

Draft WRIA 20 *Preliminary SMP Elements Report*



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WRIA 20 Preliminary SMP Elements

Summary of Update Issues and Opportunities

The inventory and characterization assessment found that WRIA 20 is lightly populated, continues to support healthy salmon runs, and contains a vast expanse of publicly-owned forested landscape no longer subject to logging. Under the current SMP, WRIA 20 has 48 designated reaches: 34 assigned conservancy status; 13 assigned rural status; and 1 assigned urban status. A recent analysis indicated that 36 additional segments meet the criteria of “shorelines of statewide significance” and therefore must be assigned designations. Many of these undesignated reaches are located on public forestlands lands far from utilities and roads. While reviews were conducted of all qualified stream segments, the most detailed analyses were directed at stream reaches in which development was practical and likely.

For the past two decades, development pressure in this remote part of the County has been extremely limited. Future growth in population and intensification of shoreline uses are likely to be constrained by the lack of family-wage jobs, the area’s distance from urban centers, and the area’s wet climate. Because it is likely that the intensity of shoreline uses will *not* change significantly, most shorelines will continue to sustain their ecological function without loss under current rules and designations. Therefore, most designations assigned in the existing SMP will not need amendment. The inventory and characterization analyses led to a focus on a limited number of stream reaches in which changes were proposed and subjected to public review and comment. The recommendations that resulted from these deliberations are discussed below.

Designations under the Current Clallam County SMP

The current Shoreline Master Program, most recently revised in 1992, established and defined five shoreline environments or designations. These are “natural,” “conservancy,” “rural,” “suburban,” and “urban” environments. The following discussion summarizes the definition and purpose of these designations. Key guidelines governing uses in these environments are included. Because the dominant use of the shorelines of WRIA 20, other than commercial forestry, is residential, the central controversies pertained to the impacts of proposed changes regarding permitted and prohibited uses, and minimum shore setback for dwellings. Under the rules, the minimum setback is measured from the “ordinary high water mark” or from “mean higher high water.”

Natural Environment

The Natural Environments possess features of unique natural or original condition of historical, cultural, scientific or educational value and are considered relatively intolerant of intensive human use. Based on local citizen opinion and the needs of the people of the state, these shorelines should be maintained or restored in its original condition for the benefit and pleasure of future generations. Current policies on use prohibit commercial or industrial development in Natural Environments. Other uses should be limited to those that preserve natural features unchanged. Recreation and public access should be encouraged only if such activities will not degrade the area. Residential subdivisions and development are prohibited. Single family structures are permitted subject to the policies, general and tabular regulations. Floating homes are prohibited. Bed and breakfast inn facilities are prohibited. The minimum residential setback for a single family unit in a Natural Environment is 150 feet and for a multi-family unit is 200 feet.

Conservancy Environment

A Conservancy Environment includes: shorelines with steep slopes, erosion and landslide hazard zones; areas prone to flooding; and areas that cannot provide adequate water supply or sewage waste disposal. Permitted uses include sustainable forestry, agricultural uses, and aquaculture. Non-consumptive uses are preferred. Uses not permitted are: the removal of sand and gravel from marine beaches, rivers, streams and creeks; mining; commercial and industrial developments, ports, feed lot operations, log booming and marinas. Residential subdivisions and developments are prohibited. Single family structures are permitted subject to the policies, general and tabular regulations. Bed and breakfast inn facilities are permitted as a conditional use, subject to the policies, general and tabular regulations and conditional use permit criteria. Floating homes are prohibited. The minimum residential setback for a single family unit in a Conservancy Environment is 75 feet and for a multi-family unit is 200 feet.

Rural Environment

The Rural Environment is presently marked by intensive agricultural or recreational use, or has the potential of becoming prime farm land. The objective should be to protect agricultural shorelines from urban expansion, function as a buffer between urban areas, and restrict intensive development along shorelines presently in an undeveloped state. Commercial developments, including tourist facilities and other developments that are shoreline dependent may be permitted with a conditional use permit. Shoreline uses in this environment should be restricted to those which are applicable to agricultural activities, aquaculture or public recreation. Residential development is permitted, subject to the policies, general and tabular regulations. Floating homes are a permitted use, subject to the policies and general regulations. The minimum residential

setback for a single family unit in a Rural Environment is 50 feet and for a multi-family unit is 100 feet.

Suburban Environment

The Suburban Environment is defined as an area of moderate density residential use and recreational-residential use, consisting primarily of single family permanent or recreational residences. These areas have sufficient water supplies and are suitable for sewage disposal methods adequate for moderate density residential uses, but inadequate for intense commercial or industrial uses. Such areas are generally unsuited for agricultural uses and sustained yield forest management. They are historically residential and not presently or potentially "natural" areas. Residential development is permitted, subject to the policies, general and tabular regulations. Floating homes are a permitted use, subject to the policies and general regulations. The minimum residential setback for a single family unit in a Suburban Environment is 35 feet and for a multi-family unit is 75 feet.

Urban Environment

The Urban Environment is defined as an area of high intensity land use, including residential, commercial, and industrial development. This environment does not necessarily include all shorelines within an incorporated city, but is suitable for areas presently subjected to intensive use pressure, and areas planned to accommodate urban expansion. Favorable consideration for industries, transportation facilities, port facilities, tourist facilities, commercial and other facilities should only occur when they are particularly dependent on shoreline location or use. Residential development is permitted, subject to the policies, general and tabular regulations. Floating homes are a permitted use, subject to the policies and general regulations. The minimum residential setback for a single family unit in an Urban Environment is 35 feet and for a multi-family unit is 50 feet.

SMP ELEMENTS: Reaches to Retain Existing Level of Protection

Recommendation 1: Specified Remote Streams that Currently Are Designated "Conservancy" Environments Should Retain Protective Restrictions

Twenty (20) stream reaches in the remote and forested watersheds of WRIA 20 are assigned conservancy designations in the existing plan. They are highly unlikely to develop and flow through public lands. They are far from utilities and are dedicated to forestry uses. Ecological conditions and current and future uses provide no compelling reasons to recommend increasing or decreasing the protective status of these conservancy reaches. The following are remote conservancy reaches that should retain that status: BEAVER LK, CALAWAH N 10, COAL 10, COLBY 10, DICKEY 10, DICKEY 20,

DICKEY E, DICKEY LK, DICKEY M, DICKEY W, ELK LK, PILCHUCK 10, PONDS CR, SKUNK, SNAG 10, SOLDUC 80, SOOES 20, THUNDER, UMBRELLA 10, and WENTWORTH LK.

Recommendation 2: Specified Middle and Lowland Reaches that Currently Are Designated “Conservancy” Environments Should Retain Protective Restrictions

Under the current SMP, fourteen (14) middle and lowland reaches have been assigned “conservancy” designations. These reaches have high levels of riparian canopy cover, valuable habitat, and substantial critical areas. They are primarily zoned for forestry use with a minor portion dedicated to light residential development. The designations in these reaches continue to be appropriate to assure no net loss of ecological function and to accommodate current and likely future development. Thus, the analyses indicate no justification for changes in the following twelve (12) “conservancy” reaches: BEAVER 10, BIG RIVER 10, BIG RIVER 30, CALAWAH 10, CALAWAH 30, CALAWAH S 10, MAXFIELD 10, MURPHY 10, SHUWAH 10, SOLDUC 20, SOLDUC 40, and SOLDUC 60.

In one (1) lowland “conservancy” reach--ELK 20, recent studies conducted by the Wild Salmon Center indicated the presence of habitat of unusual value and as a result triggered more intensive technical review. The WSC has proposed to assign that reach “natural” environment status. Public comment was encouraged in relation to this potential reach boundary and designation change and in general there was no opposition. A more complete description of the issues is presented below.

In one (1) other “conservancy” reach-- LK PLEASANT 20, residential expansion supports the need to reevaluate the current conservancy designation. The western segment of this reach is similar to other conservancy reaches that flow entirely through commercial forestlands, while the eastern portion contains a continuous block of parcels zoned for light residential development. This reach should be segmented into a conservancy portion and an eastern portion that accommodates light residential development consistent with the zoning rules.

Recommendation 3: Specified Rural Reaches Should Retain Moderate Restrictions

Under the current SMP, thirteen (13) reaches have been assigned “rural” environment status. These reaches are generally located in middle and lowland areas close to roads and utilities and flow through areas entirely zoned for forestry, agricultural or relatively light rural residential use. Two short segments of these shorelines are zoned for more dense residential development (1/2 acre per dwelling) under the Quillayute Residential (QR) designation. Approximately 1.5 river miles of the west shoreline of SOL DUC 30 are zoned QR in the Steelhead Avenue- Iverson Road- Shuwah Road area. The SOL DUC 30 reach is a total of 6.7 miles in length. Less than .25 river miles of the north shoreline of QUILLAYUTE 20 near Richwine Rd is zoned QR. QUILLAYUTE 20 is roughly 2.4 miles in length.

The inventory and characterization analyses indicated that many of these “rural” reaches continue to be appropriately designated. In light of the good quality of their riparian, hydrologic and habitat conditions as the relatively low impact uses authorized in them, no changes are necessary in the

following six (6) “rural” reaches: BEAR - SOL DUC 10, BIG RIVER 20, BOCKMAN 10, QUILLAYUTE 20, SOLDUC 10, and SOLDUC 70.

In six (6) other “rural” reaches, the presence of geohazard zones, active hydrologic processes, critical habitat, questionable reach breaks, and a high likelihood of future development triggered more intensive technical review. Public comment has been encouraged in relation to potential changes in reach boundaries or designations. These reaches included BOGACHIEL, CALAWAH 20, ELK 10, SOL DUC 30, and SOL DUC 50. In one “rural” reach— BEAR-BOGACHIEL 10, the lack of current and likely future development combined with the quality of ecological conditions supported a proposal to change this reach from a “rural” to a “conservancy” environment status. More detailed descriptions of the factors considered in relation to these potential changes are presented below.

Recommendations: Treatment of Undesignated Reaches

In WRIA 20, thirty six (36) stream reaches that meet the criteria of “shorelines of statewide significance” have not been previously designated. In some cases these undesignated reaches have characteristics that are very similar to the already designated reaches that they flow into. In other cases, their features are very different. The following recommendations address the treatment of undesignated reaches in WRIA 20.

Recommendation 4: Proposed Status for Undesignated Reaches flowing into Conservancy Reaches

Of the undesignated reaches, twenty –one (21) reaches flow into reaches designated as conservancy environments. They include: ALBION, BEAVER 20, BEAVER 30, BIG RIVER 40, CALAWAH N 20, CALAWAH S 20, CAMP, COAL 20, COLBY 20, ELK - CALAWAH 30, GOODMAN, LAKE CR - SOL DUC 20, MAXFIELD 20, MURPHY 20, PILCHUCK 20, SNAG 20, SOLDUC 90, SOOES 30, TROUT, UMBRELLA 20, and UNKNOWN-DICKEY. These reaches contain high-quality habitat that has contributed to WRIA 20’s status as among the least impaired in the state. Located in areas almost entirely zoned as forestlands, they are generally uninhabited or lightly inhabited and remote from roads and utilities. With the exception of COLBY 20, they are unlikely to develop. COLBY 20 is located in an area zoned for rural residential development and thus should be assigned “rural” environment status. Conditions in the other 20 undesignated reaches are very similar to the rivers they flow into, so they should be assigned status that maintains quality of conservancy reaches through protective and restrictive rules.

Recommendation 5: Proposed Status for Undesignated Reaches that flow into Rural Reaches

Of the undesignated stream reaches, seven (7) reaches flow into reaches that are currently designated as “rural” environments. These include BEAR - BOGACHIEL 20, BEAR - SOL DUC 20,

BOCKMAN 20, DRY – BOGACHIEL, LAKE CR– SOL DUC 10, MILL, and SHUWAH 30. These reaches are located in middle to lowland areas of WRIA 20 and are thus more accessible to roads, utilities and development. However, most contain quality habitat, and are lightly inhabited or uninhabited.

For the five (5) of these reaches—SHUWAH 30, BEAR-BOGACHIEL 20, BEAR - SOL DUC 20, DRY – BOGACHIEL, and BOCKMAN 20, conservancy status appears most appropriate. In relation to the other two (2) reaches- LAKE CR– SOL DUC 10 and MILL, a new category of designation should be considered that would allow for sufficient protection while accommodating likely growth. In both reaches, residential zoning directs development to one shoreline, while the opposite shoreline is zoned for commercial forest uses. A new shoreline designation such as “urban habitat impact” or “rural habitat impact” would be appropriate to afford sufficient protection and recognize the expectation that one shoreline will accommodate further residential development. A more detailed description of the issues is presented below.

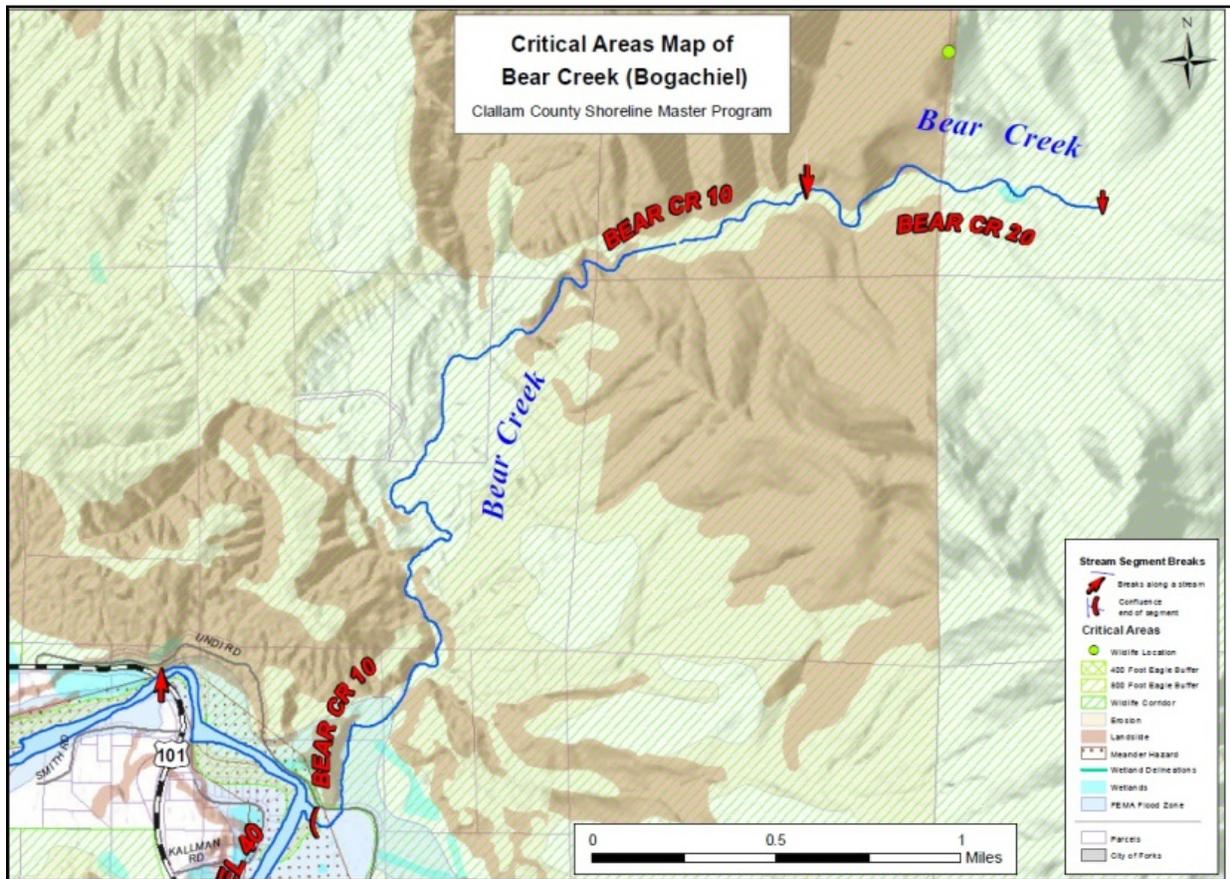
Recommendation 6: Proposed Status for Specified Reaches that flow into Undesignated Reaches

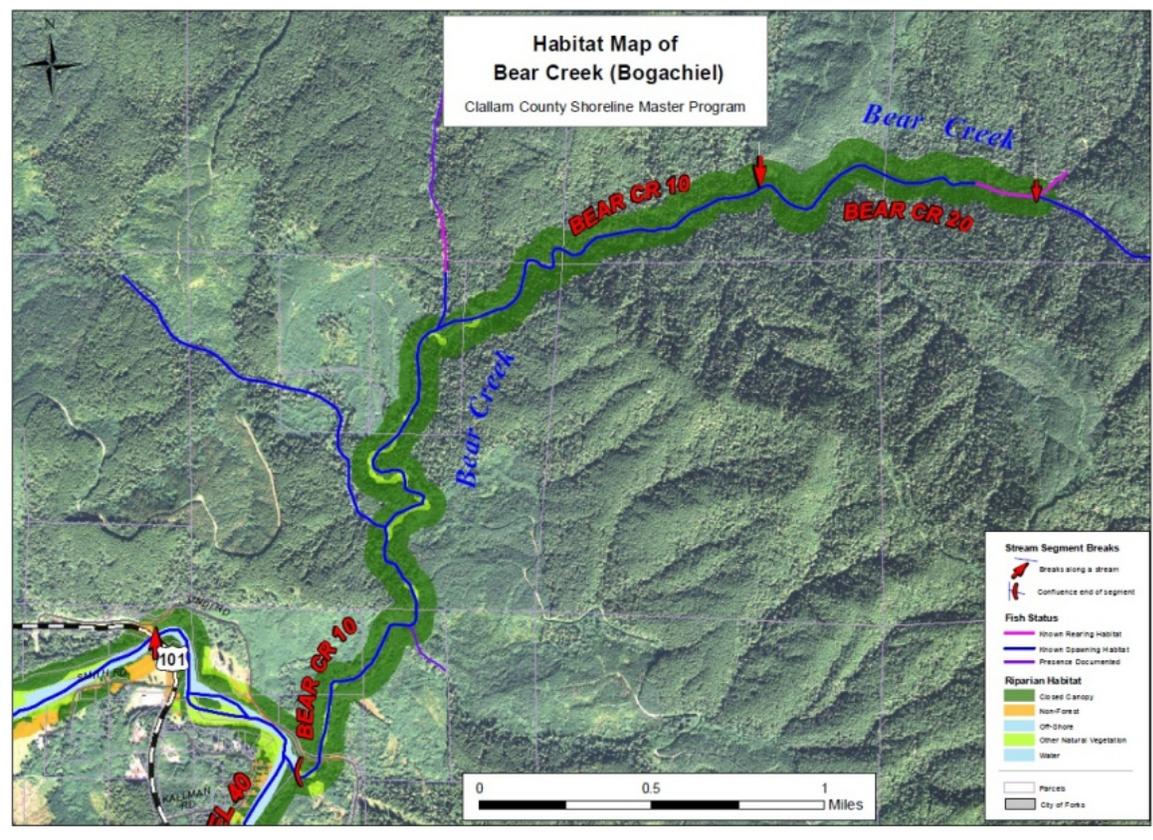
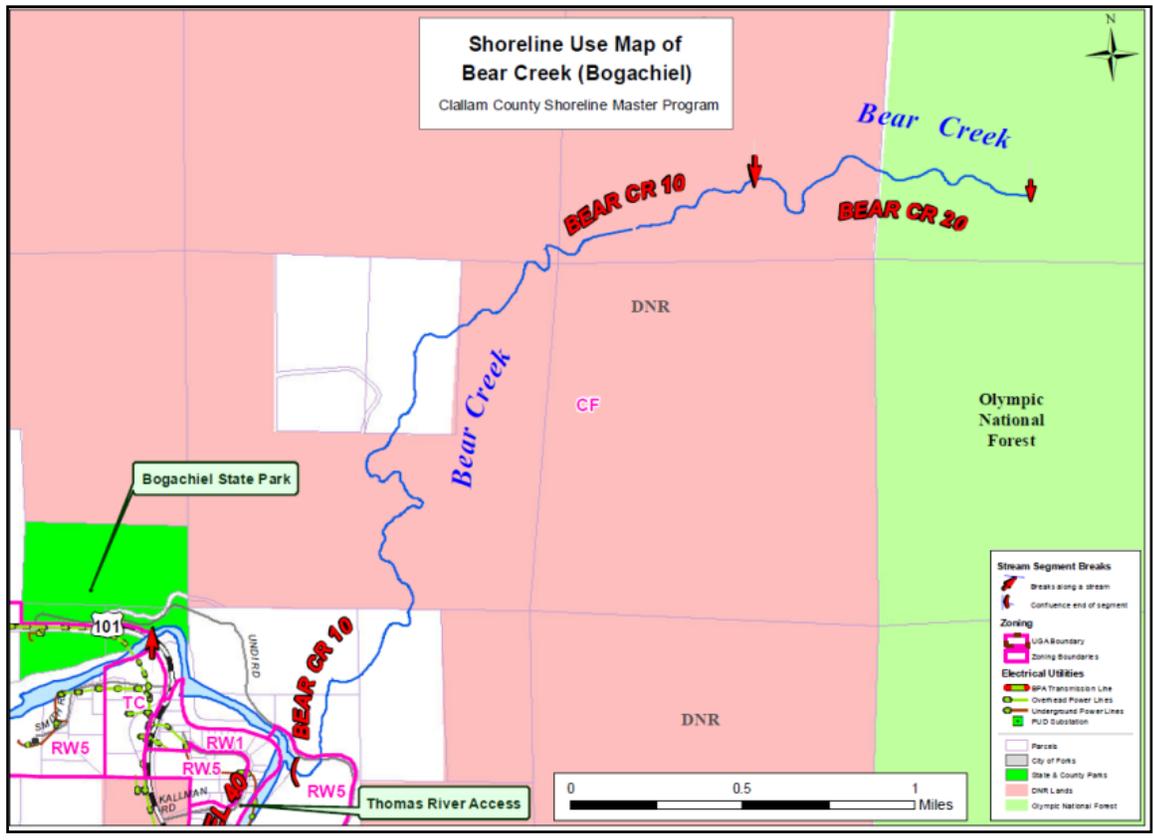
Of the undesignated stream reaches, eight (8) reaches flow into other reaches that are currently not designated or flow into areas outside SMP jurisdiction. These include CROOKED, HYAS, LOST, PISTOL, RAINBOW, SITKUM, SITKUM N, and SOLDUC S. Four (4) of these reaches have been intensively studied by the Wild Salmon Center. Their analyses indicated that “natural” environment status was warranted for the following reaches: SITKUM, S F SITKUM, LOST and RAINBOW. These reaches contain the least impaired portion of the Olympic National Forest. The surrounding forests are mature and ecologically complex. Very high redd counts indicated important spawning and rearing habitat for trout and steelhead. Because this area is remote and wholly within federal ownership, no opposition has been voiced by local residents. The remaining four (4) reaches — HYAS, PISTOL, SOL DUC S and CROOKED— are also located in remote forestlands and are unlikely to develop. They contain quality habitat, but do not possess old growth characteristics. For these reaches, conservancy designation is justified.

