Fish Passage Barrier Removal Board

Meeting Materials - September 29, 2015

Meeting agenda

Summary of Watershed Pathway Nominations from the Salmon Recovery Regions and the Puget Sound lead entities

Supporting documentation for Watershed Pathway Nominations from the local organizations

Puget Sound criteria that will be used to rank Puget Sound nominated watersheds (HUC 10s)

FBRB project eligibility

Draft July meeting notes

Agenda

Fish Passage Barrier Removal Board

September 29, 2015 – 9:00 am to 3:00 pm

Association of Washington Cities
1076 Franklin Street S.E. Olympia, WA 98501

Objectives for this meeting:

- *Discuss nominations that have been received*
- *Approve Recovery Regions nominations*
- *Discuss criteria and process for ranking Puget Sound nominations*
- *Approve preliminary list of Puget Sound Lead Entity nominations*
- *Agree on project eligibility*

9:00am: **Welcome/Introductions/Agenda Review**

9:10am: **Public Comments**

9:15am: **Follow up items**

- Approval of July meeting notes
- Communication Strategy updates
- Budget Updates
- Reminder of Workflow timeline

9:30am: **Information received from Recovery Regions and Puget Sound Lead Entities**

- Discussion of Watershed Pathway nominations
  - *Action: approve recovery regions nominations*
- Reintroduce criteria to rank Puget Sound Lead Entity nominations
- Show results of nominations
  - *Action: approve preliminary list of Puget Sound Lead Entity nominations*

11:30am: **Next Steps on Watershed pathway nominations**

- Discuss criteria to determine focus areas (stream reaches within a HUC 10 or Region)

12:00pm: **Working Lunch (sandwiches for Board Members)**

12:30pm: **Discuss Eligibility criteria (barrier ownership and project types)**

- *Action: Agree on project eligibility*

2:15pm: **Summary and next steps**

2:45pm: **Adjourn**

Summary of Watershed Pathway Nominations

submitted to

Fish Passage Barrier Removal Board

The Fish Barrier Removal Board (FBRB) requested that each Puget Sound lead entity nominate a watershed at the HUC 10 scale where fish passage projects would open high quality habitat and have the largest benefit for salmon and steelhead recovery. Other salmon recovery regions were asked to nominate priority watersheds at locally determined spatial scales. Details of nominations can be found at the FBRB website: http://wdfw.wa.gov/about/advisory/fbrb/.

SALMON RECOVERY REGIONS

Yakima Basin Fish and Wildlife Recovery Board:

- Wilson/Cherry HUC 10 Watershed

Snake River Salmon Recovery Board:

- Transportation related barrier watersheds: Snake River tributaries above Little Goose Dam and Grande Ronde tributaries
- Non-transportation related barrier nomination: Mill Creek Flood Control Structure

Lower Columbia Fish Recovery Board: Listed in priority order

- Lower Cowlitz tributaries
- Coweeman Watershed
- East Fork Lewis Watershed
- North Fork Lewis Watershed
- Washougal Watershed

Upper Columbia Salmon Recovery Board: Listed below in priority order

- Okanogan - Johnson, Loup Loup, Antoine, Omak, and Aeneas Creeks
- Methow and Wenatchee - Icicle Creek, Mission Creek, Peshastin Creek, Chiwawa Creek, Beaver Creek (Methow), Gold Creek (Methow)
- Additionally, a barrier assessment and prioritization

Washington Coast Salmon Recovery Region: Not given in priority order

- The Upper Chehalis Watershed
- Sol Duc Watershed
- Queets/Quinault Watershed
- The Naselle Watershed

PUGET SOUND LEAD ENTITIES

Green/Duwamish and Central Puget Sound Watershed (WRIA 9): Lower Green River HUC 10

Hood Canal Coordinating Council: Tahuya River - Frontal Hood Canal HUC 10

Island County: No nomination submitted

Lake Washington/Cedar/Sammamish Watershed (WRIA 8): Middle Sammamish River and tributaries HUC 10

Nisqually River Salmon Recovery (WRIA 11): No nomination submitted

North Olympic Peninsula Lead Entity for Salmon (WRIA 19): Pysht River - Strait of Juan de Fuca Frontal HUC 10

Pierce County Lead Entity: Listed in priority order

- Carbon River HUC 10
- Upper Puyallup River HUC 10

San Juan County Community Development: No nomination submitted

Skagit Watershed Council: Finney Creek/Skagit River HUC 10

Snohomish Basin: Pilchuck River HUC 10

Stillaguamish River Salmon Recovery: No nomination submitted

West Sound Watersheds Council: Ollala Valley - Puget Sound Frontal HUC 10

WRIA 13 Salmon Habitat Recovery Committee: McLane Creek - Frontal Puget Sound HUC 10

WRIA 14 Salmon Habitat Recovery Committee: Goldsborough Creek - Frontal Puget Sound HUC 10

