
Chimacum Creek4	Chimacum Creek	m,s,r	х	x		AP, RR, PPR (small)	x (partial)	Conservancy					
Christmas Creek	Clearwater River	s,r			e/l h	CF, RF	х	Conservancy					
Clearwater River1	Clearwater River	m,s,r		x	e/l h	RR, RF, AL, CF	х	Conservancy					
Clearwater River2	Clearwater River	m,s				CF, RF		Conservancy					
Clearwater River3	Clearwater River	m,s		x		CF,RF		Conservancy					
Clearwater River4	Clearwater River	m,s				CF,RF,IF	х	Conservancy					
Clearwater River5	Clearwater River	m,s		х	e/l h	CF,IF,RR	х	Conservancy					
Clearwater River6	Clearwater River	m,s				CF	х	Conservancy					
Clearwater River7	Clearwater River	m,s		x	e/l h	CF	х	Conservancy					
Clearwater River8	Clearwater River	m,s_		Merlin in close proximity	e/l h	CF	x	Conservancy					
Dosewallips River1	Dosewallips River	m,s,r	x	x	x	RR, CF, RF, RVC, PPR, AL	x	Natural					

# Table 5-4. Preliminary SED Recommendations by Shoreline Reach – Rivers<sup>3</sup>

<sup>3</sup> Conservancy is the recommended default designation for all undesignated shorelines.

### NOTES:

x=YES m=presence/migration **RR**=rural residential AL=Local Agriculture E/lh=erosion/landslide hazard area

s=spawning r=rearing **CF=Commercial Forest** AP=Commercial Agriculture cmz=channel migration zone (FOR EAST COUNTY RIVERS ONLY X=Yes)

PPR=Parks/ Preserves/ Recreation Areas **RF=Rural Forest** 

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

Reach	Area	Salmonid Use	Salmonid Nodal Corridor/ Refugia	Terrestrial Priority Species Use	Erosive/ Hazardous Slope or CMZ	Zoning	Public Land	Recommended SED
Duckabush River1	Duckabush River	m,s,r	x	x	x	RR, RF, CF, Olympic NF,	х	Natural, Shoreline Residential
Fulton Creek1	Fulton Creek	m,s,r	х		x	CF, RR		Natural
Fulton Creek2	Fulton Creek	m,s	x		x	CF		Natural
Goodman Creek1	Goodman Creek	m,s				CF		Conservancy
Goodman Creek2	Goodman Creek	m,s			e/l h	CF, RR	х	Conservancy
Goodman Creek3	Goodman Creek	m			e/l h	CF, RR	х	Conservancy
Hoh River South Fork1	Hoh River	m,s,r		х	e/l h	CF, IF, Unzoned	х	Conservancy
Hoh River1	Hoh River	m,s,r		x	cmz	CF, AL, RR, RF, Unzoned	х	Conservancy
Hoh River2	Hoh River	m,s,r		x	e/l h	RR, AL, CF, RF, Unzoned	х	Conservancy
Hoh River3	Hoh River	m,s		x	cmz	RR, CF, RF, Oly NF, Unzoned	х	Conservancy
Hoh River4	Hoh River	m,s		x	cmz	RR, AL, CF, Unzoned		Conservancy
Hoh River5	Hoh River	m,s,r		x	cmz	RR, AL, CF, Unzoned	x	Conservancy
Hurst Creek1	Clearwater River	m,s,r		x		CF, RF	х	Conservancy
Kalaloch Creek1	Kalaloch Creek	m			e/l h	CF, RR, IF, Oly NP	х	Conservancy
Kalaloch Creek2	Kalaloch Creek	m			e/l h (partial)	CF		Conservancy
Little Quilcene River1	Little Quilcene River	m, s	x		x	RR, RF, CF, RVC, AL		Natural, Conservancy
Little Quilcene River2	Little Quilcene River	m, s			х	CF, RF, RR	х	Conservancy
Maple Creek	Hoh River	m		х	e/l h	CF, RR, Unzoned	х	Conservancy
Matheny Creek1	Matheny Creek	m,s		х	e/l h	CF	х	Conservancy

x=YES

m=presence/migration RR=rural residential AL=Local Agriculture E/lh=erosion/landslide hazard area

s=spawning CF=Commercial Forest AP=Commercial Agriculture

r=rearing PPR=Parks/ Preserves/ Recreation Areas **RF=Rural Forest** cmz=channel migration zone (FOR EAST COUNTY RIVERS ONLY X=Yes)