Reach Change Proposals

Recommendation 7: Designation Change BEAR-BOGACHIEL 10

The BEAR-BOGACHIEL 10 reach is currently designated a rural environment, although the entire area is zoned for commercial forests. Located in a relatively remote area, there are no residences and no utilities. Over half of its length flows through public lands. The condition of the riparian area is characterized as 96% closed canopy and 3% other natural vegetation. *Consideration should be given to changing the BEAR- BOGACHIEL 10 reach’s designation from “rural” to “conservancy” environment.*

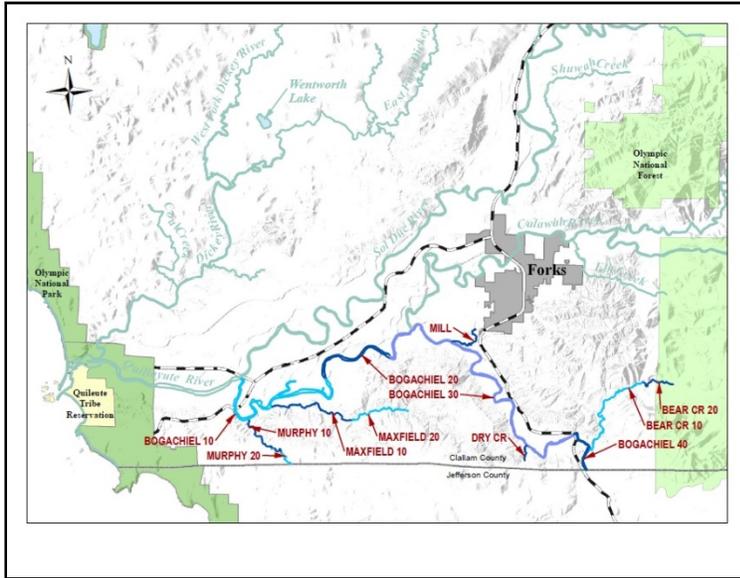




**BEAR-BOGACHIEL 10 Reach: RM 0-3
BEAR-BOGACHIEL 20 Reach: RM 3-4.2**

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	Land use all CT Zoning—all CF	
Public Access	None	
Utilities	No utilities	
<u>Hydrologic</u> Water Quality Sediment Transport	Wide floodplain at mouth Potential associated wetlands at mouth No impairments Erosion hazard area: both sides at RM .8 Landslide: RM 2.1-3.5 (no data upstream)	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	Riparian cover in SMP zone: BEAR-BOGACHIEL10: 96% closed canopy; 1.6% other natural vegetation BEAR-BOGACHIEL20: 100% closed canopy Riparian and LWD condition rated "fair" RM 0-1; Rated "good" RM 1-3.1; Not rated RM 3.1-4.2	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Spawning Overwintering Blockage	Coho, fall Chinook spawning No summer steelhead, chum, sockeye, spring and summer Chinook Winter steelhead spawning RM 0- 3.9; Rearing RM 3.9 – 4.1; Present 4.1- 4.2	<u>Habitat</u> Good

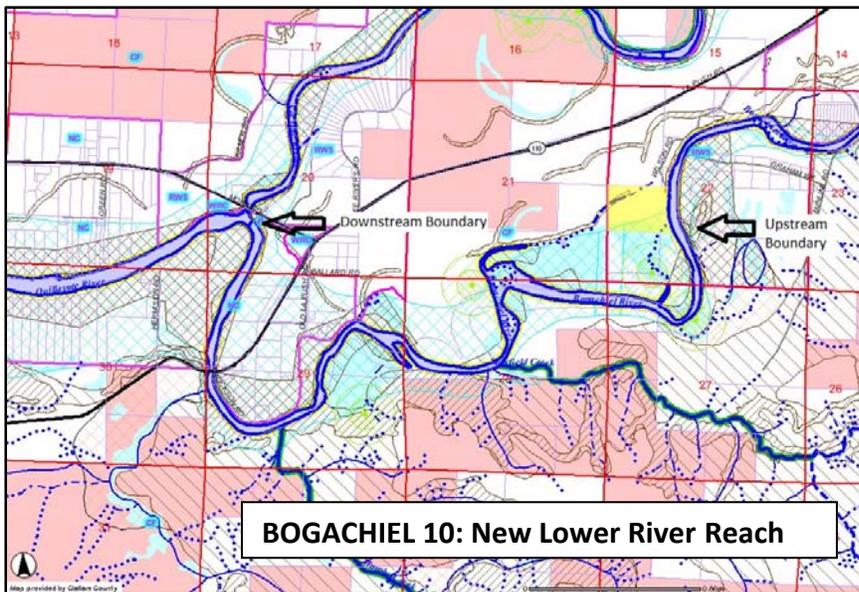
Recommendation 8: Reach Breaks for the Bogachiel Mainstem

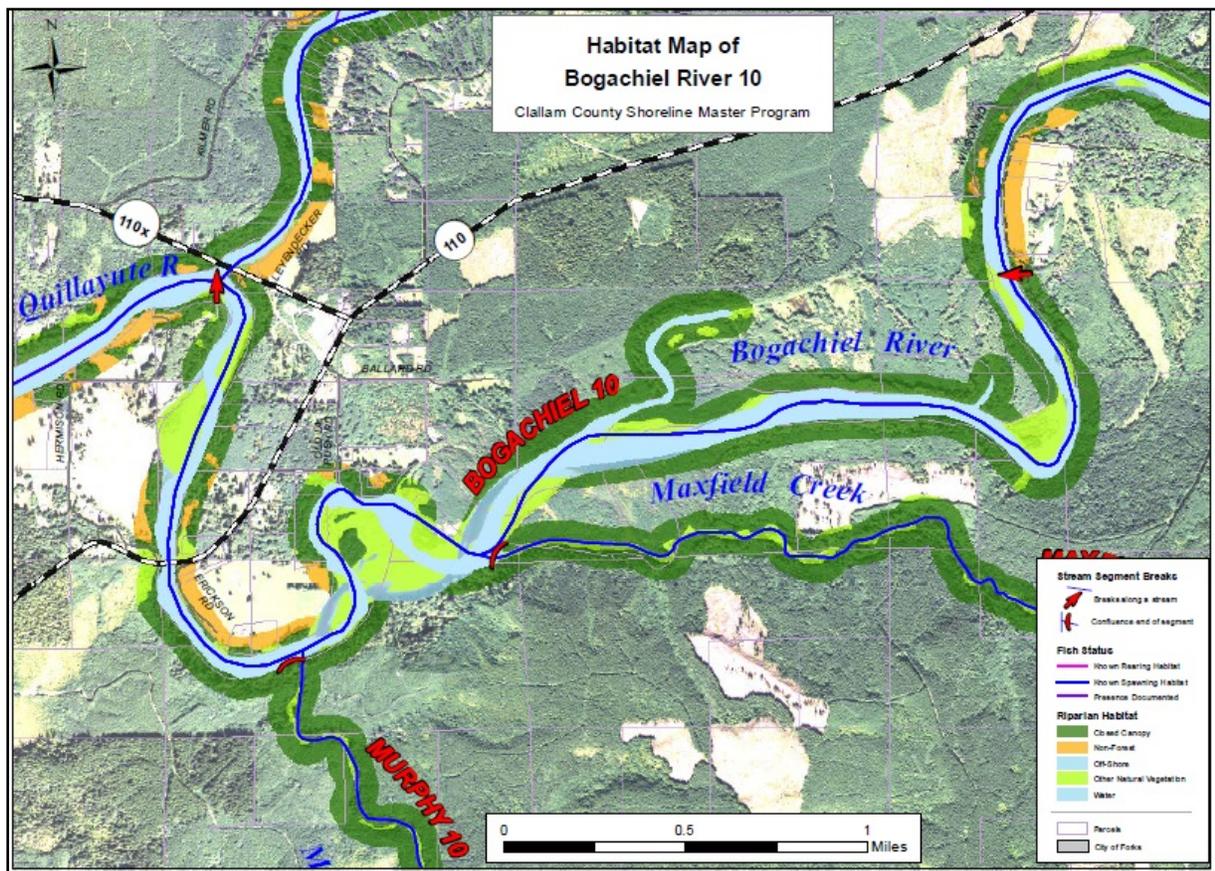
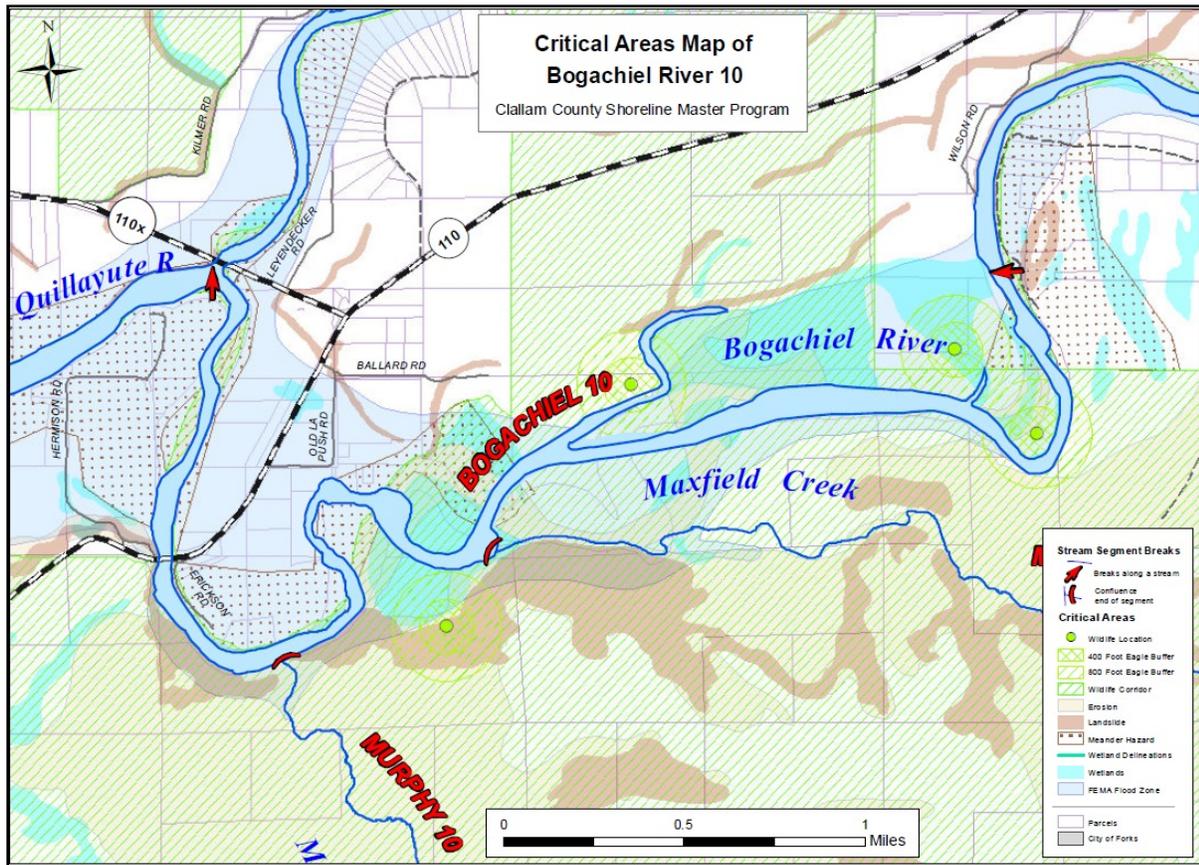


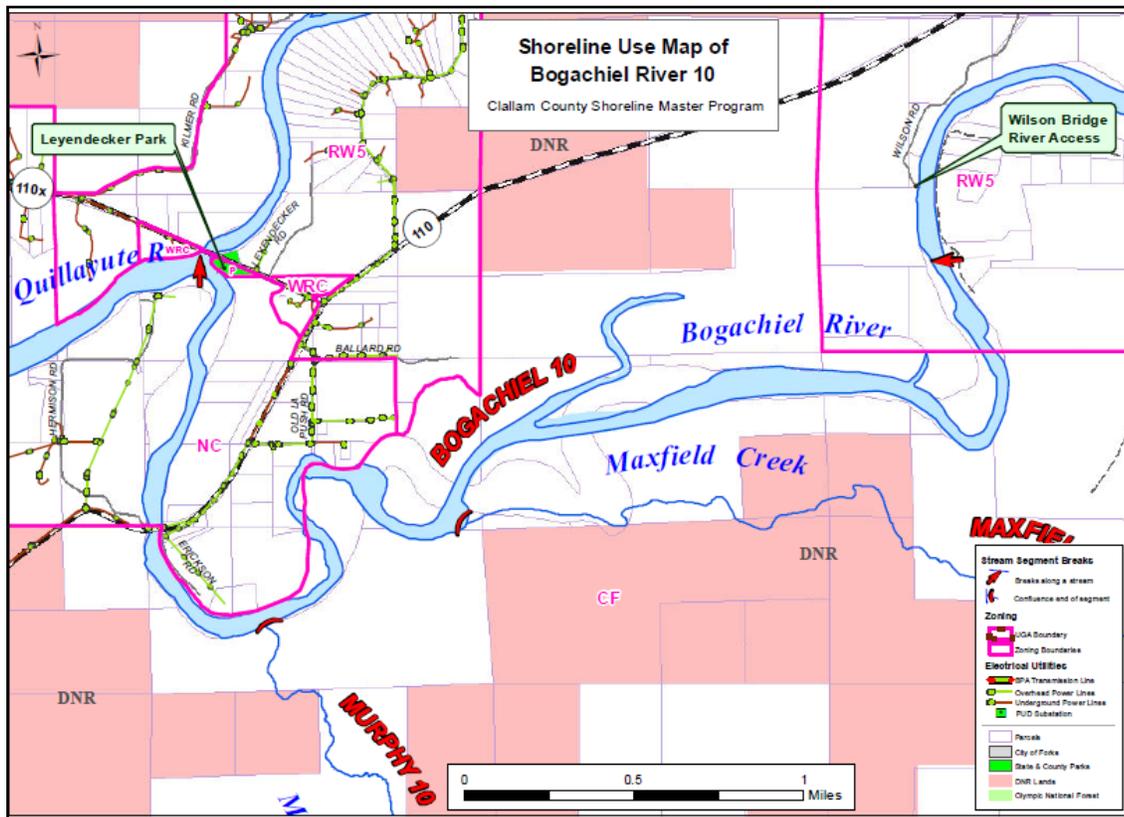
Under the current SMP, the Bogachiel River has no reach breaks, because the entire mainstem’s shorelines have been assigned rural environment designation. The ICR indicated that four segments of the Bogachiel have features that make them suitable for consideration as separate reaches.

New Reach: BOGACHIEL 10

The lower segment — BOGACHIEL 10 (RM 0-5) — represents one of the most active channel migration zones in WRIA 20. It is an area that serves as an important source for spawning gravel, and offers high value spawning grounds. The erosion occurring in this segment threatens to undermine the La Push Road. Shoreline armoring has failed to slow erosion. *This reach is suitable for conservancy status.*

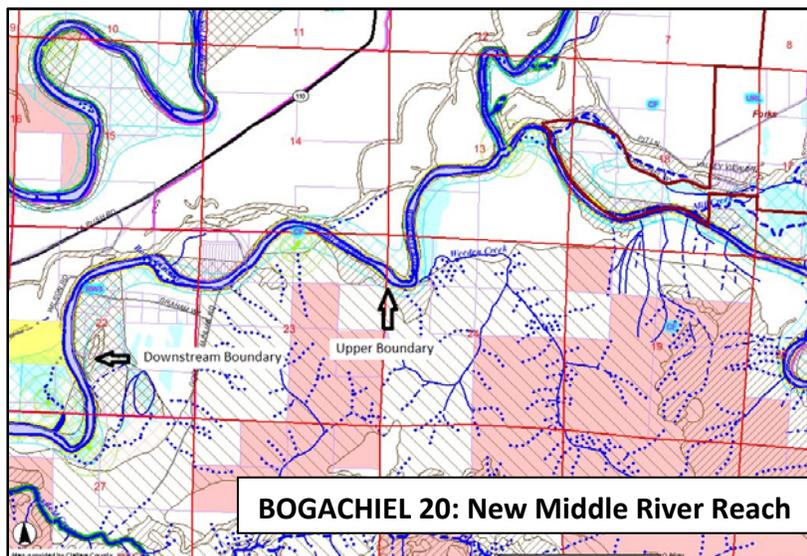






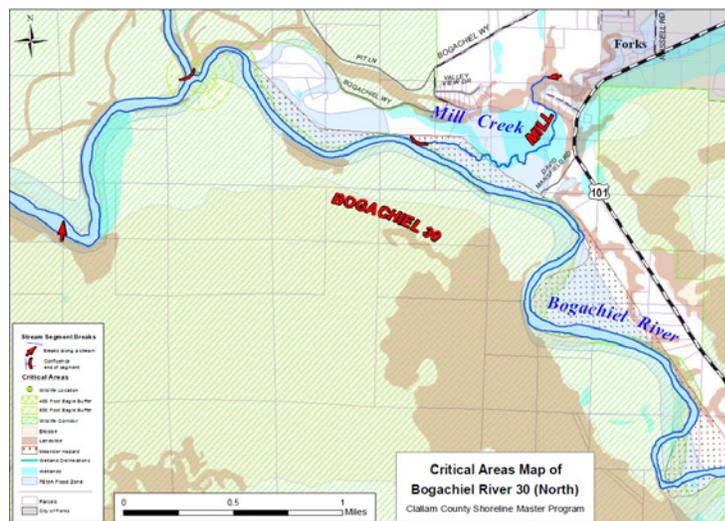
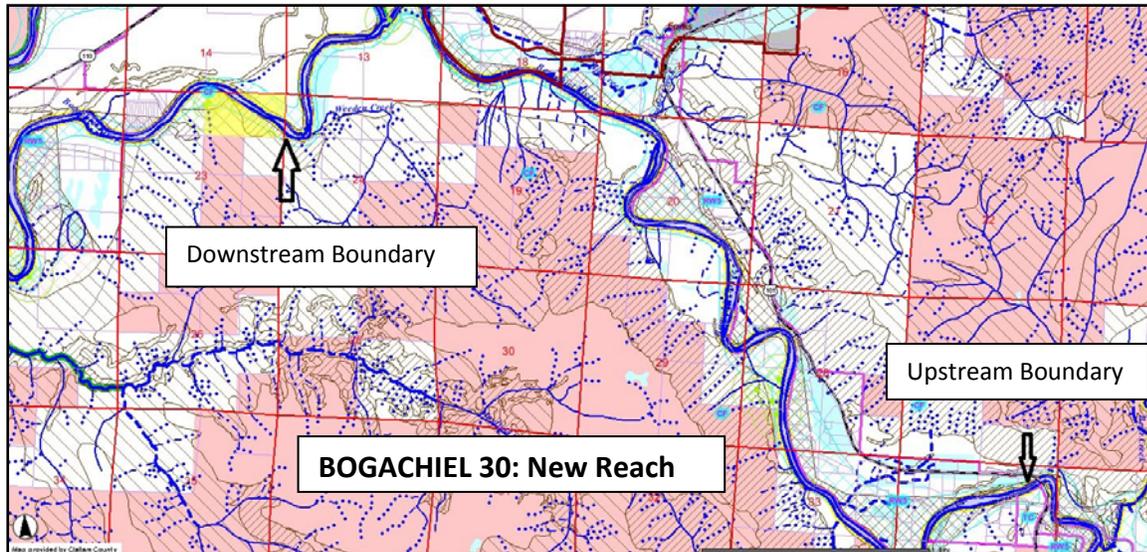
New Reach: BOGACHIEL 20