WRIA 1 Salmon Recovery Board: No nomination submitted

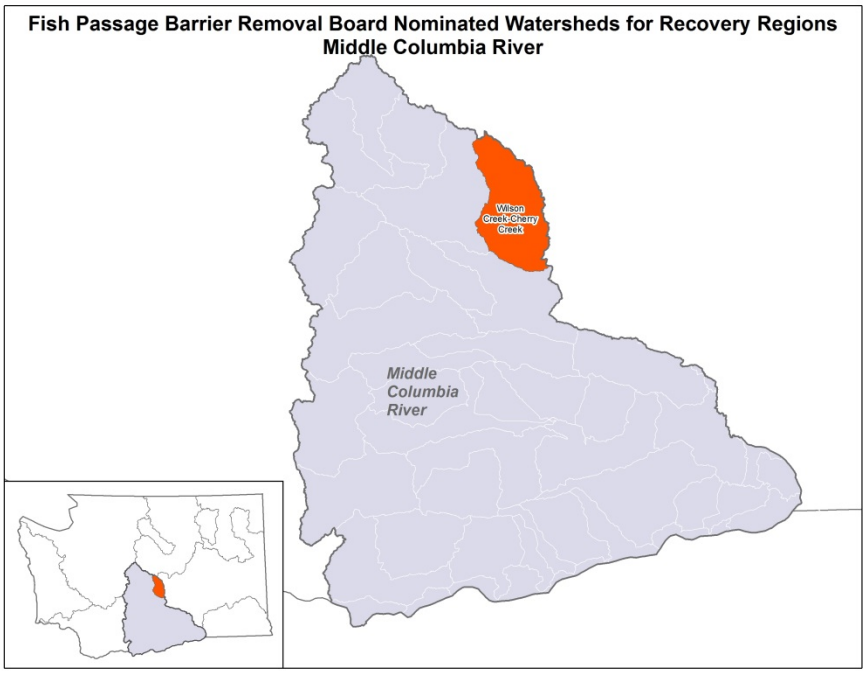
Watershed Pathway Nominations
Supporting Documentation

Salmon Recovery Regions

Puget Sound Lead Entities

Yakima Basin Fish and Wildlife Recovery Board

NOMINATION: Wilson/Cherry HUC 10 Watershed



To: FBRB (DFW)
Subject: Focal Watershed Recommendations from YBFWRB
Date: Friday, August 14, 2015 12:59:16 PM

Dear Cade,

The Yakima Basin Fish and Wildlife Recovery Board would like to nominate the Wilson/Cherry HUC 10 watershed (1703000104) as our focal watershed for the Fish Passage Board's consideration. Restoring access to this watershed (which encompasses two major spawning areas) is essential for us to meet steelhead delisting criteria, and will provide significant quality habitat for coho and juvenile Chinook. There is a high density of barriers of diverse types and ownerships. We will provide you with more information to justify this nomination in the near future.

We look forward to working with you to review the WDFW barrier database and develop a list of Coordinated Pathway projects, as we discussed on the phone.

Sincerely,

Alex

Alex Conley, Executive Director
Yakima Basin Fish & Wildlife Recovery Board
aconley@ybfwrb.org
(509) 453-4104

1200 Chesterly Drive, Suite 280
Yakima, WA 98902

The Yakima Basin Fish and Wildlife Recovery Board would like to nominate the Wilson/Cherry HUC 10 watershed (1703000104) as our focal watershed for the Fish Passage Board's consideration. Restoring access to this watershed (which encompasses two major spawning areas) is essential for us to meet steelhead delisting criteria, and will provide significant quality habitat for coho and juvenile Chinook. There is a high density of barriers of diverse types and ownerships.

Role of the Wilson/Naneum/Cherry Creek watershed in Fisheries Recovery

The Yakima Major Population Group (MPG) is part of the Middle Columbia River Steelhead Distinct Population Segment (DPS), which is listed as threatened under the federal Endangered Species Act (ESA). For the Yakima MPG to be rated as viable (a prerequisite for delisting the DPS), spatial structure goals must be met for all four of the steelhead populations in the MPG. Three of the four currently meet these goals, but for the Upper Yakima population to meet them, steelhead must have access to three of four currently unoccupied major spawning areas (MSAs): the Manastash MSA (where investments to provide passage should be completed in 2016), the Cle Elum MSA (where work to provide passage at the Bureau of Reclamation's Cle Elum Dam is in progress), and the Naneum and Caribou MSAs (both of which are located in this priority watershed). Given that full occupancy is required in at least one of the two MSAs in the Wilson/Naneum/Cherry watershed, its designation as a priority area for the fish passage program directly supports efforts to achieve delisting goals for Middle Columbia Steelhead.

In addition to its importance for listed steelhead, the priority watershed provides significant habitat for coho salmon, juvenile spring chinook salmon, resident trout and other native fish, and potentially, Pacific lamprey.