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

page 5-18

Reach	Area	Salmonid Use	Salmonid Nodal Corridor/ Refugia	Terrestrial Priority Species Use	Erosive/ Hazardous Slope or CMZ	Zoning	Public Land	Recommended SED
Miller Creek	Clearwater River	s,r			e/l h	CF, RF	х	Conservancy
Miller Creek East Fork1	Clearwater River	s,r				CF, RF	х	Conservancy
Miller Creek East Fork2	Clearwater River	s,r				CF	х	Conservancy
Minter Creek	Goodman Creek	m		x	eh	CF	х	Conservancy
Mosquito Creek1	Mosquito Creek	m				CF	х	Conservancy
Mosquito Creek2	Mosquito Creek	m				CF, RF		Conservancy
Nolan Creek	Hoh River	m,s				CF, RR	х	Conservancy
Owl Creek1	Hoh River	m,s		х	e/l h	CF, AL	х	Conservancy
Owl Creek2	Hoh River	m			e/l h	CF	х	Conservancy
Rocky Brook	Dosewallips River	m,s	х	x	х	RR		Conservancy
Salmon Creek1	Snow Creek	m, s, r	x			AP, RR, CC, AL, RF, CF (small)	WDFW (UNCAS school)	Conservancy
Salmon Creek2	Snow Creek	m, s	х		e/l h	CF, RF, RR (small)		Conservancy
Salmon River	Salmon River	m,s,r		x	e/l h	CF	х	Conservancy
Shale Creek	Clearwater River	m,s,r		x	e/l h	CF	х	Conservancy
Snahapish River	Clearwater River	m,s,r		x	e/l h	CF	х	Conservancy
Snow Creek1	Snow Creek	m, s	х			RR, AP, CC, AL	WDFW (UNCAS school)	Conservancy
Snow Creek2	Snow Creek	m, s	х	close proximity	e/l h	RR, AP, AL		Conservancy
Solleks River1	Clearwater River	m,s				CF	х	Conservancy
Solleks River2	Clearwater River	S				CF	x	Conservancy
Stequaleho Creek	Clearwater River	m,s				CF	x	Conservancy
Stequaleho Creek2	Clearwater River	р			e/l h	CF	x	Conservancy
Winfield Creek	Hoh River	msr		x	e/l h	CF, RR	x	Conservancy

x=YES m=presence/migration RR=rural residential AL=Local Agriculture E/lh=erosion/landslide hazard area

s=spawning CF=Commercial Forest AP=Commercial Agriculture

r=rearing PPR=Parks/ Preserves/ Recreation Areas **RF=Rural Forest** cmz=channel migration zone (FOR EAST COUNTY RIVERS ONLY X=Yes)

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center

			Fac				
Reach	Basin	Salmonid Use	Terrestrial Priority Species Use	Zoning	Public Land	Water Quality Impairment	Recommended SED
Anderson Lake	Chimacum		х	PPR	х	Total Phosphorus	Natural
Beausite Lake	Chimacum			RR, CF, RF	х		Conservancy
Crocker Lake	Snow Creek	m,s,r	х	RR	х	Fecal Coliform	Natural and Conservancy
Gibbs Lake	Chimacum	m,r	х	PPR	х	Total Phosphorus	Natural
Lake Leland	Little Quilcene	m	х	RR, AL, PPR	х	Invasive Species	Conservancy
Lords Lake	Little Quilcene	m		IF	(inholding forest)		Natural
Ludlow Lake	Port Ludlow			CF			Natural
Mill Pond	Port Townsend Bay		х	HI, RR			High Intensity
Peterson Lake	Chimacum	m		CF, RF			Natural
Rice Lake	Donovan			RR, CR, RF			Natural
Sandy Shore Lake	Southern Toandos Peninsula, Thorndyke Bay, and Squamish Harbor	m		CF		Total Phosphorus	Conservancy
Tarboo Lake	Dabob Bay		х	CF, IF	х	Total Phosphorus	Natural
Teal Lake	Squamish Harbor			RR			Natural
Wahl Lake	Southern Toandos Peninsula, Thorndyke Bay, and Squamish Harbor			CF			Natural

# Table 5-5. Preliminary SED Recommendations by Shoreline Reach – Lakes<sup>4</sup>

<sup>4</sup> Conservancy is the recommended default designation for all undesignated shorelines.

**NOTES:** x=YES

m=presence/migration

**RR**=rural residential AL=Local Agriculture S=spawning **CF=Commercial Forest** AP=Commercial Agriculture R=rearing

PPR=Parks/ Preserves/ Recreation Areas **RF=Rural Forest** 

CC=Crossroad MPR=Master Plan Resort HI=Heavy Industrial RVC=Rural Village Center