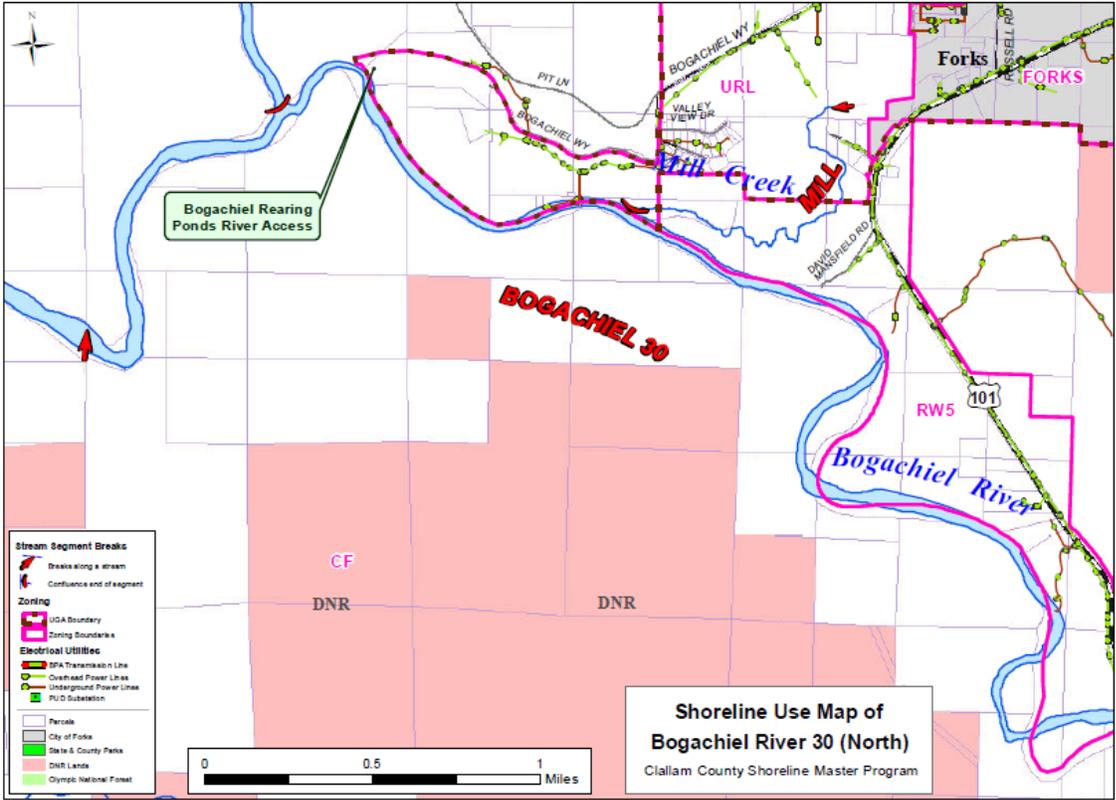
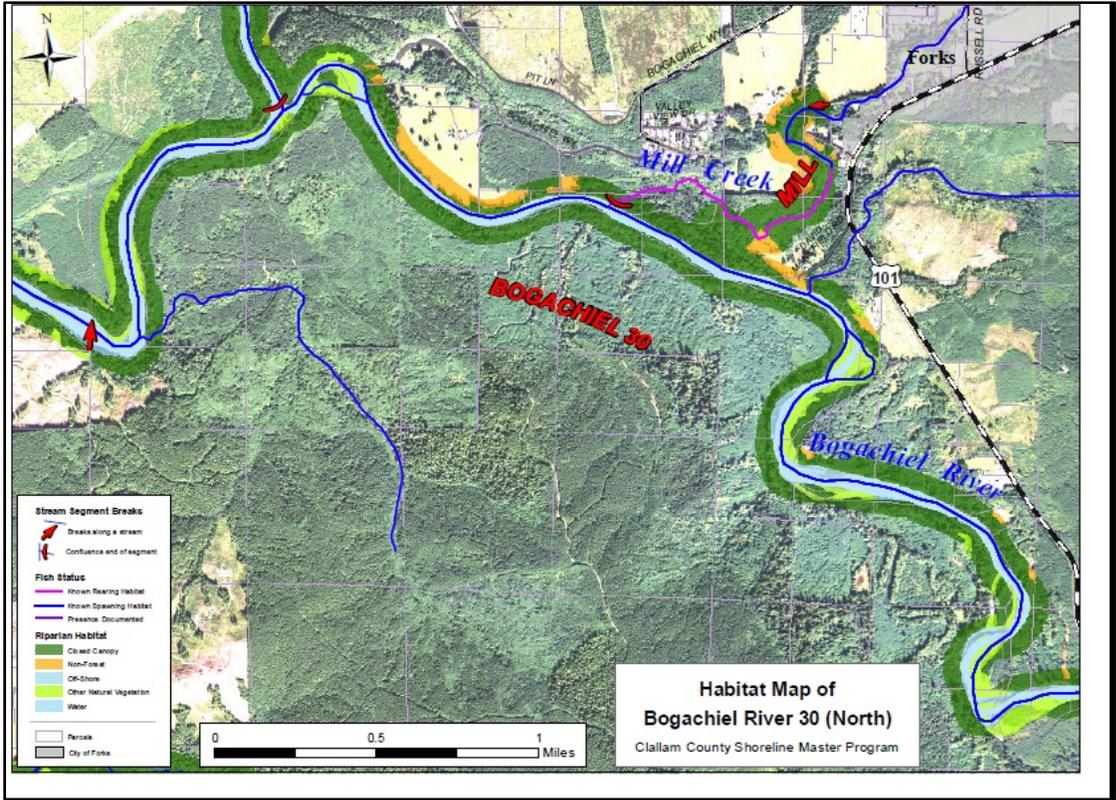
A second reach—BOGACHIEL 20— would extend from approximately RM 5 to RM 7.4. In this reach, the river is more confined. The floodplain is fairly narrow. The Goodmain Mainline housing development, an area of relatively-dense residential lots, occurs on the north shoreline. As with many shorelines in WRIA 20, residential zoning is focused on the side of the river closest to roads and utilities. La Push Rd parallels this reach. *It is proposed that this reach retain rural environment status.*

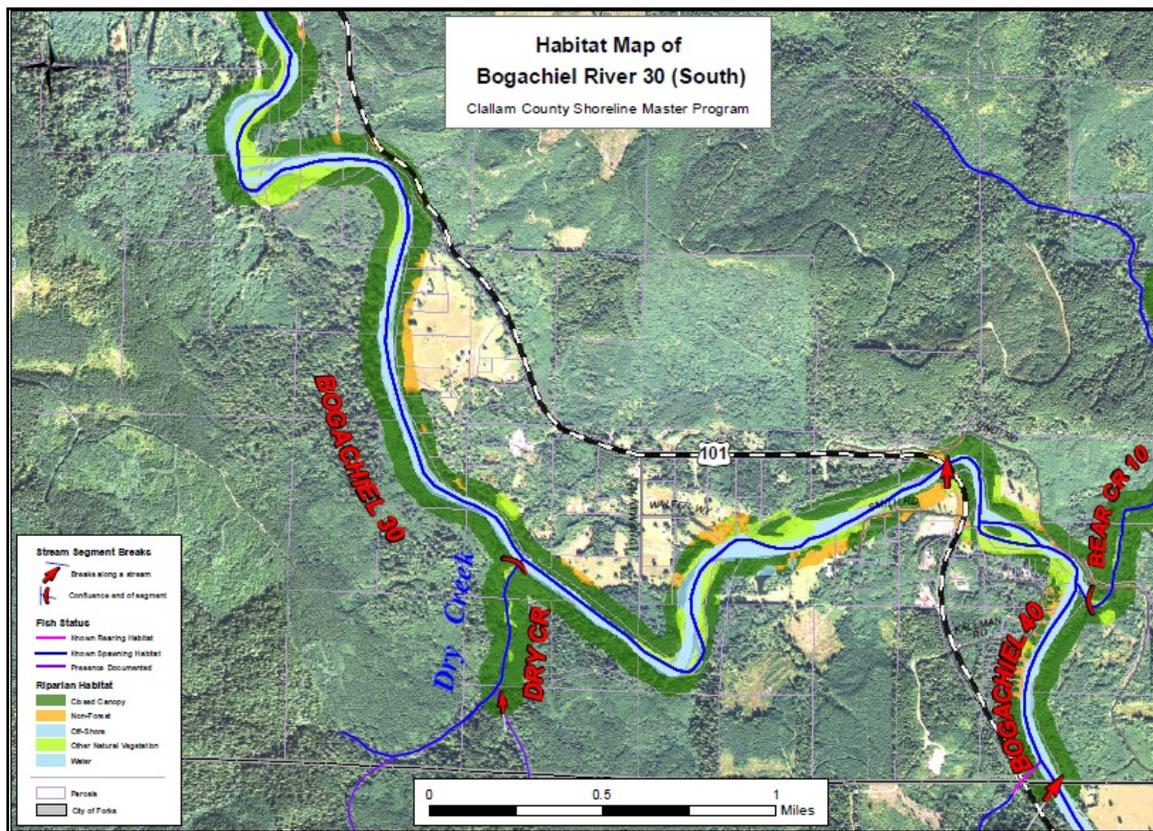
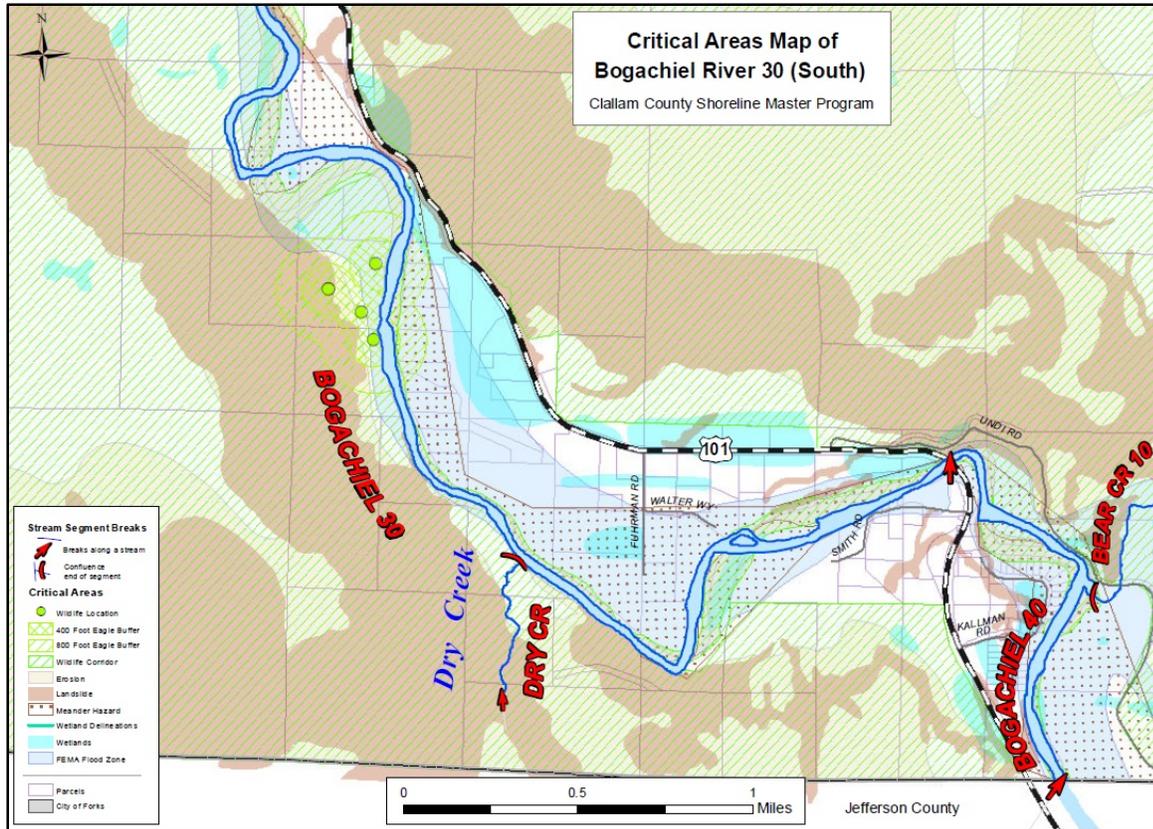


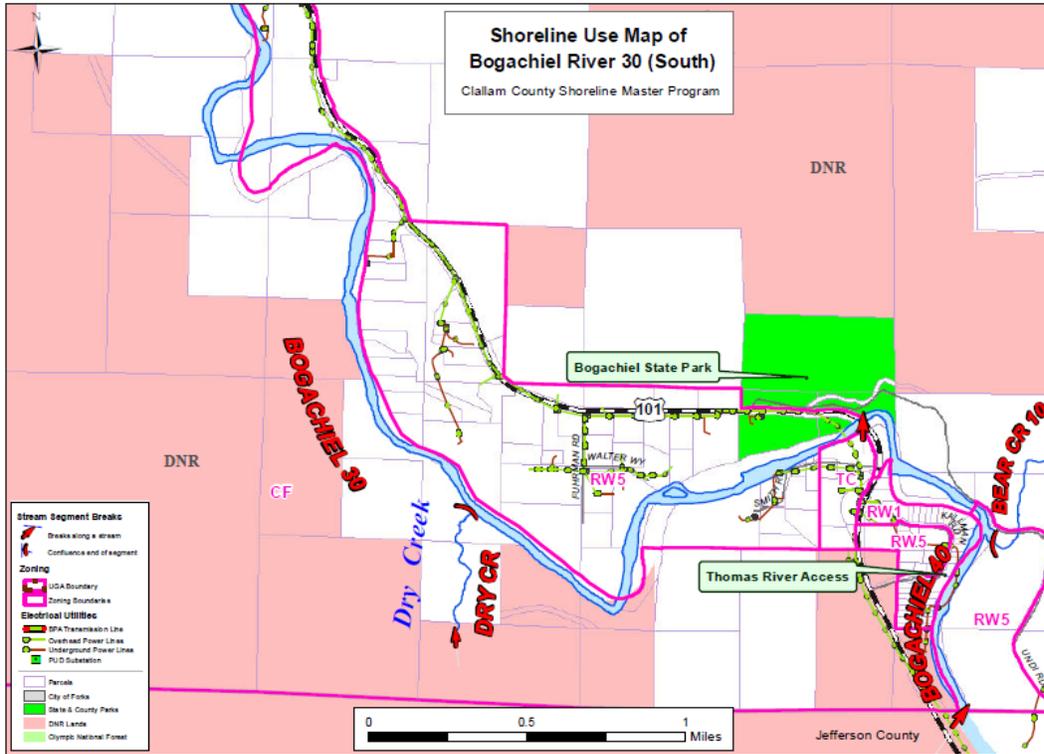
New reach: BOGACHIEL 30

A third new reach — BOGACHIEL 30— would extend from RM 7.4 – 16.3. Present in this segment are wide floodplains, active channel migration zones, critical aquifer recharge areas, and salmon habitat values. This reach includes a roughly one-mile long portion (RM 8.9-10.1) that flows along the Forks UGA. Currently, the WDFW hatchery, a farm and one small resort are located along the UGA riverfront stretch. Areas within the FUGA are intended to serve as the proper location for human development. The opposite shoreline is located within an area zoned for commercial timber production. No utilities are present on the opposite shoreline and access to that area is difficult. Ecological considerations, quality of the habitat, and the lack of current development indicate the need for sufficient protections to secure ecological functions. The presence of the UGA and existing residential zoning along the north shoreline indicate the need to accommodate residential purposes. *This reach should be given to a new designation that provides sufficient protection, but recognizes that one side of this reach is targeted for residential development.* “Urban Habitat Impact” has been proposed by local residents.



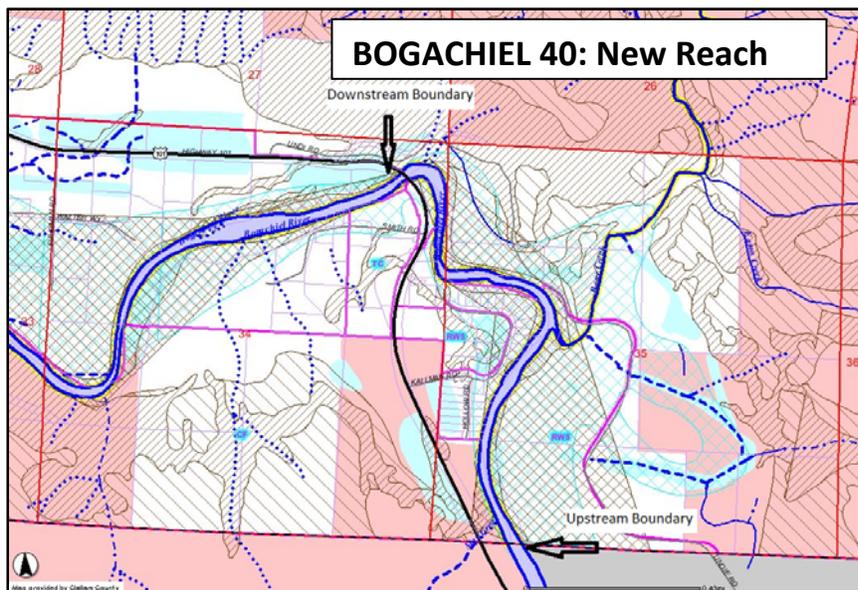






New Reach: BOGACHIEL 40

A fourth reach —BOGACHIEL 40— would extend from approximately RM 16.3 to the boundary of Clallam County at RM 17.6. Within this reach along the western shoreline, the Kallman and Hollow Road housing development is located. This area of relatively light residential housing is situated on the western shoreline. Although currently undeveloped, the opposite shoreline is accessible from Undie Road. The area of active ecological processes is also located on the shoreline opposite residential zoning. US Highway 101 closely parallels this reach. *It is proposed that this reach retain rural environment status.*

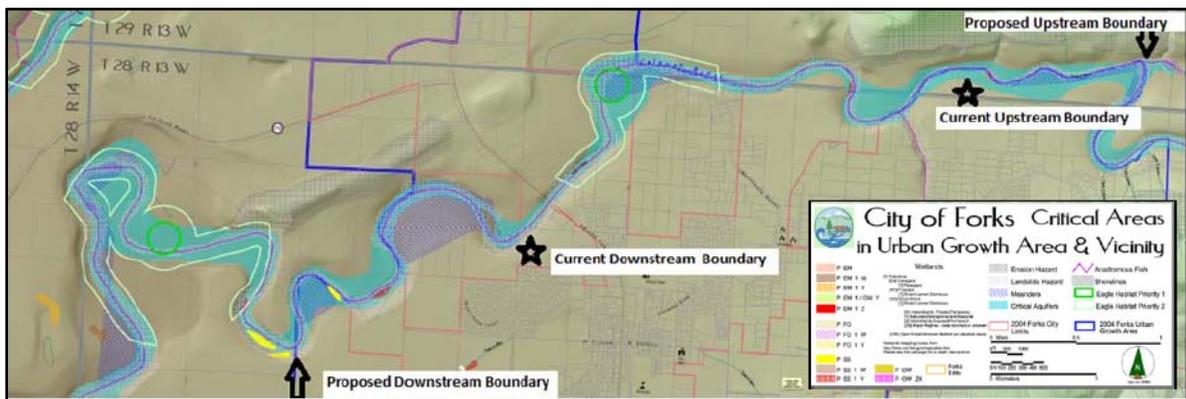
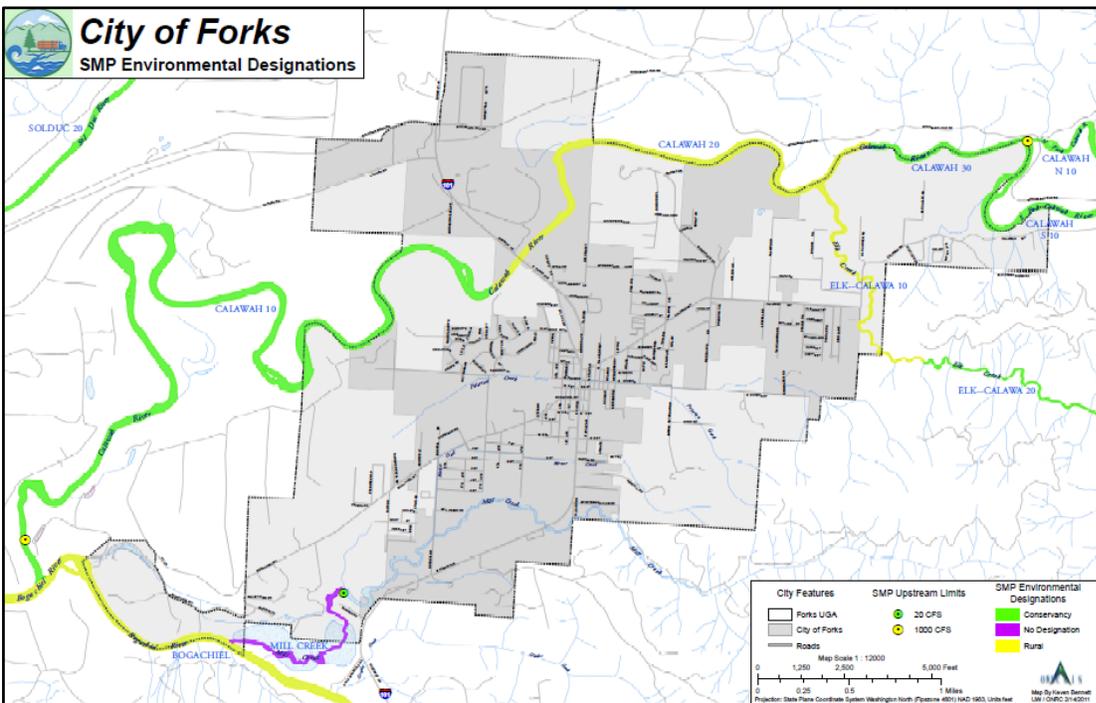


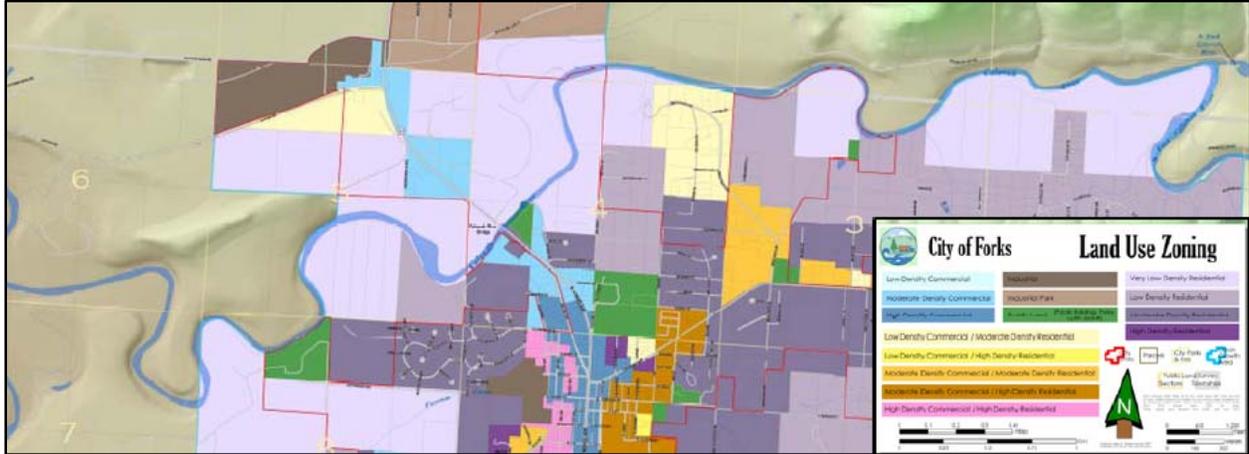
BOGACHIEL Reach: RM 0 to 17.6
Forks UGA: RM 8.9-10.1