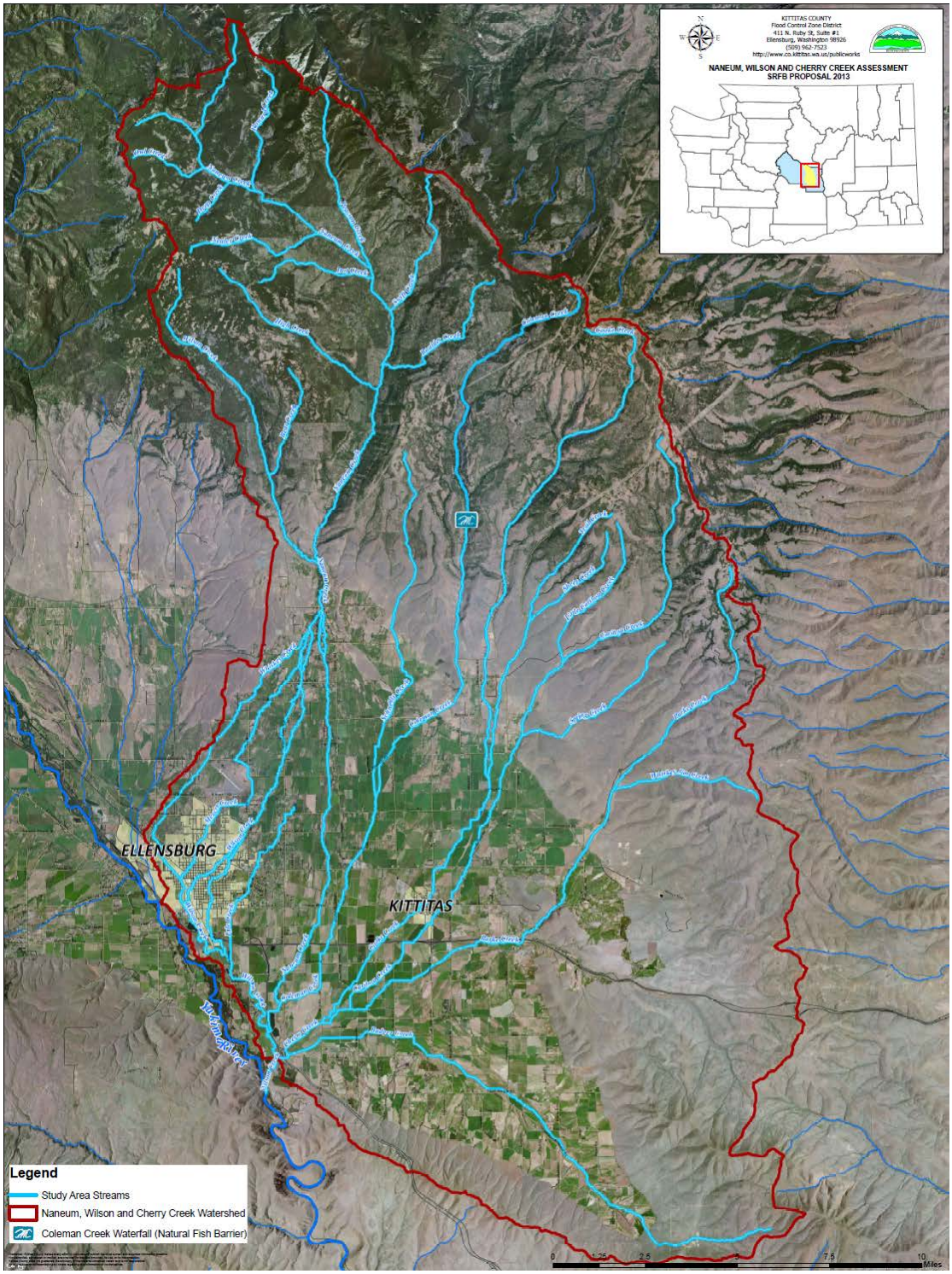
Process for Identifying the Priority Watershed

Providing fish passage into the Wilson/Naneum/Cherry watershed is identified as a priority action in the 2009 Yakima Steelhead Recovery Plan (Upper Yakima Actions 7 & 11), in the 2014-2015 Technical Advisory Group Focus Actions List (used to guide investment of SRFB funds), and in the Yakima Basin Integrated Plan 10 year Habitat Implementation Plan. Following WDFW's request in July of 2015, the YBFWRB polled partners in the basin about possible priority watersheds at meetings, via email, and via announcements in our newsletter. All respondents supported identifying the Wilson/Cherry/Naneum watershed as a priority.

Previous work in the Priority Watershed

Passage and screening work has been ongoing in lower reaches of tributaries in the priority watershed over the last 15 years. This work has restored access to many areas that provide valuable rearing habitat, but passage to high quality spawning habitat in the headwaters remains blocked by a diverse array of barriers, including public and private road crossings, canal intersections and irrigation diversion structures. Due to the complexity of the watershed (see image on reverse), a SRFB-funded assessment is being led by Kittitas County to evaluate and prioritize possible passage routes. We look forward to working with WDFW to integrate the work done as part of this assessment with the Fish Passage Board's priority watershed process.

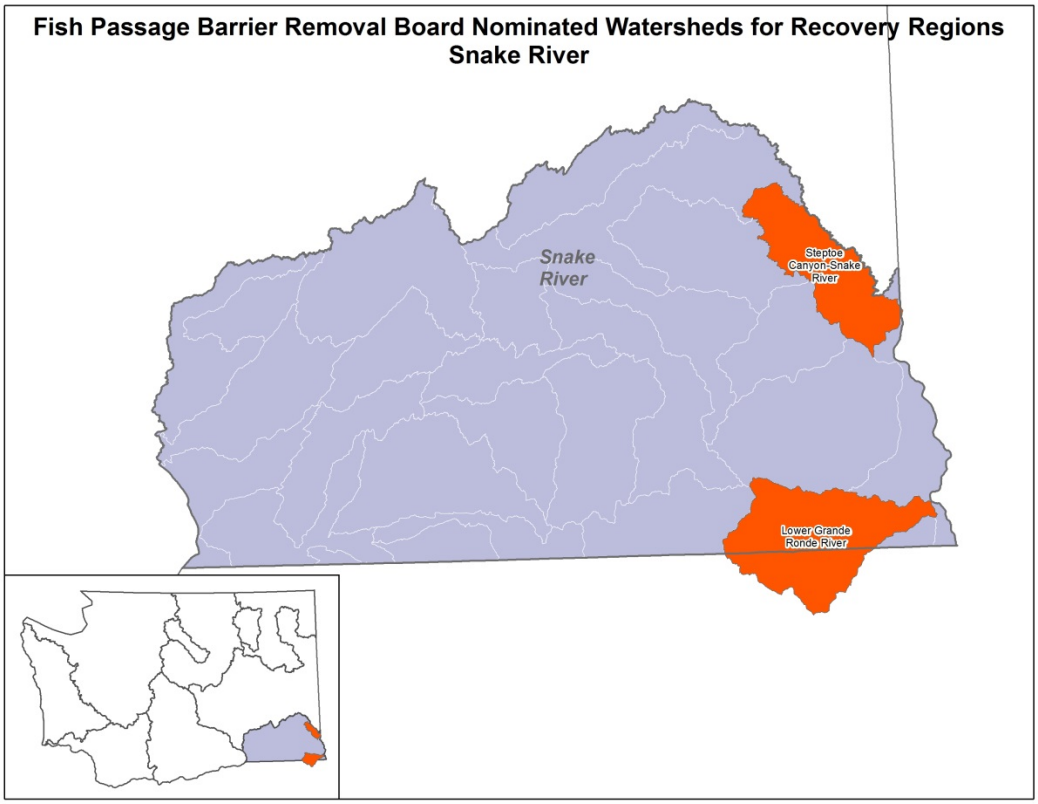
Wilson/Cherry HUC 10 watershed (1703000104)



Snake River Salmon Recovery Board

NOMINATION: (1) Snake River tributaries above Little Goose Dam and Grande Ronde tributaries (transportation related)

(2) Mill Creek Flood Control Structure (non-transportation related)