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	South (west) shore: Land use: all CT except R: RM 0- .9; RM 5.5 -6.1; RM 15.5- 17.2; Zoning: all CF except RW5: RM 4.7- 5.8 and RM 15.2-17.2 and TC: RM 16-16.2 (Bogachiel State Park) North shore: Land use: CF with blocks of R and Ag at RM .5-.8; RM 5.5-5.6; RM 5.8-6.5 (Goodman Mainline); RM 10.7-11; RM 12; RM 13.6-13.8; RM 15.4- 15.9; Zoning: NC RM 0-2; RW5 at following: RM 4.7- 6.8; RM 10-16.2 & RM 17-17.6 Forks UGA: RM 8.9-10.1; Land use along north shore: R – zoning URL	
Public Access	WDFW boat ramp and steelhead hatchery at the RM 4.8 (edge of FUGA); WDFW Wilson Rd Boat Ramp RM 5.5; Bogachiel State Park RM 16; Boat ramp at 101 Bridge (RM 16.3) and at RM 17 (Kallman Rd); Access opportunity: Furhman Rd at public lands RM 14.7- 15.3	
Utilities	Overhead conductors at RM 1; 2; 15.3; 16; Underground at RM 11.8; 12.3;13.6; 14.5; 15.4; & 17; Underground in FUGA at RM 9.7	
<u>Hydrologic</u> Water Quality Sediment Transport	Temperature exceedances: RM .9- 2.9; 7.6- 12.5; 12.9-14.2; 14.9-16.6; Very wide floodplain from RM 0-5; RM 8.9-17.6 (all of FUGA); Critical aquifer recharge area (CARA) throughout main channel; Associated extensive CARA at RM 2.2; 3.2; 6.1- 6.5; 7.5-11; 11.2-13.8; Potential associated wetlands at RM 3.2; 7.6-8.2; 13.3; Seismic soils RM .8- 1; RM 4.5- .7; Landslide hazard zones: RM 1 – 1.7; RM 2.2-2.3; RM 3.2-3.5; RM 7- 7.5; RM 9.5; RM 11- 13.5; RM 14.8- 16; RM 16.5-16.9 Erosion hazard zone -- RM .8 (north of LaPush Rd bridge); RM 4.2- 4.4; RM 6.2-6.5;	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	Riparian cover in SMP zone: 86.2% closed canopy; 10.1% other natural vegetation; 3.6% non-forest Riparian condition rated “poor” RM 0- 5.2; Rated “fair” RM 5.2 to 17.6 LWD rated “poor” throughout, except RM 16.2 – 17 which is rated “good”	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition; Food Production and delivery Spawning; Overwintering Blockage	All species of salmon present but sockeye only below RM 8.8 (Calawah); Winter steelhead, fall, spring and summer Chinook spawning throughout; Fall chum spawning RM 0- 16.3; Sockeye spawning RM 6.7- 8.8; Summer steelhead present but no spawning; No fish blockage	<u>Habitat</u> Good

Recommendation 9: Designation and Boundary Changes for the CALAWAH 20

CALAWAH 20 is currently designated as a rural environment. This reach contains most, but not all, of the shorelines within the Forks UGA. A segment of CALAWAH 10 borders and then passes through the FUGA. A segment of CALAWAH 30 also borders the FUGA. Four oxbows are present within the shorelines alongside or within the FUGA. The presence of active features such as channel migration zones and other sensitive areas has been questioned by local landowners. Verification of that information is beyond the scope of this study. Local opinion has called into question whether any shorelines within the FUGA should be assigned “conservancy” environment status in light of the purpose of UGA’s as preferred sites for development. *Therefore, it is recommended that the boundaries of CALAWAH 20 be extended to encompass all shorelines with the FUGA and consideration be given to assigning a new designation that allows both growth and sufficient protection.*



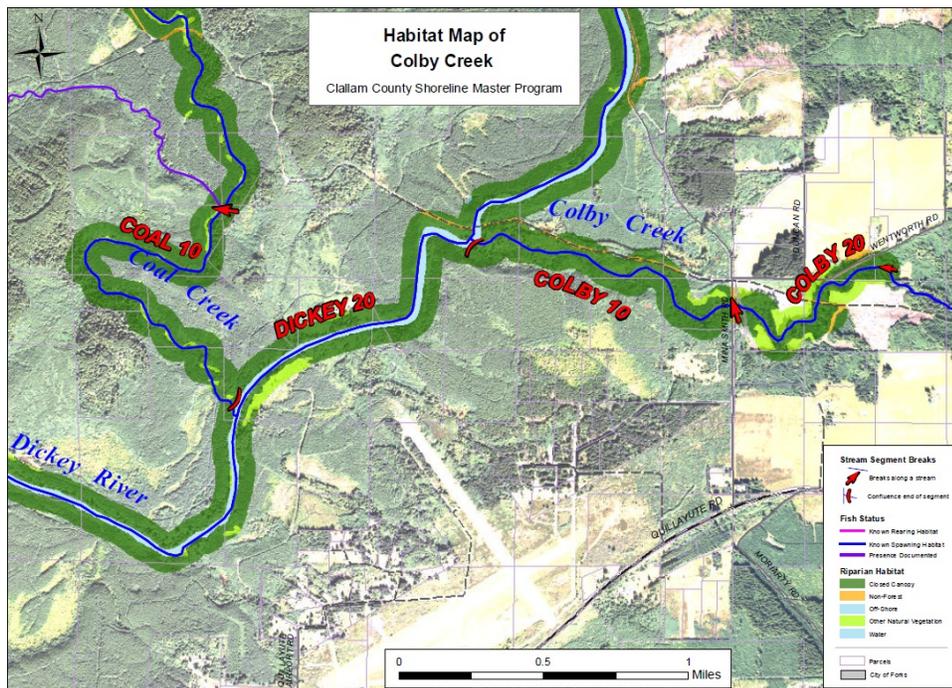
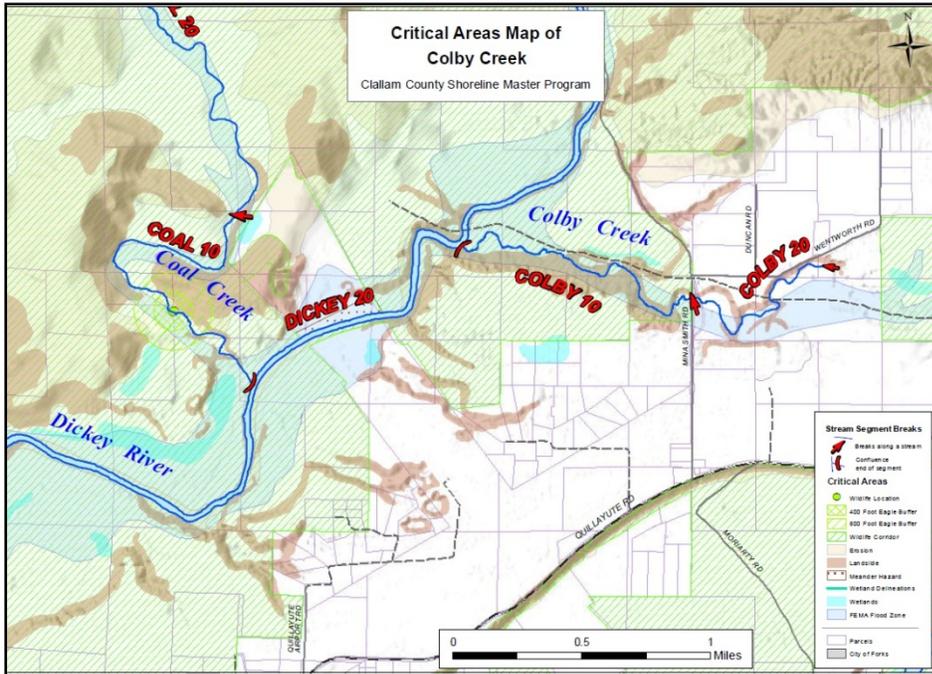


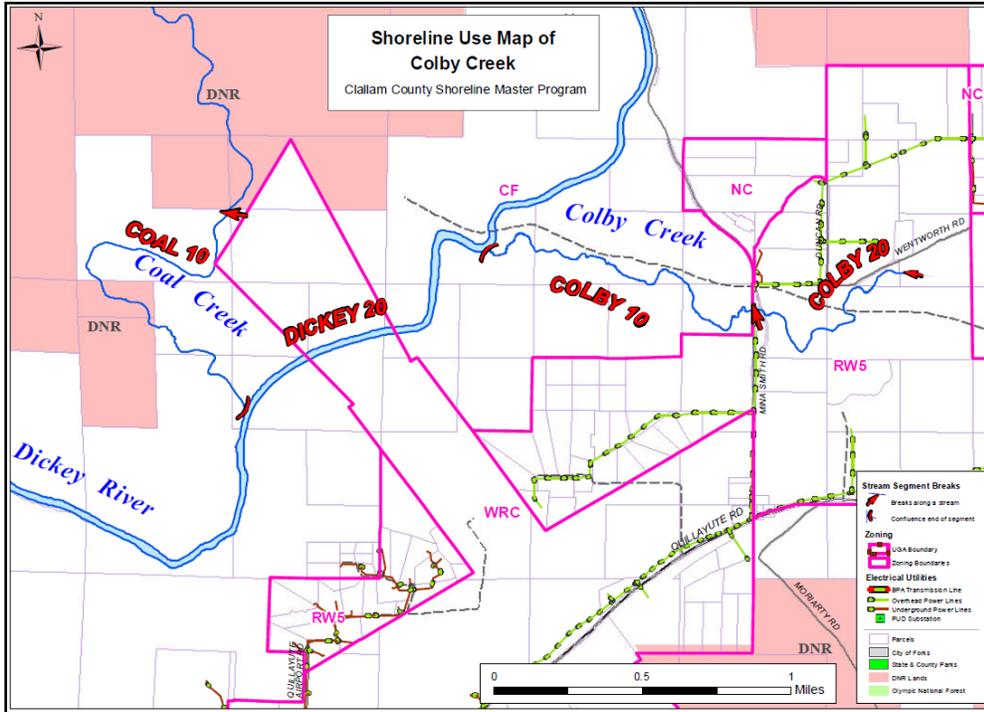
CALAWAH 20 Reach: RM 6.9 – 10
FUGA: Entire Reach South Shoreline

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	South Shoreline: Within FUGA: zoned as Industrial (M), Tourist Commercial (TC), Public (P) and Urban Residential Low Density zone (URL) North shoreline: outside FUGA: all CT	<u>Shoreline Uses</u> South shoreline is lightly populated, but within the urban growth area; northshoreline is commercial forestlands.
Public Access	FUGA: WDFW boat launch adjacent US 101 Bridge	
Utilities	PUD ArcFM transmission line where HY 101 crosses CALAWAH 20; Underground conductor lines near riparian zone from RM 6.9 to 8.5	
<u>Hydrologic</u> Water Quality Sediment Transport	No 303(d) listings Armoring at HY 101 bridge Critical aquifer recharge area: RM 6.7-8.2 (within FUGA); RM 9.2-9.8 (on north side of river only) Floodway—RM 7.6-7.9 (within FUGA) 100-year Floodplain—RM 8.8-9 (within FUGA), 9.2-9.4 (primarily outside FUGA) Meander around RM 8 Landslide hazard zone—RM 6.9-Elk Creek (RM 9.5)	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	CALAWAH 20: 76.7% closed canopy; 17% other natural vegetation; 6.3% Non-forest No riparian or LWD rating	<u>Vegetative</u> Good on northshore Fair on southshore
<u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage	Fall Chinook spawn throughout the reach and rear at the Elk Creek confluence; Spring and summer Chinook and winter steelhead spawn throughout; Coho, fall chum, sockeye and summer steelhead documented as present throughout reach Spawning Fall, spring and summer Chinook, coho and winter steelhead all have healthy stock statuses; Fall chum and summer steelhead are unknown; Sockeye is undocumented (SASI, 2004) Eagle's nest at RM 8	<u>Habitat</u> Good

Recommendation 10: Designation COLBY 20

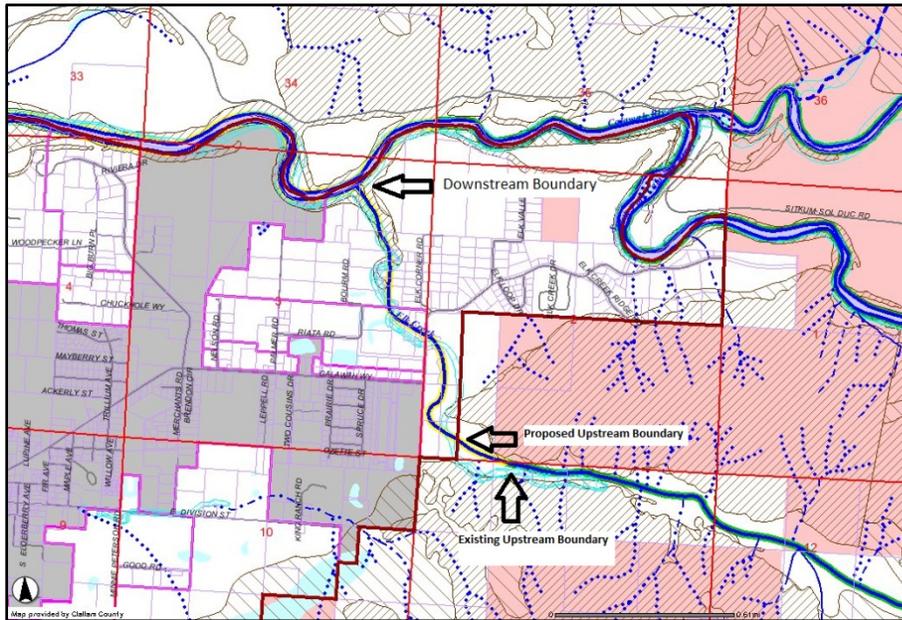
COLBY 20 is currently undesignated. It flows into a conservancy-designated reach of the Dickey System. This reach flows through an area that is almost entirely zoned for residential uses. Although located in a relatively accessible area, there are currently few residences. The condition of the riparian area is characterized as 73.3% closed canopy, 20.2% other natural vegetation, and 6.4% non-forest. Consideration should be given to designating this reach a “rural” environment.



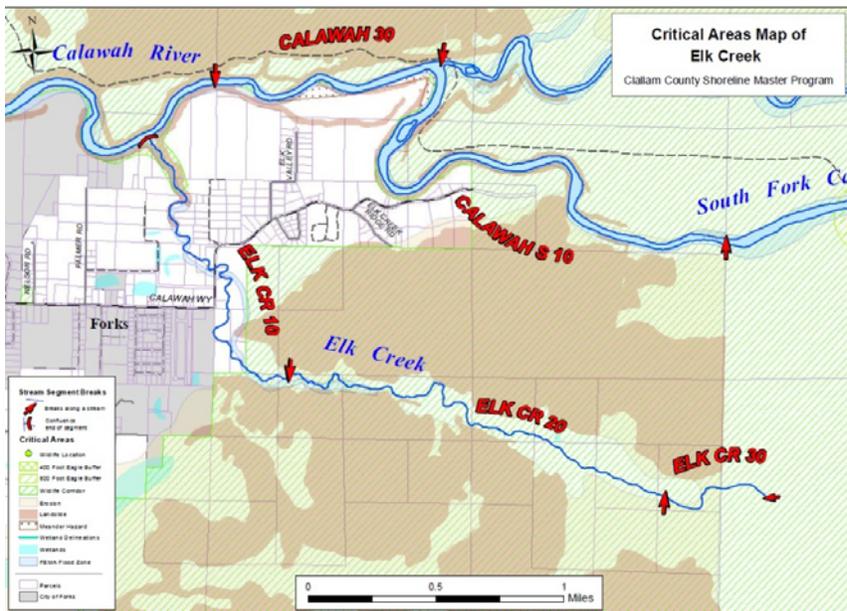


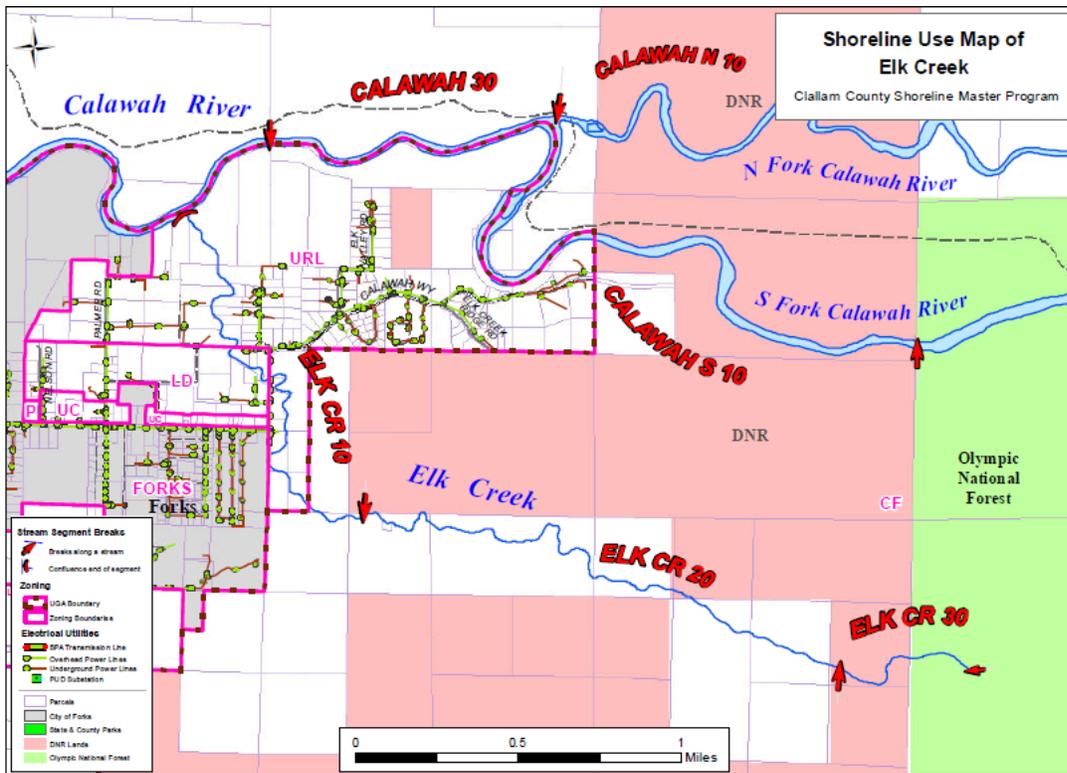
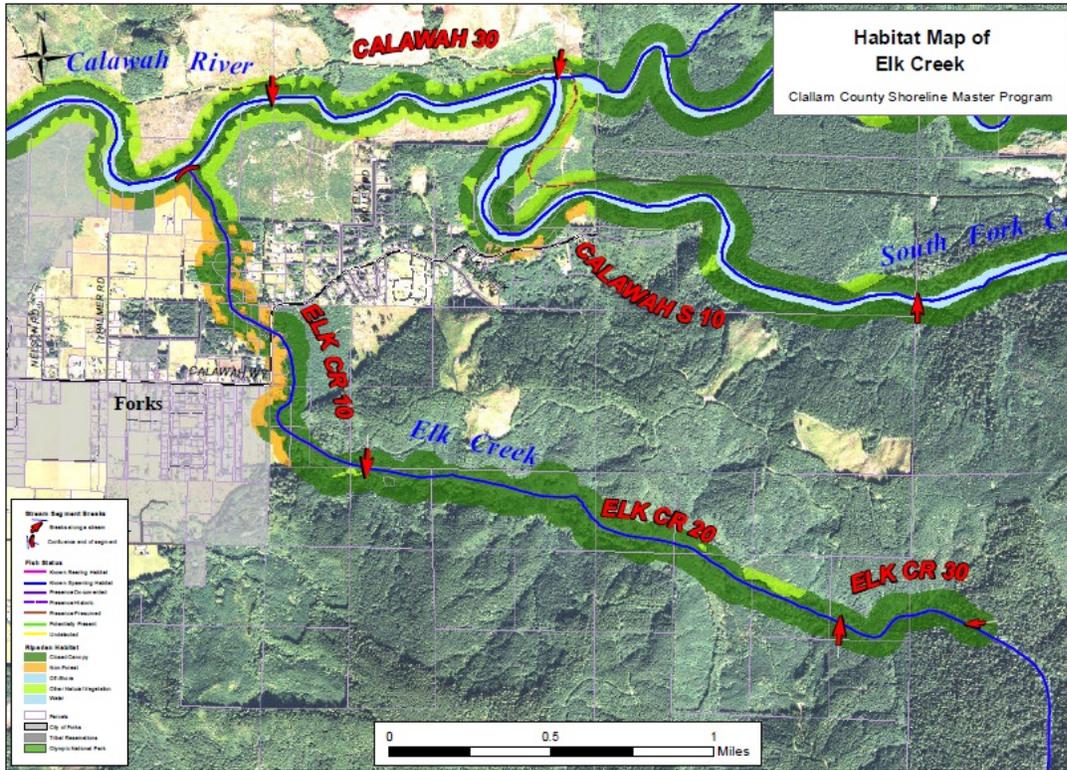
COLBY 20 Reach: RM 1.2-2.1		
Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	Landuse: CT throughout RW5 zoning throughout.	<u>Shoreline Uses</u>
Public Access	Access available through Mina Smith, Duncan and Wentworth Roads	
Utilities	A PUD primary overhead conductor line crosses COLBY 20 at RM 1.3 along Mina Smith Road. PUD primary overhead and underground conductor lines follow Mina Smith, Duncan and Wentworth Roads.	
<u>Hydrologic</u> Water Quality Sediment Transport	Landslide zone: RM 1.4-1.6, 1.8-1.9, 2.0-2.1 100 year floodplain—RM 1.2-1.7 No 303(d) listings	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	73.3% closed canopy, 20.2% other natural vegetation, and 6.4% non-forest	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage	Fall Chinook, coho and winter steelhead spawn from RM 1.2-2.1; Fall chum are documented throughout the reach. Fall Chinook and fall chum have an unknown stock status. Spring and summer Chinook, sockeye and summer steelhead stock status is undocumented. Coho and winter steelhead have a healthy stock status. (SASI, 2004)	<u>Habitat</u> Good