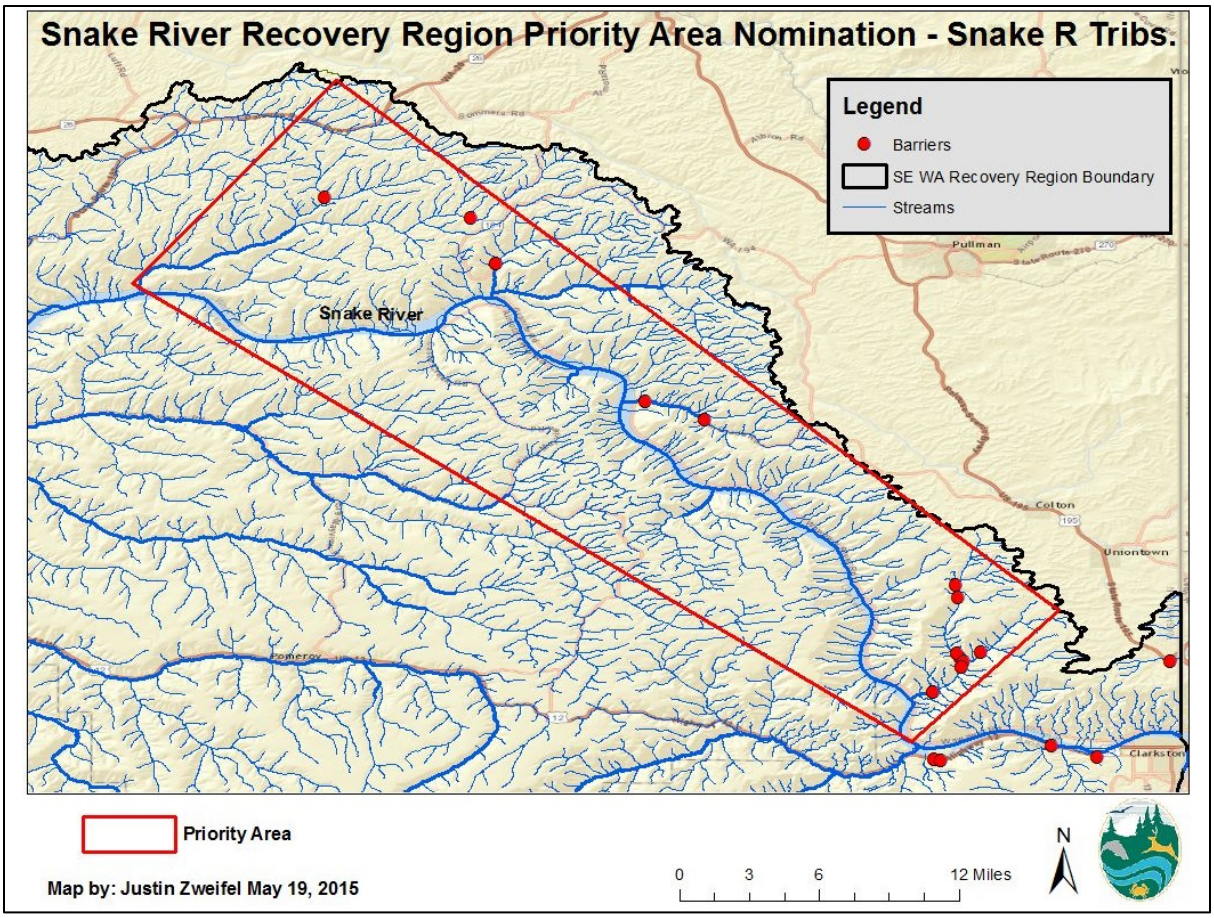
Cade et al.,

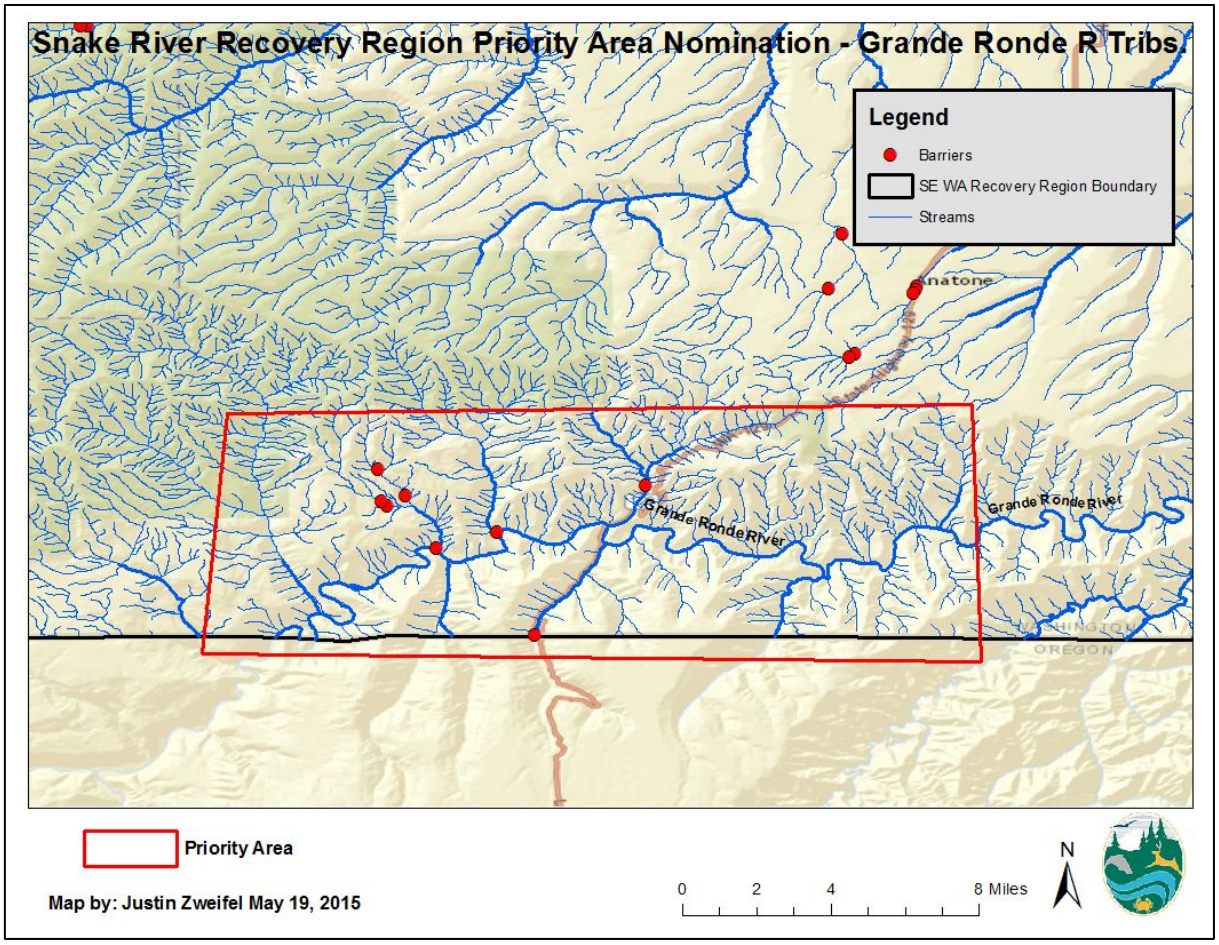
I received confirmation today from the regional technical team that our priority fish passage barrier geographic area is the same as the maps you sent me – Snake River tributaries above Little Goose Dam and Grande Ronde tributaries.

I will provide you the narrative describing our thought process and the criteria by August 20. In the meantime, I need to reiterate that the number 1 fish passage barrier in southeast Washington is the Mill Creek Channel/Bennington Dam but due to various considerations, we will be recommending the suite of coordinated barriers on public and private property shown in the maps you sent me.

Thanks and I am happy to help with the Department's supplemental budget request and subsequent requests to the legislature.

Steve Martin
Director, Snake River Salmon Recovery Board
410 E Main, Dayton, WA 99328 / 509-382-4115


Snake River Recovery Region Priority Area Nomination - Snake R Tribs.
Legend
Barriers
SE WA Recovery Region Boundary
Streams
Snake River
Pullman
Colton
Uniontown
Clarkston
Priority Area
Map by: Justin Zweifel May 19, 2015
0 3 6 12 Miles
N


Snake River Recovery Region Priority Area Nomination - Grande Ronde R Tribs.
Legend
Barriers
SE WA Recovery Region Boundary
Streams
Anatone
Grande Ronde River
Grande Ronde River
WASHINGTON
OREGON
Priority Area
Map by: Justin Zweifel May 19, 2015
0 2 4 8 Miles
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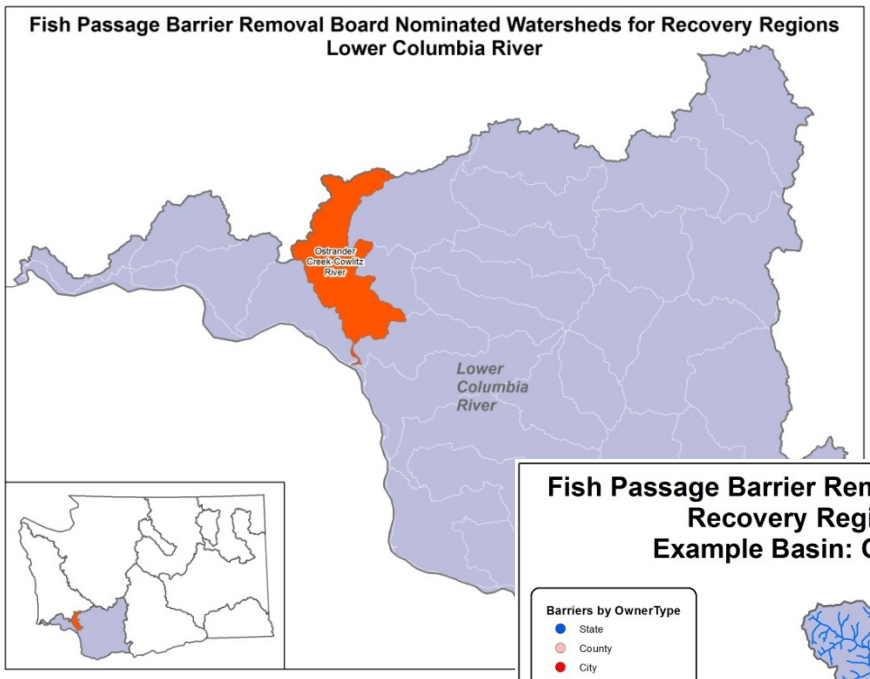
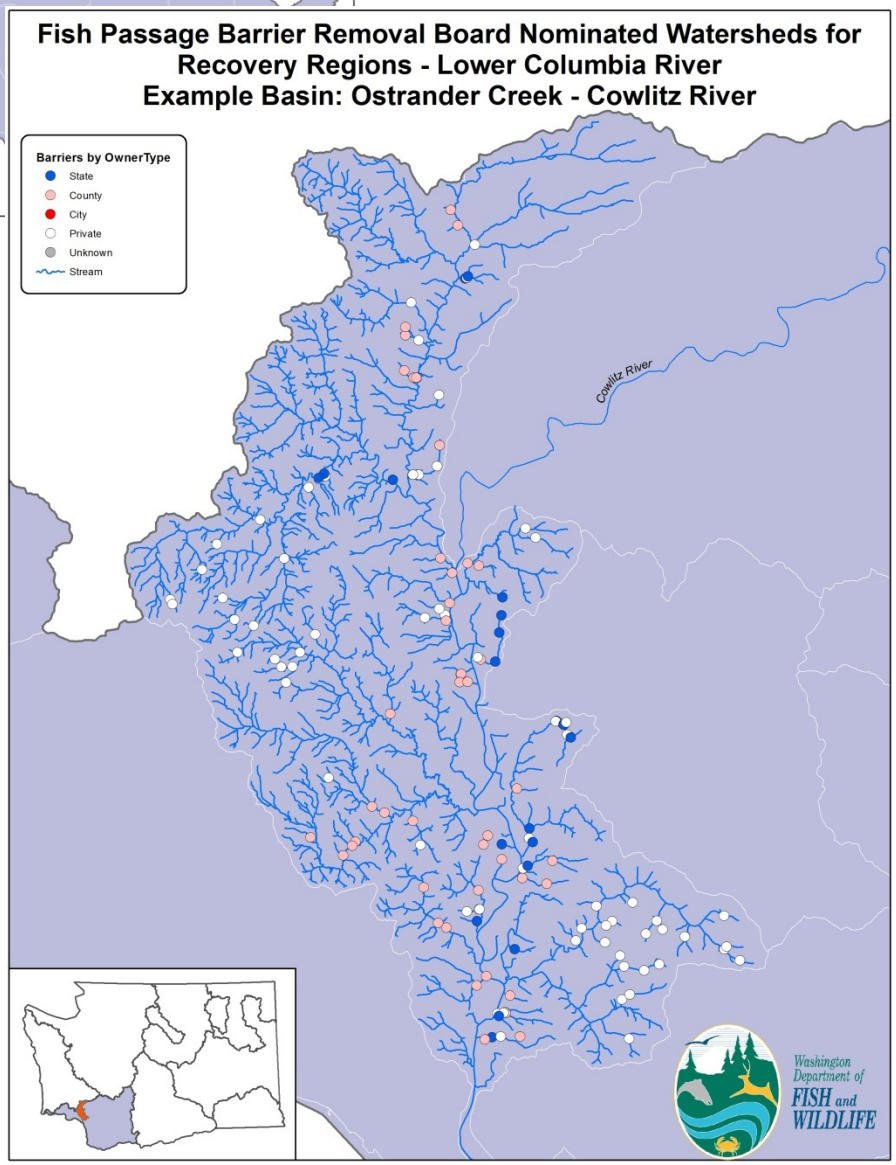
Lower Columbia Fish Recovery Board