Recommendation 11: Designation and Boundary Change ELK 10



This reach flows through the Forks UGA and is currently assigned rural designation. Recent work by the Wild Salmon Center indicated that Elk Creek provides extremely valuable habitat for Calawah coho spawning and rearing, with 30% of the total coho production originating there. The Wild Salmon Center proposed moving the upstream boundary to the UGA boundary and assigning the reach “conservancy” environment status. While the boundary change was supported, strong local opposition was registered in relation to the designation change. Residents also questioned the accuracy of the WSC study. The reach’s location within the Forks UGA indicates that residential development is appropriate. *Thus, this reach should be assigned a new designation suitable for growth and sufficient protection.*

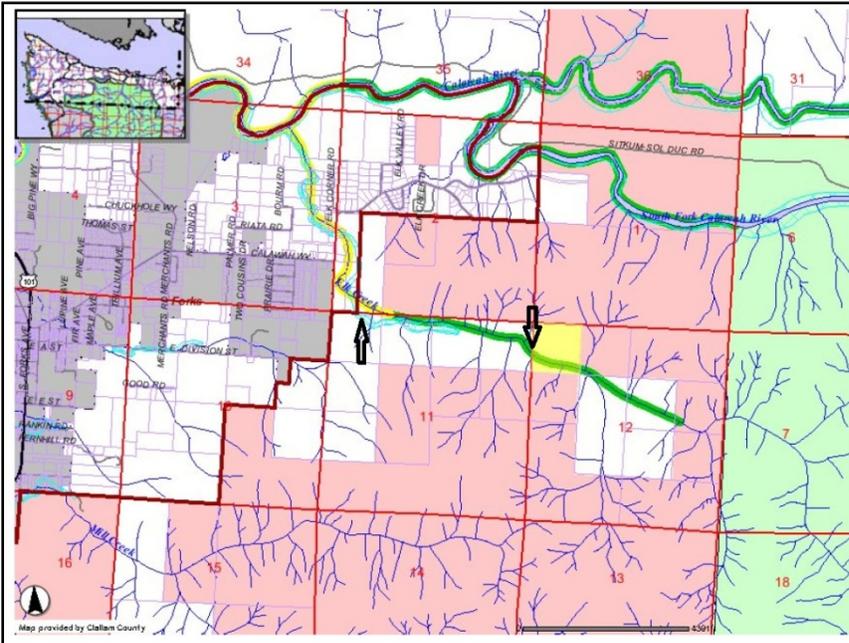




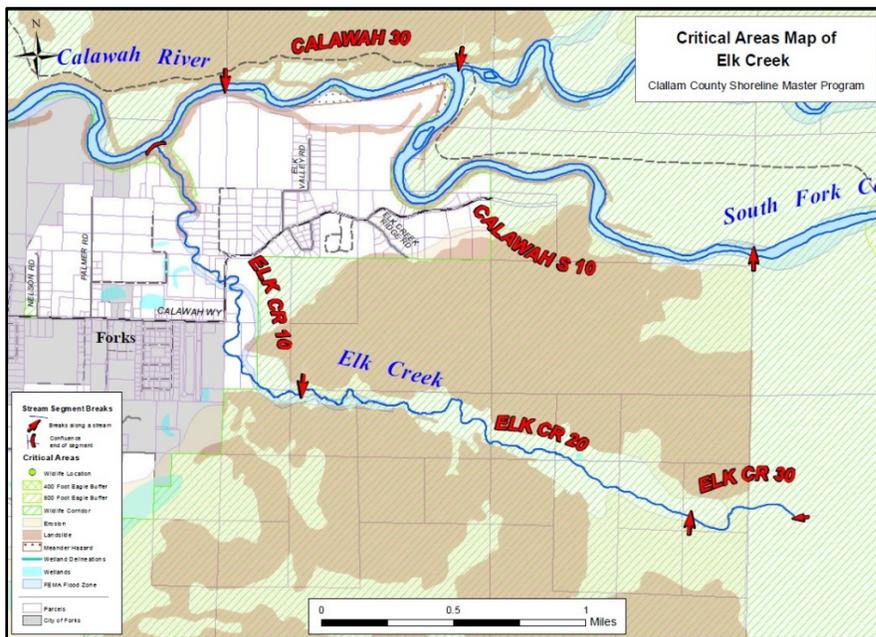
ELK 10 Reach: RM 0 - 1.6
FUGA: RM 0- 1.4

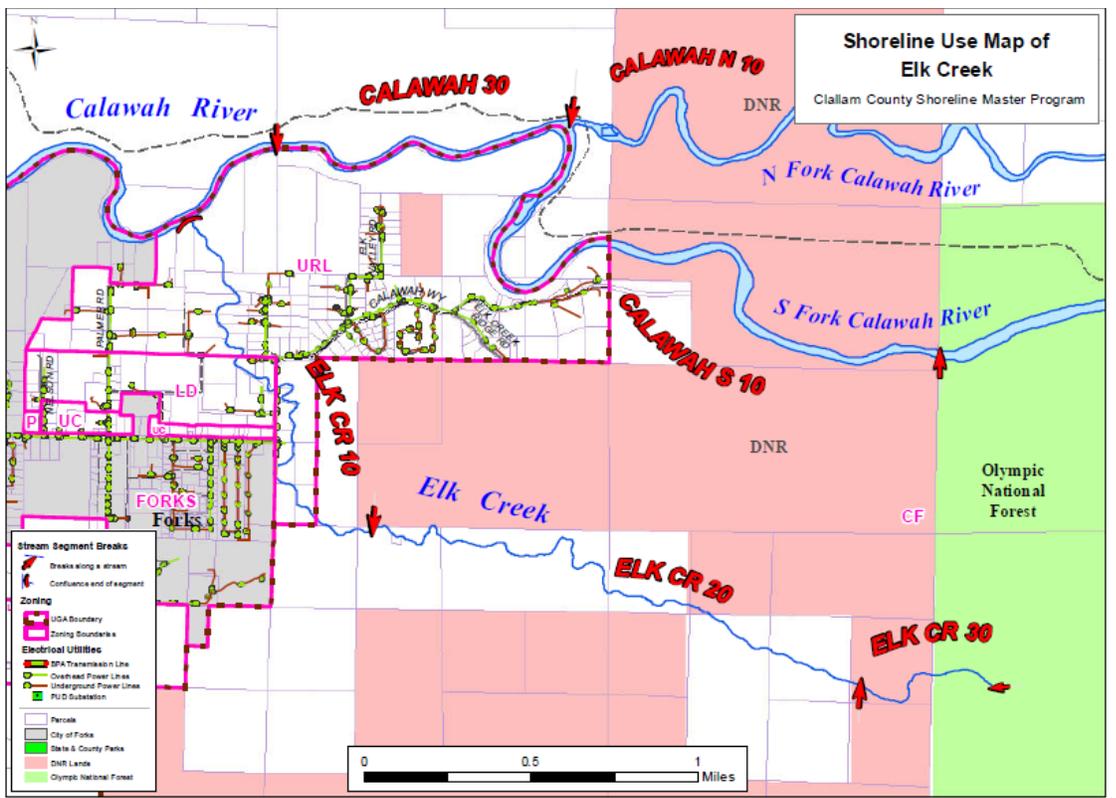
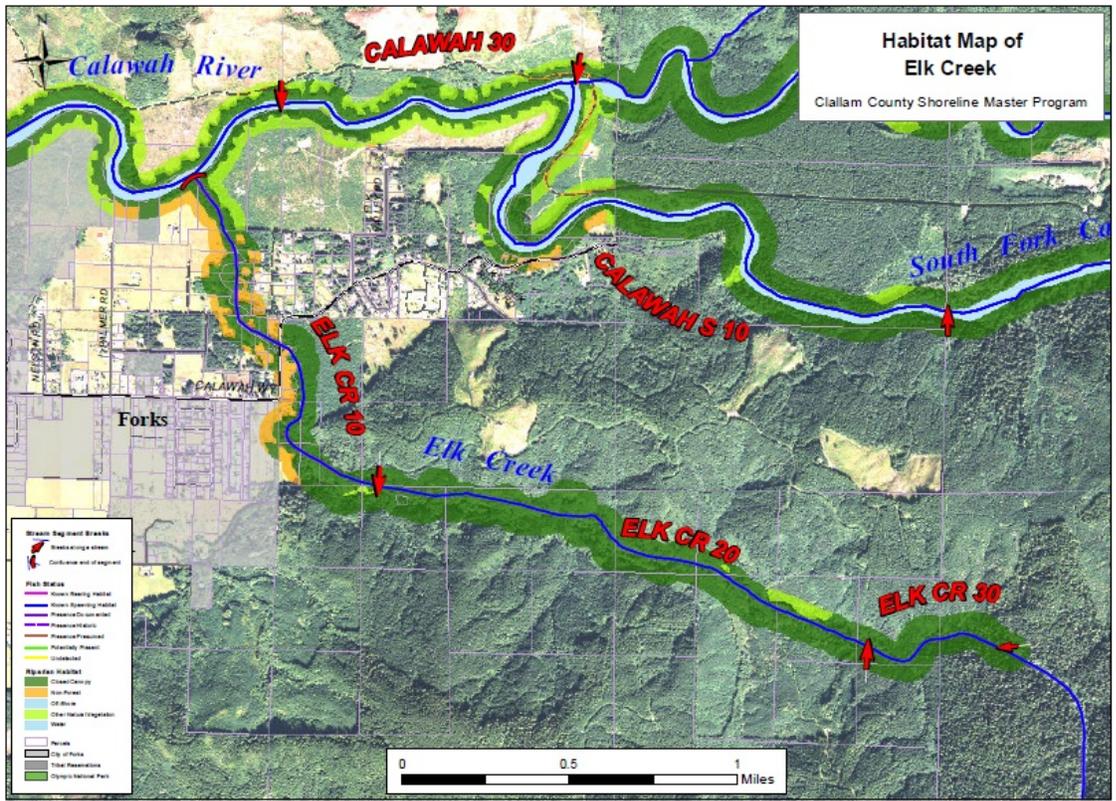
Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	ELK 10 flows through the FUGA RM 0- 1.4; RM 1.4- 1.6 of reach outside FUGA Land use: East shoreline CT; zoning URL West shoreline R; zoning URL, LD and P DNR lands borders east shoreline at RM 1.6	<u>Shoreline Uses</u> Most of segment wholly in the UGA
Public Access	Most of the reach is in private land, but it can be accessed through the state owned timber (RM 1.6)	
Utilities	Underground conductor lines approach the riparian zone between RM .5 and 1; overhead conductor line crosses ELK 10 on Calawah Way at RM .9	
<u>Hydrologic</u> Water Quality Sediment Transport	No (303)d listings Floodway: RM .3-4, .5-.6, 1.4-1.6 100-year Floodplain: RM .3, .9-1.3 (on east side of ELK 10, on UGA boundary), 1.4-1.6 Landslide hazard zone—RM 0-0.2 Erosion hazard zone—around RM 1.5 No known ratings	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	ELK 10: 88.5% closed canopy; 3.8% other natural vegetation; 7.7% Non-forest No known ratings	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage	Riparian roads impact ELK 10 between RM 1-1.6, affecting coho, steelhead and fall Chinook; Fall Chinook spawn around RM 1 and rear from RM 0-.8 and RM 1.1-1.6; winter steelhead spawn throughout the reach; summer steelhead are documented throughout. Habitat rating is “fair” from RM 1-1.6 due to riparian road impact, but fall Chinook, coho and winter steelhead all have healthy stock status ratings; summer steelhead status is unknown. WSC Study: reported extremely valuable coho habitat present (33% of Calawah coho redds); local residents question the accuracy of WSC studies	<u>Habitat</u> Good

Recommendation 12: Boundary and Designation Change ELK 20



This reach is currently designated a “conservancy” environment. The Wild Salmon Center submitted information pointing to the extremely high value of habitat in this area. Its forested shorelines have old growth characteristics and there are no residences along this segment. The area was acquired for conservation purposes by the North Olympic Land Trust. However, the City of Forks maintains an important water supply structure in this segment. Local support was voiced for modification of the downstream reach break (currently RM 1.6) to coincide with the Forks UGA boundary (RM 1.4). *Scientific studies support and no opposition was registered to assigning this reach natural designation.*

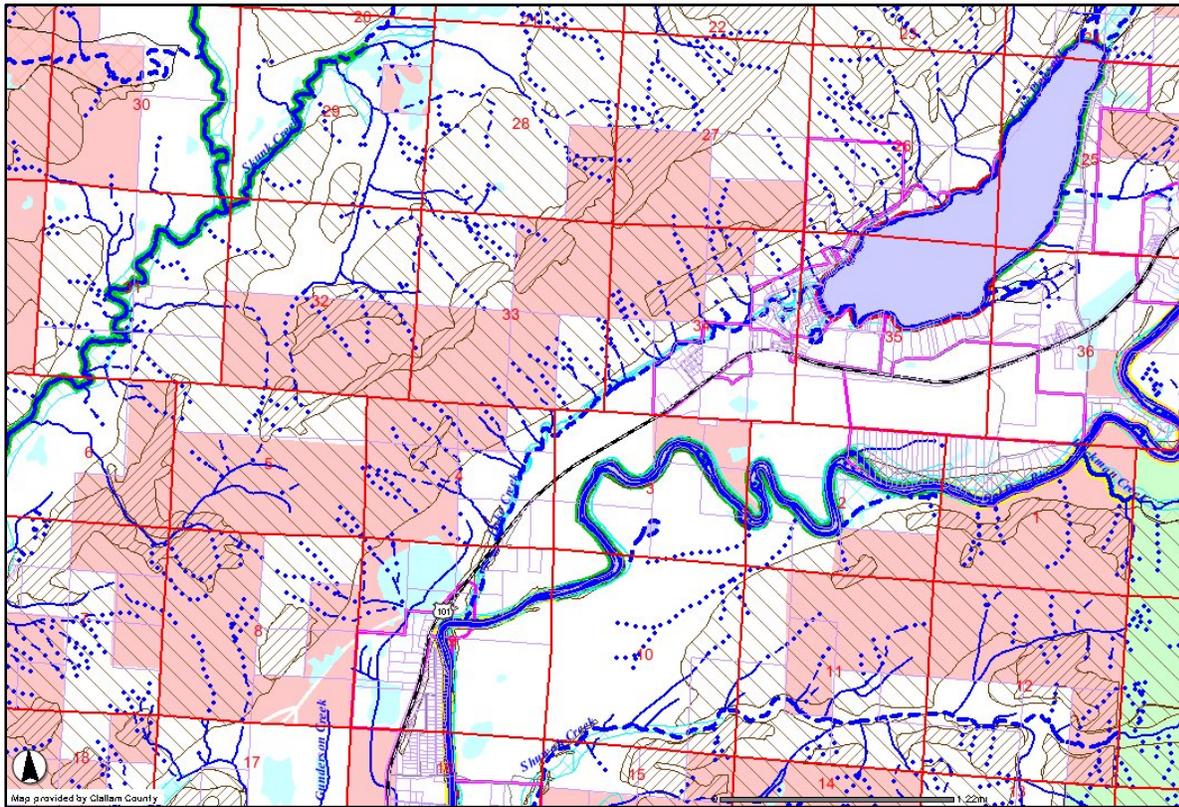




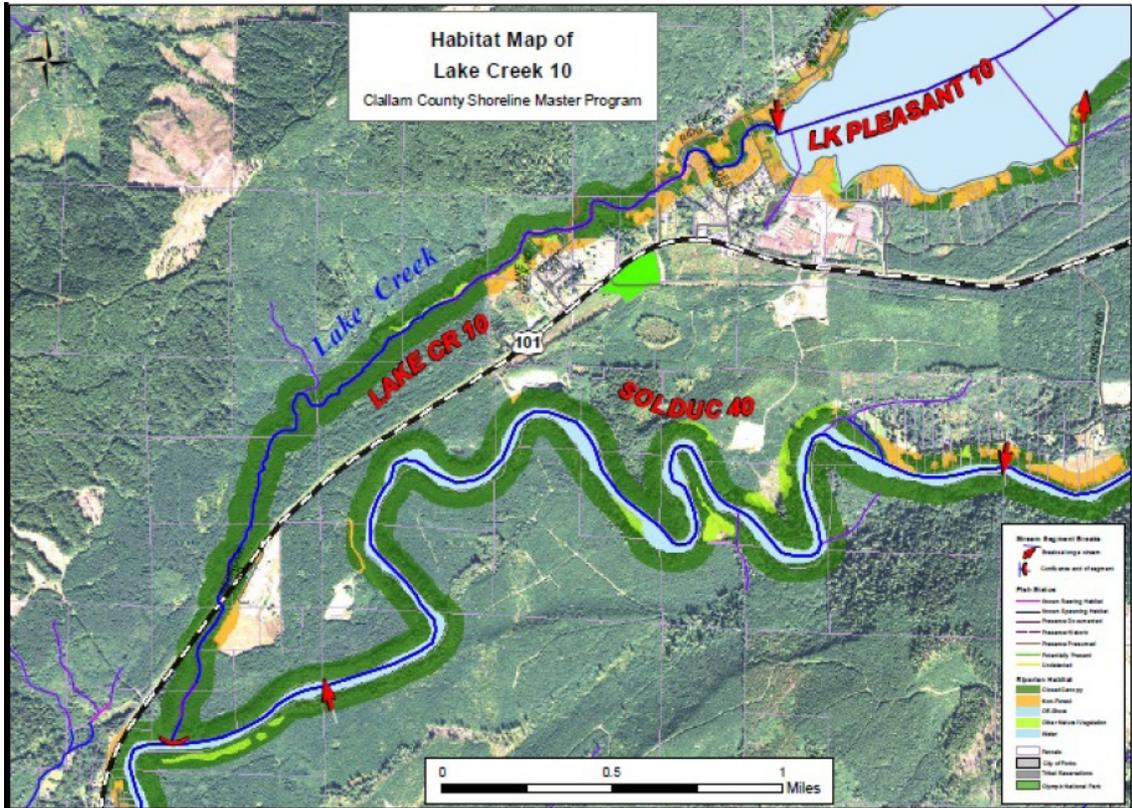
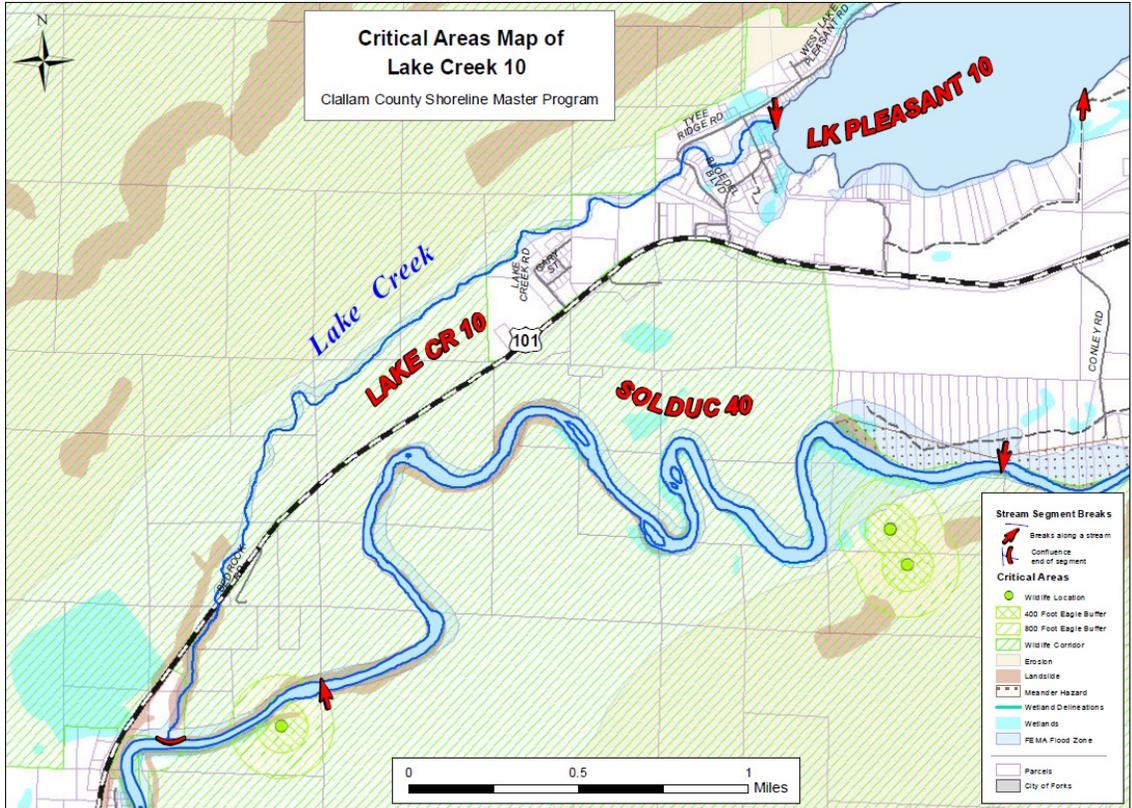
ELK 20 Reach: RM 1.6-3.5