NOMINATION: (1) Lower Cowlitz tributaries; (2) Coweeman Watershed; (3) East Fork Lewis Watershed; (4) North Fork Lewis Watershed; (5) Washougal Watershed





LOWER COLUMBIA FISH RECOVERY BOARD

August 14, 2015
Julie Henning
Washington Department of Fish and Wildlife

SUBJECT: WDFW Fish Passage Barrier Removal Board Request

Dear Julie,

We are submitting our recommended watershed priorities for fish passage barrier removal in the Lower Columbia Salmon Recovery Region. This is in response to the request by the Fish Passage Barrier Removal Board (FBRB) to provide information that would assist in developing a statewide fish passage program to address barriers on anadromous streams. Your guidance asked for us to nominate a watershed (or watersheds) within our region where fish passage projects would open high quality habitat and have the largest benefit for salmon and steelhead recovery.

In coming up with our ranked list, we considered the amount of habitat that could be opened up within the watershed, the amount of impervious surface, whether there were temperature concerns, ownership types, the number of primary populations affected, and the degree to which removing barriers would promote improved VSP parameter indices (spatial structure, abundance, productivity, and diversity) (Table 1).

You will note that we have shifted our priorities after our meeting with you on August 4. At that meeting we gained clarification regarding the "Watershed" vs "Coordinated" efforts. You will see that we have removed the Mill-Abernathy-Germany complex, and added Lower Cowlitz and Washougal basins to our list. Our list is ranked based on an overview of the information you requested in your call for watershed nominations, and on the level of benefit to fish and synergy with other activities in each basin. Table 2 documents notes on our rationale and justification for priorities.

The list below is our nominations for the Watershed Approach. Our nominations for the Coordinated Approach will be forthcoming. Please let us know if you have any further questions.

Sincerely,

Jeff Breckel
Executive Director

Table 1. Prioritized watersheds for fish passage barrier removal under the Watershed Approach.

Priority	Watershed	# of Primary Pops	Culvert Density*	Ownership Types	Amount of Habitat - # Anadromous Miles	Amount of Impervious Surface	Temperature Concerns - # 303d listings	Spatial Structure - Area opened to expand distribution	Abundance - number of priority stream miles	Productivity - Relative quality of Priority Reaches	Habitat Diversity
H	Lower Cowlitz	1	806	Ci, Co, P, S	356	M	6	Significant	117.5	84	Moderate
H	Coweeman	3	338	Co, F, P, S	92	L	8	Significant	37	33	High
H	EF Lewis	5	491	Ci, Co, F, P, S	175	M	7	Significant	52.6	69	Moderate
H	NF Lewis	5	339	Co, F, P, S	98	L	8	Moderate	61.5	46	High
H	Washougal	3	214	Ci, Co, F, P, S	134	M	0	Moderate	42.7	64	High
M	Elochoman/Skamokawa	3	338	Ci, Co, F, P, S	129	L	3	Moderate	29.3	28	Moderate
M	Kalama	2	265	Ci, Co, P, S	122	L	1	Moderate	50	38	High
M	Toutle	5	1008	Co, P, S	308	L	3	Significant	115.31	78	High
L	Upper Cowlitz	3	690	Ci, Co, F, P, S	123	M	7	Moderate	52.5	24	Moderate
L	Grays	3	592	Ci, Co, P, S	158	L	4	Significant	33.4	30	High
L	MAG	3	232	Co, F, P, S	105	M	10	Moderate	24.28	21	Moderate
L	Chinook	3	117	Ci, Co, P, S	19	M	0	Significant		0	Moderate
L	Wind	2	40	F, P, S	127	L	0	Minor	40.8	22	Moderate
L	Lower Gorge	3	91	Co, F, P, S	46	L	0	Minor	9.26	15	Moderate
L	Tilton	0	378	Ci, Co, P, S	78	L	0	Minor	16.6	0	Moderate
L	Cispus	3	2	P	70	L	6	Minor	33.9	5	Moderate
L	Salmon	0	267	Ci, Co, P, S	121	H	14	Minor	0	0	Low
L	Upr Gorge/White Salmon	1	70	Co, P, S	15	L	6	Minor		0	Moderate