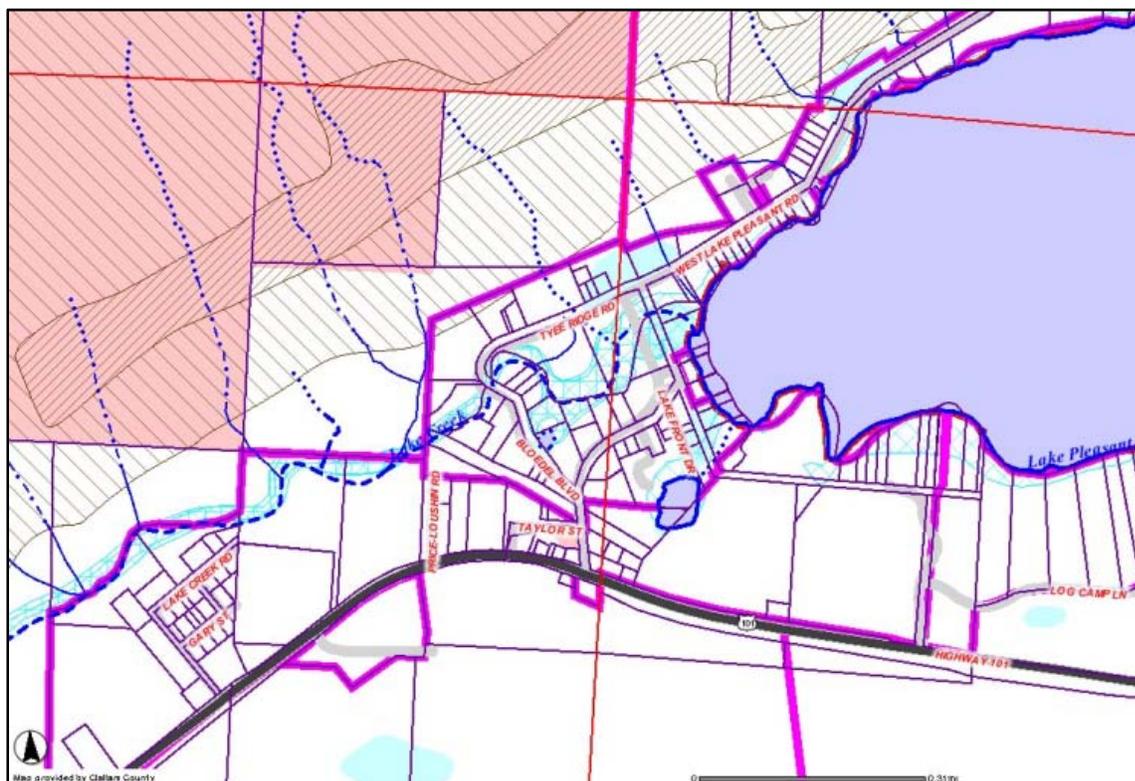
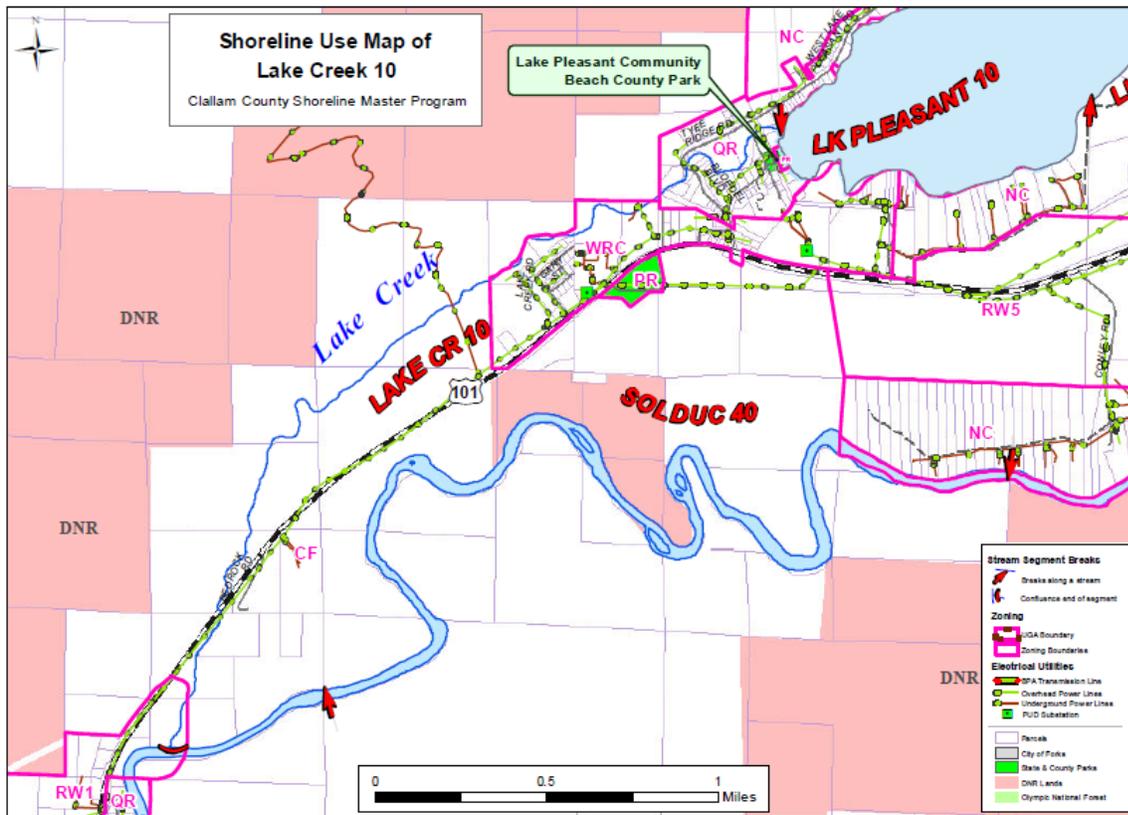
Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<p><u>Shoreline Uses</u> Land Use & Zoning</p> <p>Public Access</p> <p>Utilities</p>	<p>Almost entirely in private commercial timber production; some state timber approaches the reach at RM 1.7 and 2.9 Water supply intake for City of Forks</p> <p>Conservation land acquisition project maintained by North Olympic Land Trust</p> <p>No utilities</p>	<p><u>Shoreline Uses</u> Much of reach owned by Land Trust and dedicated to conservation purpose</p> <p>Potential access opportunity</p>
<p><u>Hydrologic</u> Water Quality Sediment Transport</p>	<p>No 303(d) listings. Floodway: RM 1.6-2 100-year floodplain: RM 1.6-2 (south shore only) Erosion hazard from RM 1.8-2 (south shore only) Landslide hazard from RM 1.9-2.1 and at RM 2.5. WSC: Good condition w/ LWD, pools alternating with shallow gravel, w/ refugia, buried logs; cooled and fed by underground water</p>	<p><u>Hydrologic</u> Good</p>
<p><u>Vegetative</u> Temperature LWD Sediment Transport</p>	<p>ELK 20: 97.8% closed canopy; 2.2% other natural vegetation. Recent assessment by WSC highly productive; naturally reseeded multi-storied canopy with old snags resembling old growth on valley floor WSC: All attributes of excellent spawning and rearing habitat allows coho juvenile to thrive until fall water levels connect pools to main channel</p>	<p><u>Vegetative</u> Good</p>
<p><u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage</p>	<p>Riparian roads impact ELK 20 from RM 1.6-3.5, affecting coho and steelhead</p> <p>Coho and winter steelhead spawn throughout reach; summer steelhead are documented throughout; Coho and winter steelhead all have healthy stock status ratings; Summer steelhead status is unknown.</p> <p>WSC: Extremely important spawning habitat (for 30% of Calawah coho) in Elk Creek Habitat rating is "fair" from RM 1-1.6 due to riparian road impact</p>	<p><u>Habitat</u> Good</p>

Recommendation 13: Designation of LAKE CR 10



This reach is currently undesignated and contains a long segment of uninhabited forestlands (RM 0-1.9) and a stretch of very dense residential development (RM 1.9-3.1) along the south shoreline. The north shoreline is forest lands throughout. Lake Creek represents extremely productive Fall Chinook spawning habitat—where some of the highest spawner counts per mile have been observed in the state. In addition, sockeye spawning occurs in the upper portion of this reach. Water quality issues have been identified that may be linked to water withdrawals and failing septic systems. *Consideration should be given to assigning conservancy designation to the downstream segment and rural designation to the upstream segment. As an alternative, the presence of high density rural residential zoning may necessitate consideration of a new designation that allows both growth and sufficient protection.*



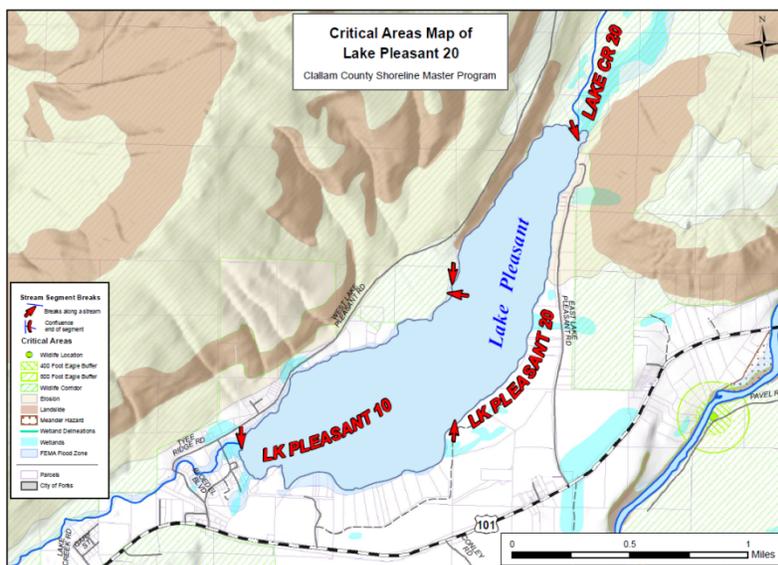
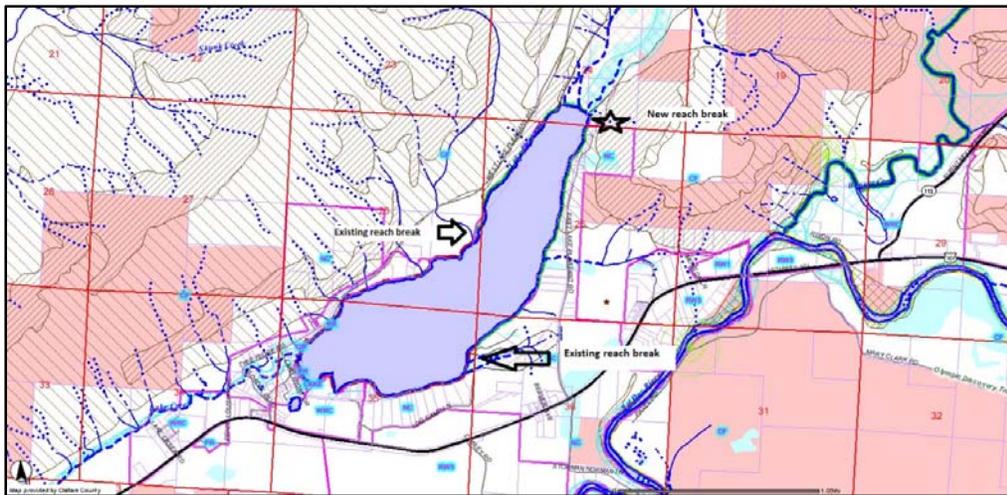


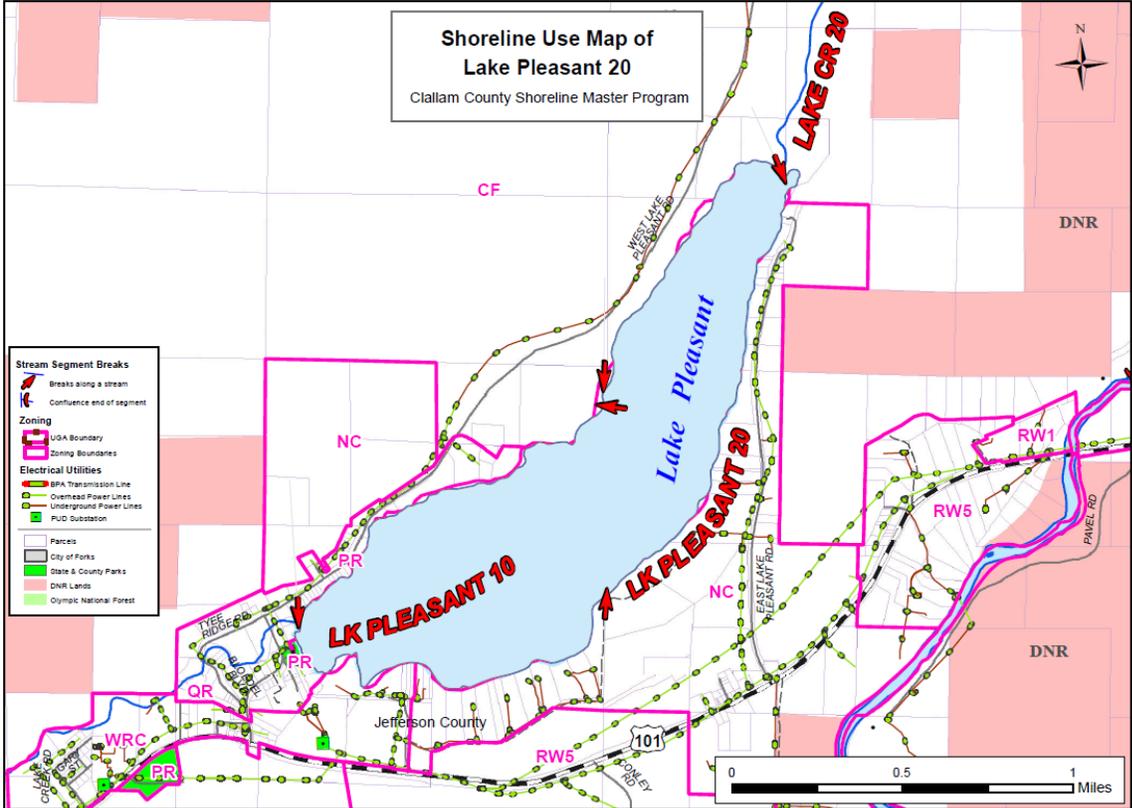
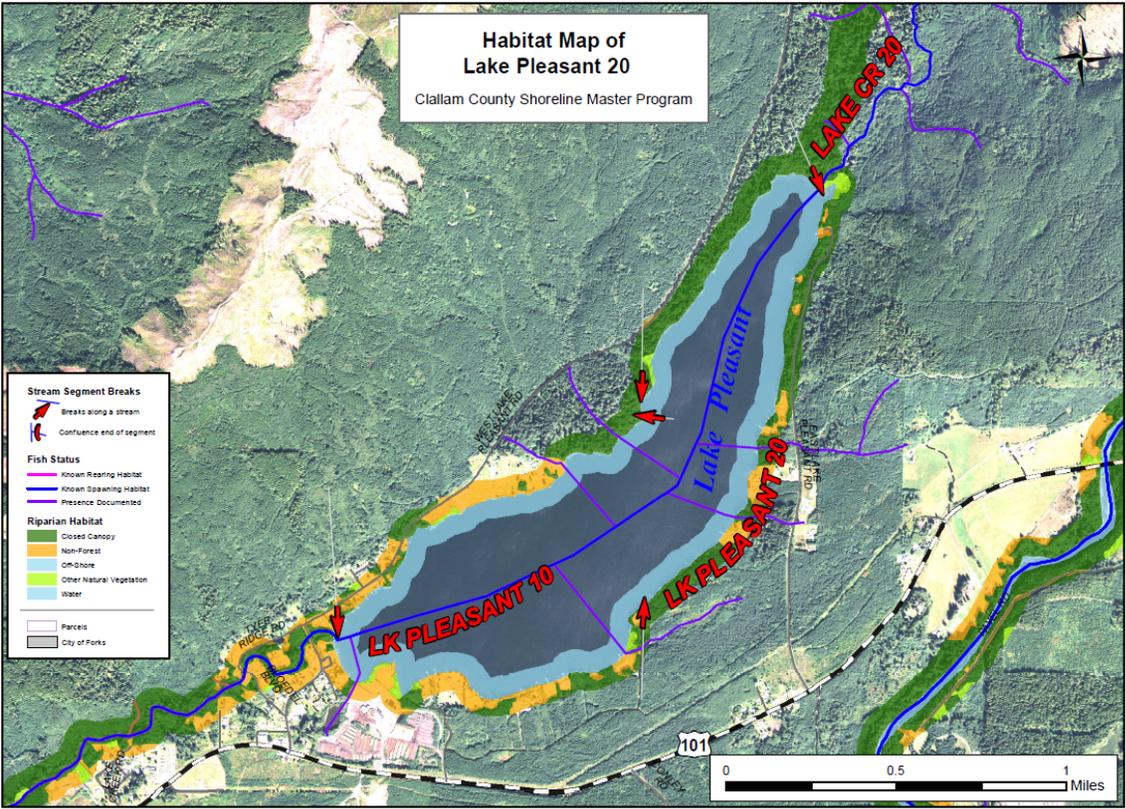
LAKE CR-SOL DUC 10 Reach: RM 0- 3.1

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	Land use – both shores CT from RM 0 to 1.9; East shoreline: R from RM 1.9 – 3.1 with CT block RM 2.2-2.3 West shoreline: V & CT from RM 0 - 2.5; R from RM 2.5-3.1 Zoning: East shoreline: All WRC & QR from RM 1.9 – 3.1 West shoreline: All CF except WRC & QR from RM 2.2-3.1	<u>Shoreline Uses</u> West side forestlands; east side unpopulated except near Lake
Public Access	No current access sites and all private lands except near mouth where county waste transfer station and equipment storage site	
Utilities	4 primary overhead conductors from RM 1.9 serve the trailer park along 101 and residences southwest of the lake Underground conductors cross creek at RM 2 (towards Tye Ridge) and RM 2.4	
<u>Hydrologic</u> Water Quality Sediment Transport	Dissolved Oxygen (DO) listed RM .3 -3.1 High flow volume and velocity during fall, low flows in spring/summer; sections dry up naturally; Extensive areas of coarse gravels Erosion hazard area to the west between RM 1-2 Problems may be related to natural low flows and human withdrawals	<u>Hydrologic</u> Fair near Lk Pleasant; Good in remaining segment
<u>Vegetative</u> Temperature LWD Sediment Transport	LAKE-SOL DUC 10: 86.6% closed canopy; 0.9% other natural vegetation; Non-forest 12.5%. Riparian condition rated “fair” “Poor” LWD conditions/Reported jams from historic mill operations; Higher temperatures in upper portion from lake effect and wetlands; LWD improvements needed	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage	Extremely high density fall Chinook spawning Sockeye spawn near the lake outlet Winter steelhead and coho spawning limited due to low flow conditions; chum and summer Chinook documented in this reach (SASSI 204)	<u>Habitat</u> Good

Recommendation 14: Designation of LK PLEASANT 20

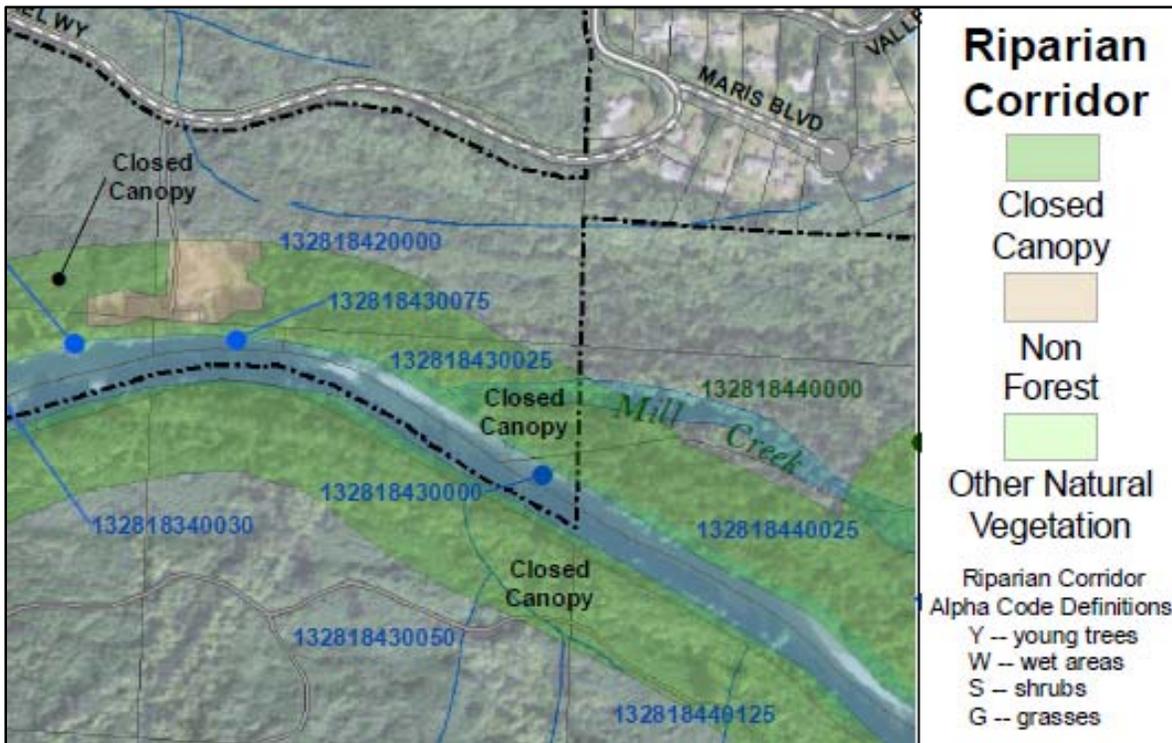
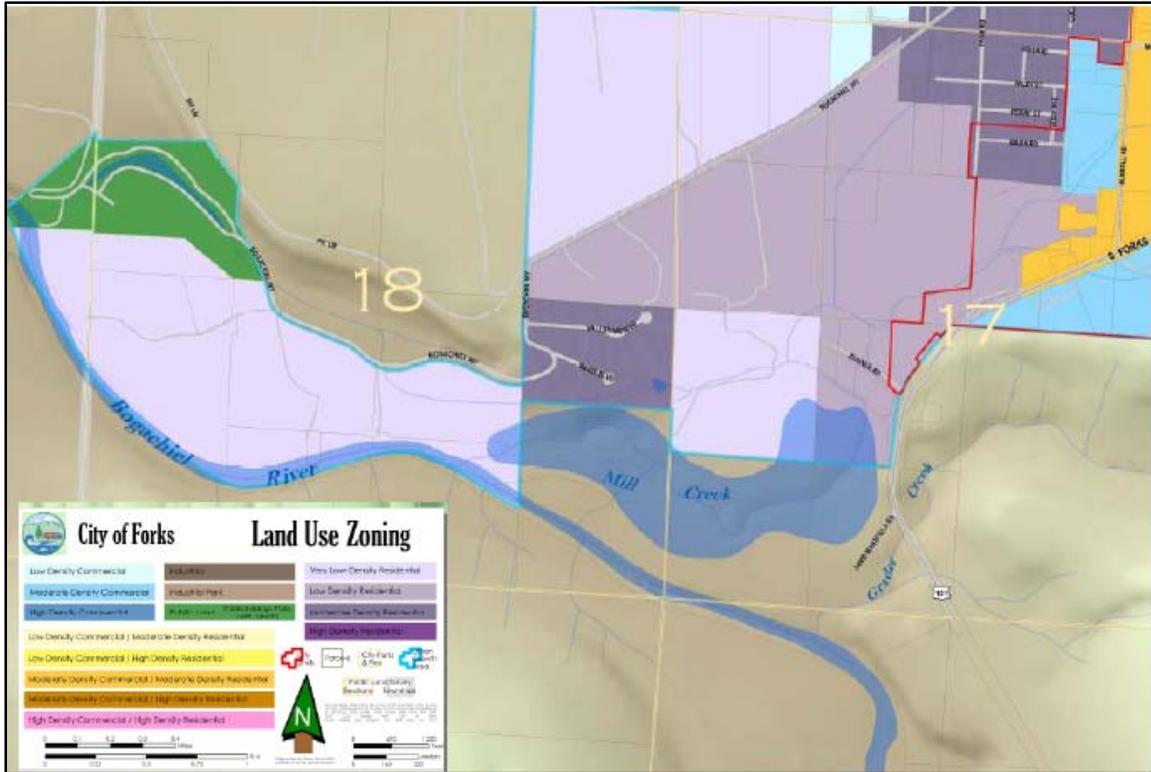
LK PLEASANT 20 is currently designated as a “conservancy” environment. It contains a long segment of uninhabited forestlands along the Lake’s western shoreline and a continuous stretch of light residential development along its eastern shoreline. The western segment of this reach is similar to other conservancy reaches that flow through commercial forestlands with no residentially zoned parcels. However, potential residential expansion in the eastern portion supports the need to reevaluate the current conservancy designation. The presence of beach-spawning sockeye in this reach justifies an approach that affords adequate protection to its unique biological resources. *Consideration should be given to retaining conservancy designation in the western segment (LK PLEASANT 25) to include the wetlands along the northern end of the Lake. A new designation that allows both growth and sufficient protection should be considered in the eastern segment (LK PLEASANT 20).*

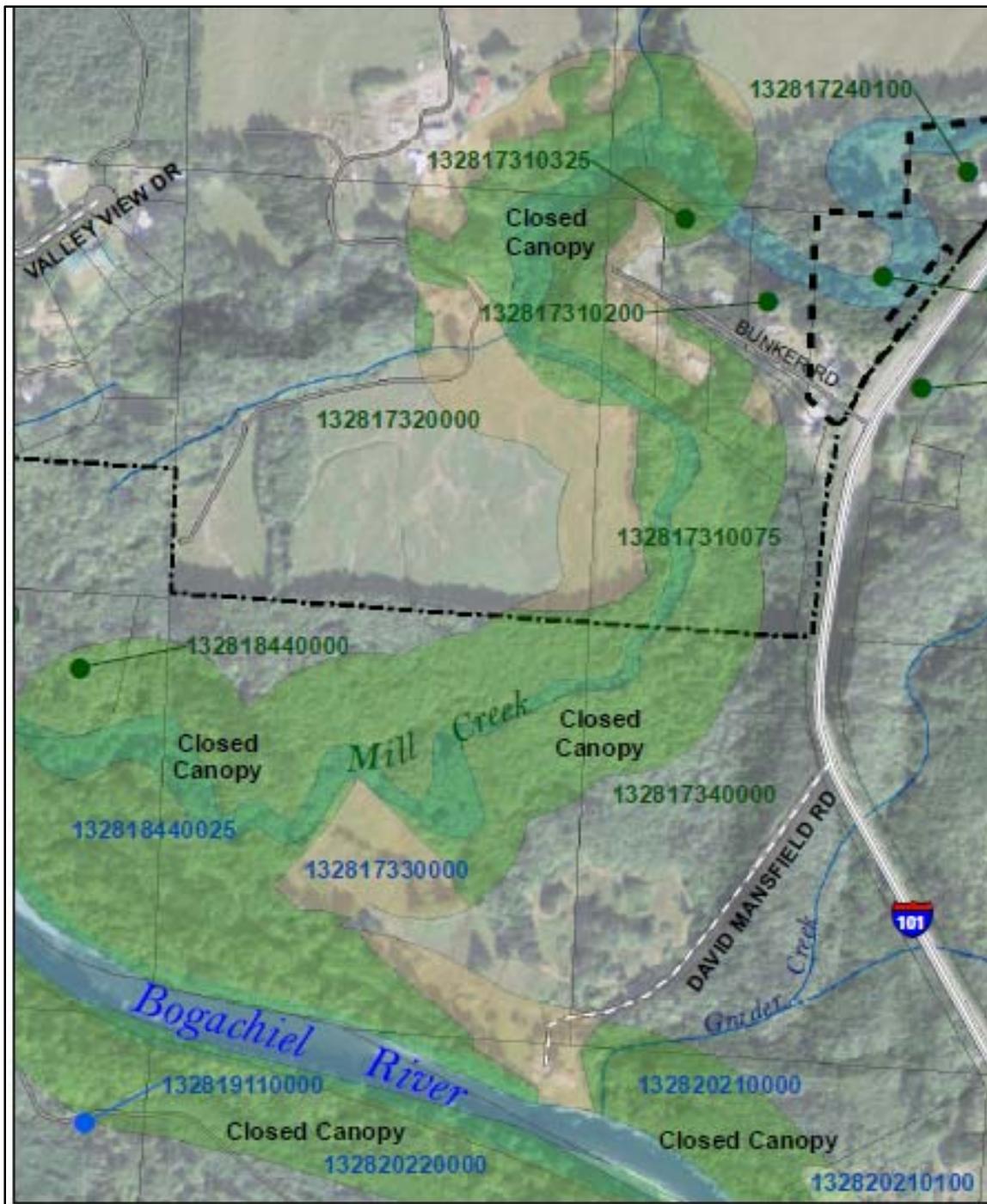




LK PLEASANT 20 Reach

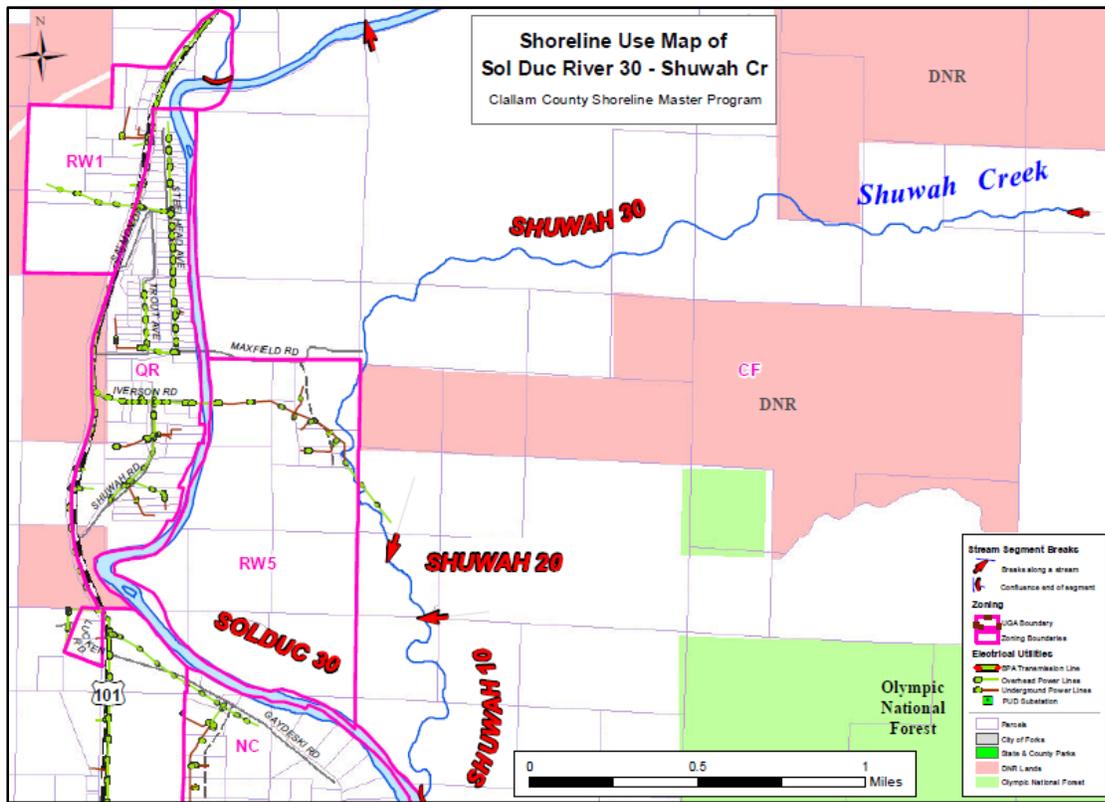
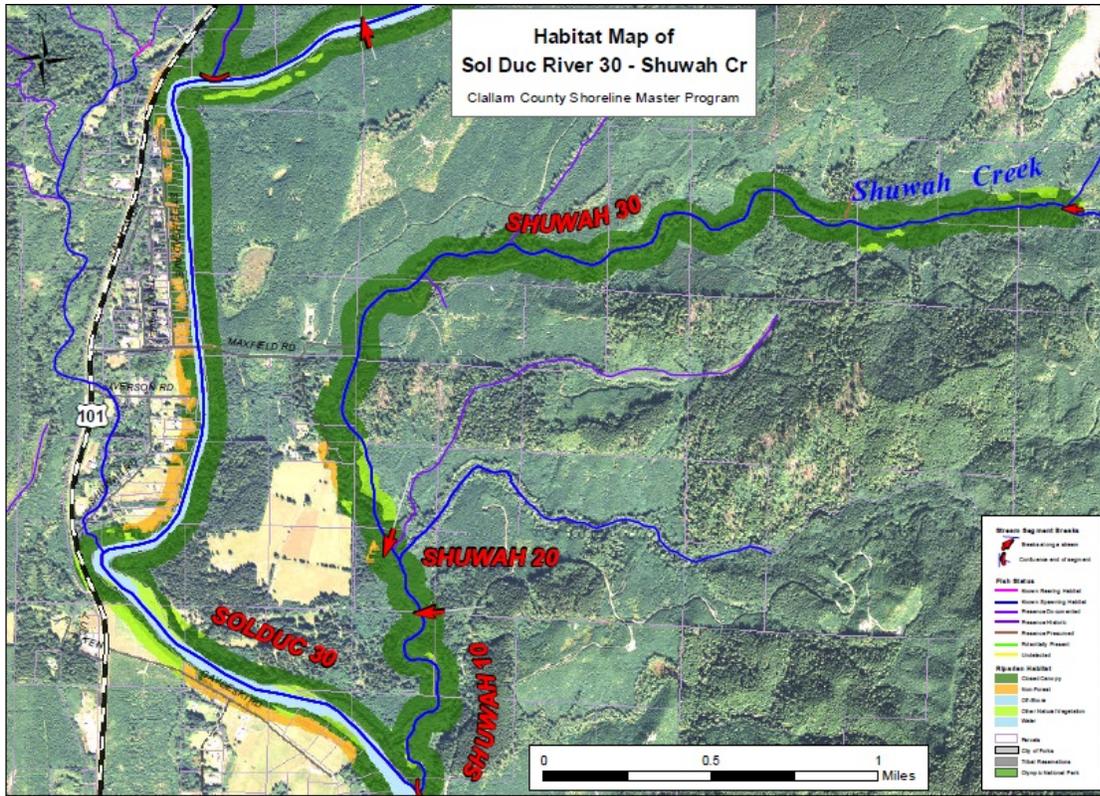
Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning Public Access Utilities	Land use: Almost all on west side in CT; all of east side in residential Zoned: West shore in CT; east shore in NC No current public access or public lands Overhead conductor on east shoreline Underground conductors on east and west shorelines	<u>Shoreline Uses</u> East portion area of residential development; west portion in commercial forestry
<u>Hydrologic</u> Water Quality Sediment Transport	No 303(d) listing, but reports of seasonal temperature exceedance probably related to natural lack of shade Erosion hazard area along east portion; landslide hazard along west portion; seismic soils at north end Extensive wetlands complex at north end Lake acts as natural sediment trap	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	LK-PLEASANT 20: 92.4% closed canopy; 1.7% other natural vegetation; 6% non-forest. No riparian condition rating Additional LWD projects may be helpful	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage	Winter steelhead, coho, sockeye present No summer or fall Chinook, steelhead, chum Important rearing habitat for sockeye, kokanee, and coho salmon Sockeye spawn along the beach in the eastern portion Pilings & boomsticks installed for habitat enhancement and restoration Extremely valuable sockeye spawning habitat on east side; sockeye run considered healthy	<u>Habitat</u>





MILL Reach: RM 0 – 1.3

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning	Land use: CT (outside FUGA) and CT + R (inside FUGA) Zoning: RW5 (outside FUGA) and URL (inside FUGA)	
Public Access	Private ownership throughout	No known opportunities
Utilities	Overhead conductor at RM 1.3	
<u>Hydrologic</u> Water Quality Sediment Transport	Very wide floodplain at mouth Potential associated wetlands in FUGA (RM .9- 1.2) and outside FUGA (RM.1-.2)	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	MILL: 91.8% closed canopy; 8.2% Non forest. LWD and riparian condition not rated	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Spawning Overwintering Blockage	Coho, fall Chinook, fall chum spawning No sockeye, spring or summer Chinook Summer steelhead present but no spawning Winter steelhead spawning and rearing RM 0-.9; spawning .9-1.3	<u>Habitat</u> Good



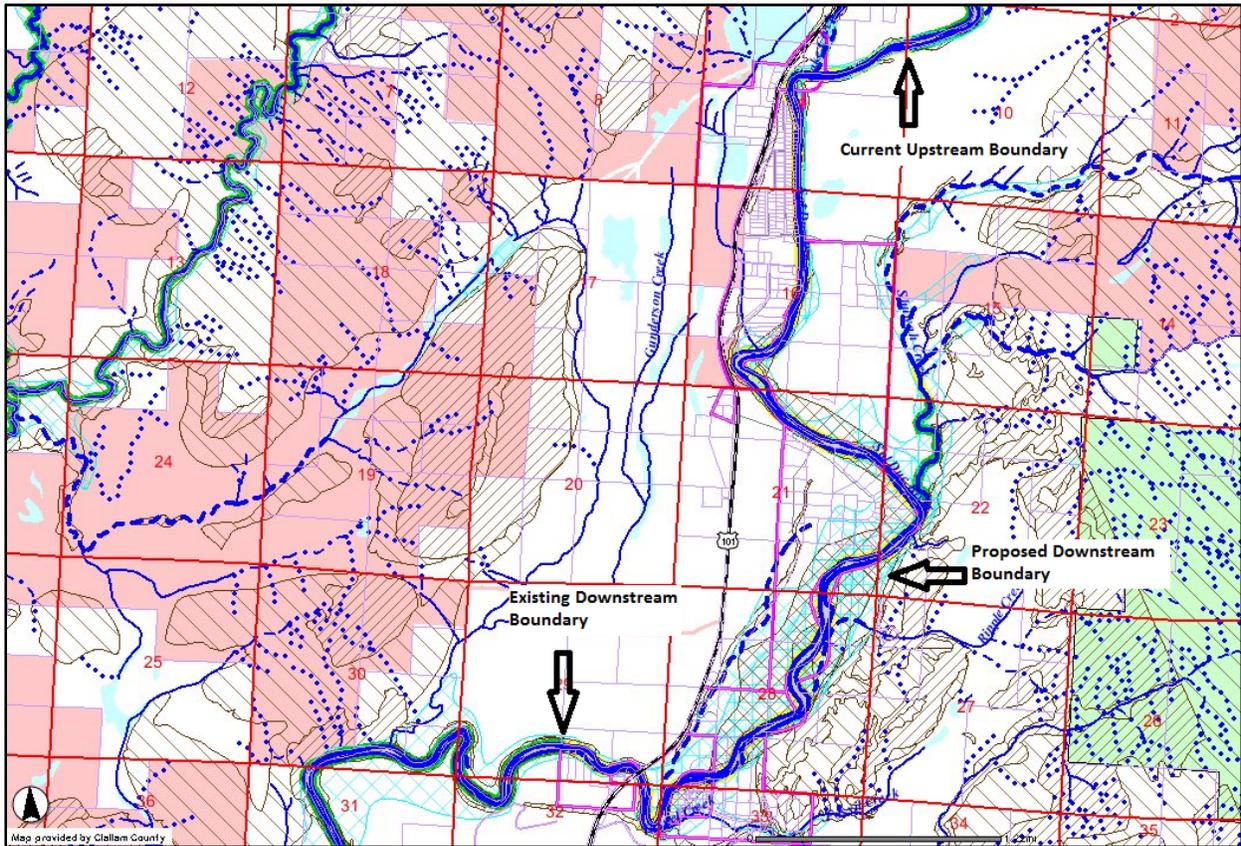
SHUWAH 20 Reach: RM .7- 1.1

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<u>Shoreline Uses</u> Land Use & Zoning Public Access Utilities	Southeast shore: Land use all R; Zoning all CF Northwest Shore: Land use all R; Zoning all CF All adjacent lands are private PUD primary overhead conductor RM 1.1 southeast shore	
<u>Hydrologic</u> Water Quality Sediment Transport	Wide channel and floodplain throughout reach; channel stability rated "poor;" No 303(d) listing Pool habitat rated "poor" Low flows in summer	<u>Hydrologic</u> Good
<u>Vegetative</u> Temperature LWD Sediment Transport	SHUWAH 20: 99.9% closed canopy; 0.1% non-forest; Hydrologic maturity rated "good" Riparian condition rated "fair" throughout reach LWD rated "poor" throughout Elevated sediment from logging reported	<u>Vegetative</u> Good
<u>Habitat</u> Physical space and condition Spawning Overwintering Blockage	High value off-channel habitat All species present except summer steelhead, spring and summer Chinook, sockeye and chum Winter steelhead, fall coho, and fall Chinook spawning habitat throughout	<u>Habitat</u> Good

SHUWAH 30 Reach: RM 1.1- 4.5

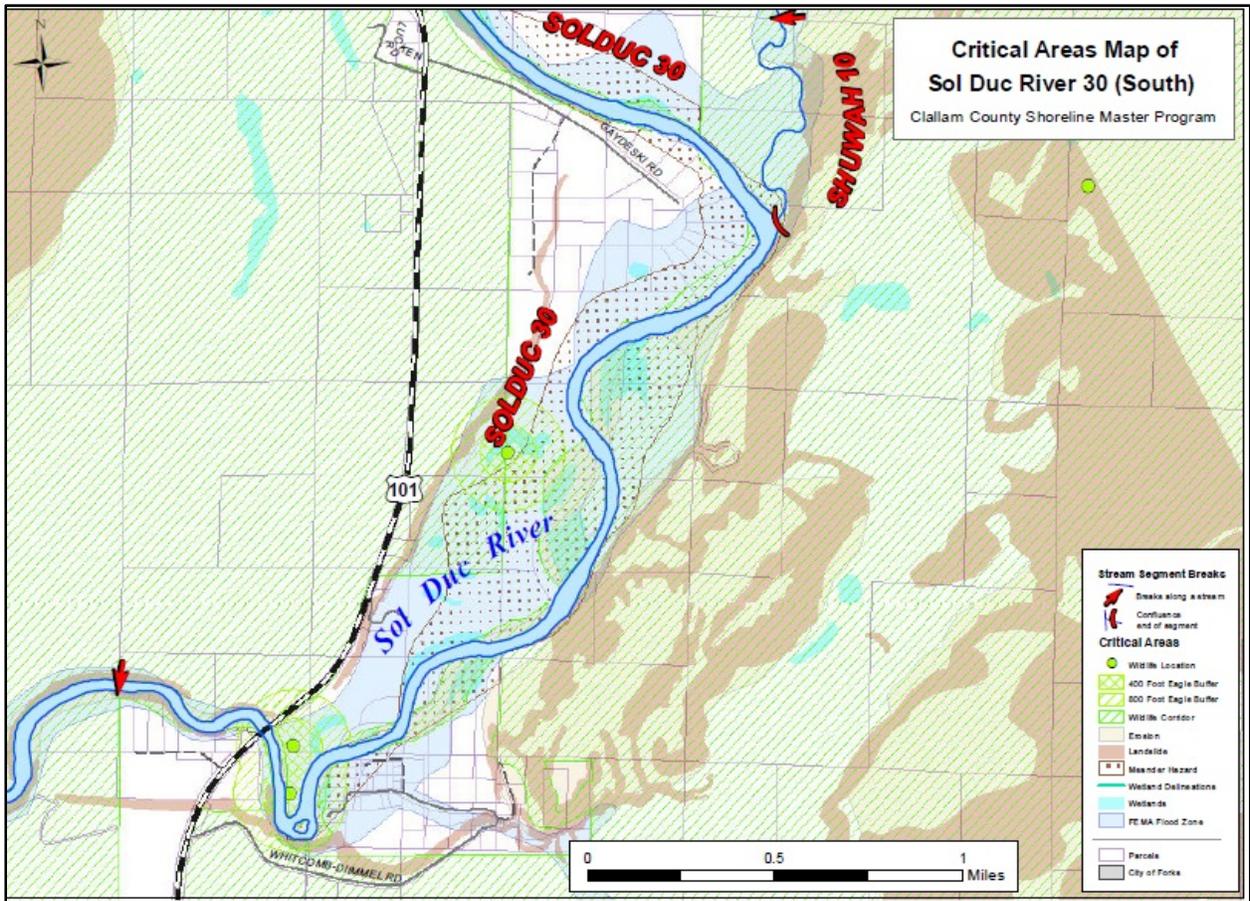
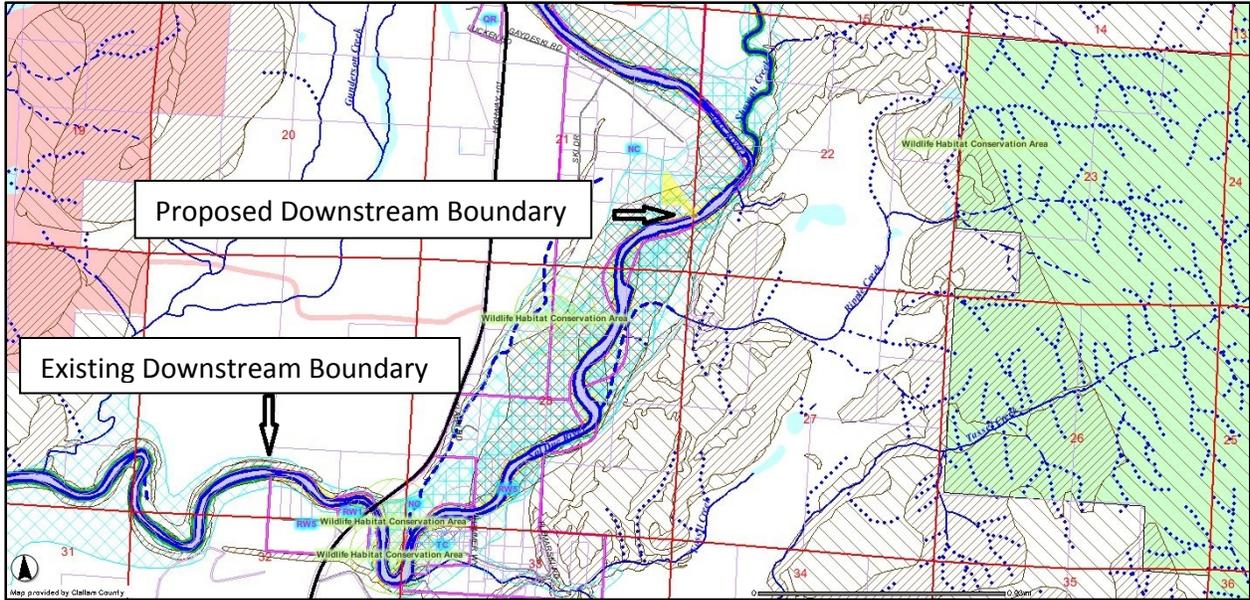
Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<p><u>Shoreline Uses</u> Land Use & Zoning</p>	<p>Land use and zoning: all CT/CF except R/RW5 blocks in RM 1.1- 1.8</p>	<p><u>Shoreline Uses</u> Forestlands</p>
<p>Public Access</p>	<p>Adjacent lands are private, but because most are commercial forest lands access is available Public lands (DNR blocks) at RM 1.6-1.8 (near Maxfield Rd) and at RM 3.5 – 3.7</p>	<p>Potential public access opportunity</p>
<p>Utilities</p>	<p>PUD primary overhead conductor RM 1.1-1.5 crosses from southeast shore to northwest shore PUD primary underground conductor RM 1.6</p>	
<p><u>Hydrologic</u> Water Quality Sediment Transport</p>	<p>Channel widening reported; channel stability rated “poor;” Wide floodplain between RM 1.1-3 No 303(d) listing Erosion hazard area RM 2.7 -4.5 (north shore) and RM 3.3- 4.3 (south shoreline); Landslide hazard area RM 2.5 – 3.2 (south shoreline) Pool habitat rated “poor” Low flows in summer</p>	<p><u>Hydrologic</u> Good</p>
<p><u>Vegetative</u> Temperature LWD Sediment Transport</p>	<p>SHUWAH 30: 96.9% closed canopy; 2.4% other natural vegetation; 0.7% non-forest Hydrologic maturity rated “good;” riparian condition rated “fair” RM 1.1- 3 and “poor” RM 3-4.5; LWD rated “poor” throughout Elevated sediment from logging reported LWD assessment high priority in Quileute restoration plan & proposed in 2010 strategy; LWD supplementation project proposed in 2011 Strategy: need more information rated</p>	<p><u>Vegetative</u> Good</p>
<p><u>Habitat</u> Physical space and condition Spawning Overwintering Blockage</p>	<p>High value off-channel habitat Culvert replacement proposed 2010 under B2100 Rd All species present except summer steelhead, spring and summer Chinook, chum and sockeye Winter steelhead and fall coho spawning habitat throughout Fall Chinook spawning up to RM 4</p>	<p><u>Habitat</u> Good</p>

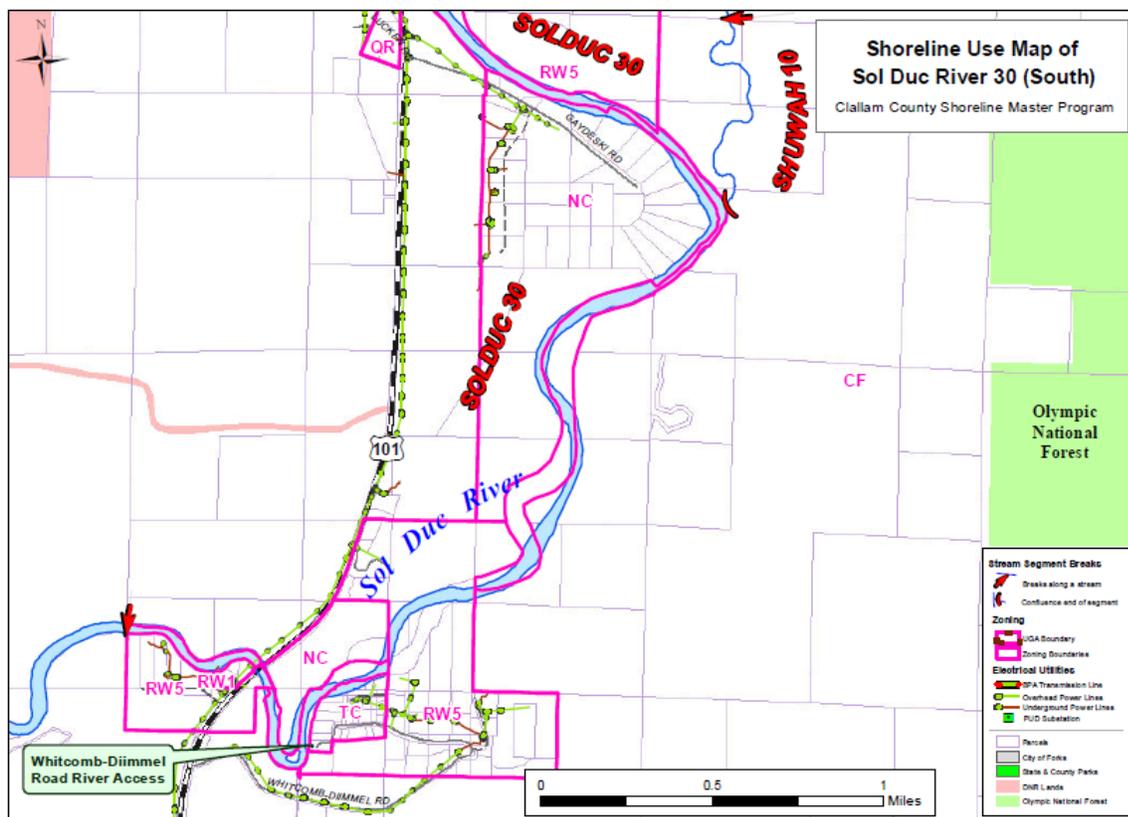
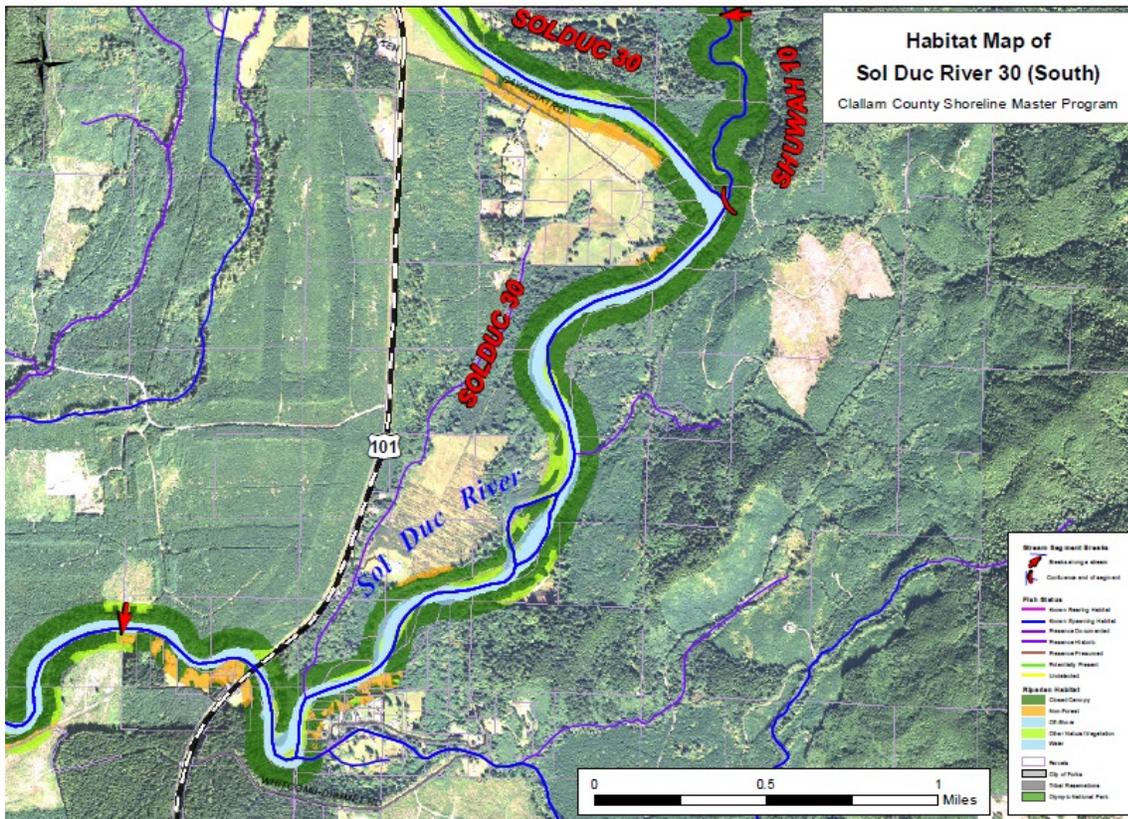
Recommendation 17: Boundary Change SOL DUC 30



SOL DUC 30 reach is currently designated as a rural environment. It flows through an area of relatively dense rural residential development with significant potential for further development. U.S. Highway 101 closely parallels this reach and crosses it near the current downstream boundary. The downstream segment of this reach (~RM 12.7 – 17) represents one of the largest floodways in WRIA 20 and an active channel migration zone. In addition, this portion of the reach contains a very large critical aquifer recharge area, provides an important source for spawning gravel recruitment, and offers highly valuable spawning grounds. This portion of SOL DUC 30 is an area that is highly attractive for development. Close to roads, utilities, and existing housing, the area is zoned for residential and tourism uses.

SOL DUC 20, the reach immediately downstream of this reach is largely uninhabited and contains wide floodplains and active erosion areas. SOL DUC 20 currently is designated as a conservancy environment. *Consideration should be given to a shift in the downstream boundary of this portion of SOL DUC 30 in order to add this highly active and valuable area to SOL DUC 20. Alternatively, this portion of the reach should be designated in a manner that limits future impacts on the highly active and ecologically important ecological processes located in this area.*

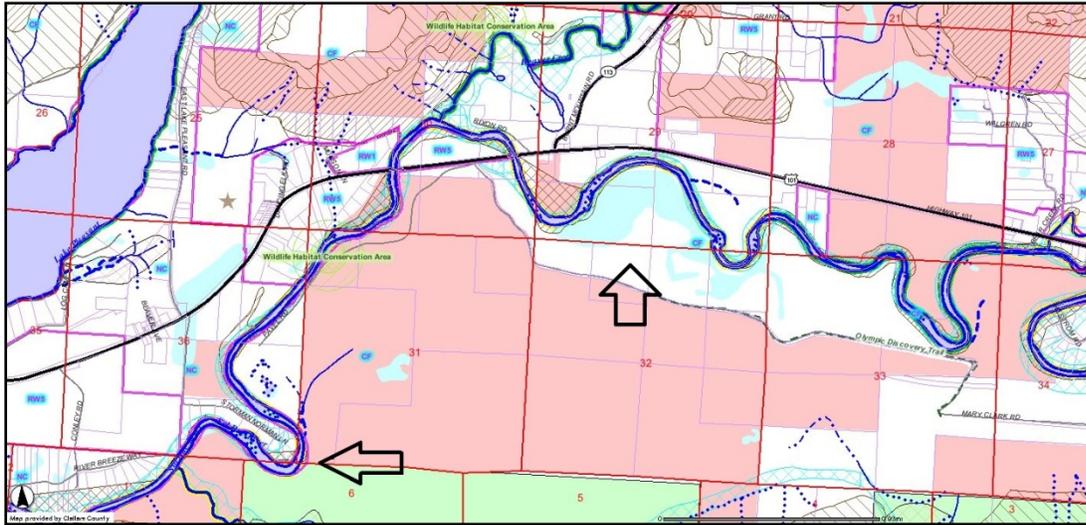




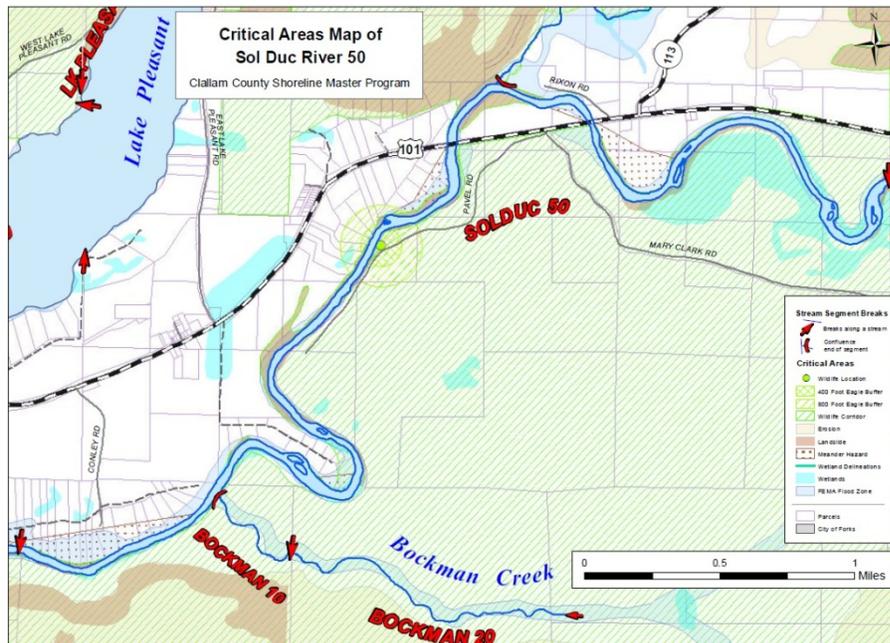
SOL DUC 30 Reach: RM 12.7 -19.2

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<p><u>Shoreline Uses</u> Land Use & Zoning</p> <p>Public Access</p> <p>Utilities</p> <p><u>Hydrologic</u> Water Quality Sediment Transport</p> <p><u>Vegetative</u> Temperature LWD Sediment Transport</p> <p><u>Habitat</u> Physical space and condition Food Production and delivery Spawning Overwintering Blockage</p>	<p>East shoreline: CT & R (zoning -- 3.3 miles in CF & 4.4 miles in RW5 and TC) West shoreline: R dominates (Zoning: 6.7 miles in RW1, QR, NC, RW5; 1 mile is CF)</p> <p>WDFW Boat Ramps at Maxfield Rd and Whitcomb Diimmel Rd Bank fishing trail off Shuwah Rd</p> <p>Underground conductor off US 101 supplies south shoreline (Rainy Ranch properties) at RM 13; PUD primary overhead conductor off US 101 supplies Whitcomb Diimmel, Shuwah Rd, and Steelhead Ave; supplies residential developments</p> <p>Aquifer recharge zone from RM 12.9 to 15 Landslide hazard zones in this reach Very wide floodway (oxbow related) from RM 13.1 to 13.4 Wide floodway and plain at RM 13.4 to RM 16.3 Armoring present upstream end of Whitcomb Diimmel area Active channel and sediment transport important to spawning gravel</p> <p>SOL DUC 30: 92.8% closed canopy; 4% other natural vegetation; 3.2% non-forest Temp exceedance zones -- RM 13.5 –15.2 and 16.8- 18.1 due to shallow wide floodway Riparian condition ratings: RM 12.7- 18.7 (to Lake Creek confluence) "poor" RM 18.7 - 19.2 "good"</p> <p>All species of salmon present Important meander zone rich with spawning gravel at lower end of reach Winter steelhead, spring, summer and fall Chinook spawning throughout; Healthy Status assigned Winter Steelhead, Fall Chinook and Fall and Summer Coho; others stocks unknown</p>	<p><u>Shoreline Uses</u></p> <p><u>Hydrologic</u> Good</p> <p><u>Vegetative</u> Good</p> <p><u>Habitat</u> Good</p>

Recommendation 18: Protection for Segments of SOL DUC 50



Currently SOL DUC 50 is assigned a rural environment designation. As a middle reach of the Sol Duc River that flows close to US 101, this segment contains a mix of residential lots along the northern shoreline and uninhabited timberlands along the southern shoreline. One of the most extensive wetlands in the Sol Duc system is located along the southern shoreline (RM 27.5- 29) in a large block of state lands. In light of the residential zoning, its accessibility to roads and utilities, the current designation appears to be appropriate. *Consideration should be given to the need for adequate protection of the wetlands complex that appears to be associated with the shorelines. In addition, the residences on Stormin Norman Rd appear to be located in a vulnerable area that may be subject to channel migration.*



SOL DUC 50 Reach: RM 23.2 – 29

Shoreline Processes & Functions	Indicators of Conditions	Function Rating
<p><u>Shoreline Uses</u> Land Use & Zoning</p>	<p>South shoreline: Most in CT, some Quasi-public (hatchery) and residential; Zoned all CF North shoreline: All R except some CT; Zoned NC in Stormin Norman and Conley Rd residences; RW5 and WRC at junction of Burnt Mt Rd (SR 113); very small parcels</p>	<p><u>Shoreline Uses</u> Residential development vulnerable along inside of narrow oxbow</p>
<p>Public Access</p>	<p>WDFW Boat Ramp at Pavel Rd (at Sol Duc Hatchery) Rayonier Park opposite Mary Clark Rd (RM 26.9-27.2) RM 27.3-29 large public blocks—ACCESS OPPORTUNITY Adjacent HWY 101 & access to south shore from Mary Clark Rd</p>	<p>Wetlands complex protection (limited wetlands associated with mainstem)</p>
<p>Utilities</p>	<p>Two US 101 bridges & associated armoring Underground conductors: Conley Rd supplies west and north shorelines RM 23 -24; Stormin Norman Rd supplies west and north shorelines RM 24.2 (oxbow full of residences); Pavel Rd supplies south shoreline hatchery; off HWY 101 supplies north shoreline at RM 25.7; overhead conductor off HWY 101 supplies north shoreline at RM 27</p>	<p><u>Hydrologic</u> Good</p>
<p><u>Hydrologic</u> Water Quality Sediment Transport</p>	<p>Temperature exceedance RM 26.6 -27 (between Rixon Rd and 101 Bridge) below lengthy shallow stretch and confluence of Beaver Creek Large floodplain at RM 22.3 to RM 23.6 Large floodway & floodplain at oxbow at RM 24.2 to RM 25 (Stormin Norman Rd. residences) Large potential wetlands complex south shoreline at RM 27.5 to 29</p>	<p><u>Vegetative</u> Good</p>
<p><u>Vegetative</u> Temperature LWD Sediment Transport</p>	<p>SOL DUC 50: 90.9% closed canopy; 3.7% other natural vegetation; 5.4% non-forest LWD not rated; Riparian condition rating: RM 23.2 to 25.3 "poor;" RM 25.3 - 26.6 "fair;" RM 26.6 to 27.5 "poor;" RM 27.5 - 29 "fair"</p>	<p><u>Vegetative</u> Good</p>
<p><u>Habitat</u> Physical space and condition Spawning Overwintering Blockage</p>	<p>All species of salmon present Winter steelhead, spring, summer and fall Chinook spawning throughout; Healthy Status assigned Winter Steelhead, Fall Chinook and Fall and Summer Coho; others stocks unknown.</p>	<p><u>Habitat</u> Good</p>