*based on RMAP and Feb 2015 WDFW download - no federal lands
Temp concerns = # cat 5 listings
Landowner Types: City (Ci), County (Co), Federal (F), Private (P), State (S)
Amount of Habitat = number of anadromous miles in the basin

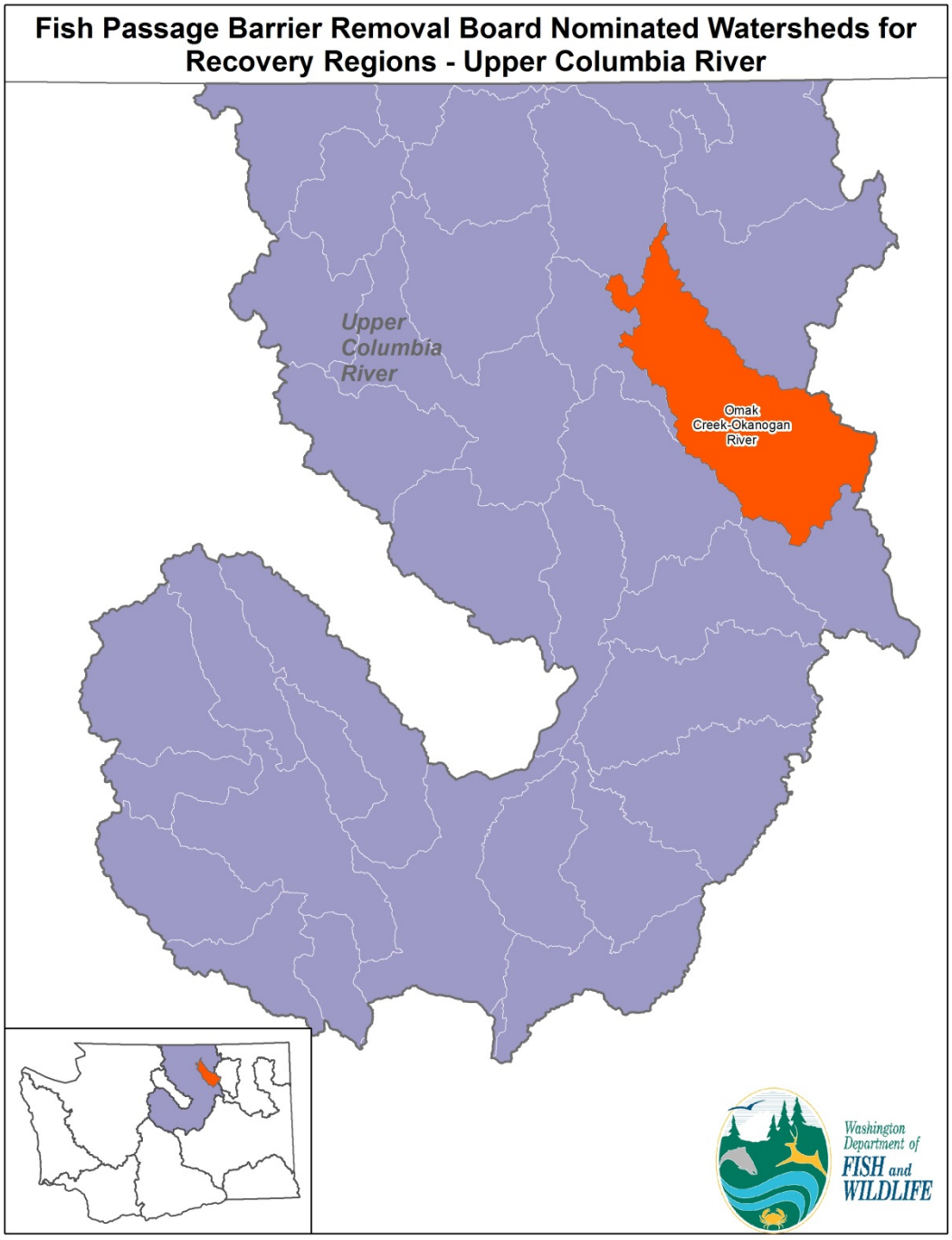
Amount of Impervious Surface by visual determination
Spatial Structure impacts - Visual estimation of the proportion of habitat within each watershed that is impacted by barriers
Abundance impacts - based on number of priority stream miles (T1/T2) in the basin
Productivity impacts based on number of T1/T2 (Priority) stream reaches in the basin
Diversity impacts - Visual estimation based on Land Use and Hillshade GIS layers

CAVEATS:
Incomplete inventory
Don't know how many have been corrected
If we remove all in each basin we get ?? Miles opened
Chinook and Upper Gorge have no EDT
Passage is not listed as a key recovery priority in the Gorge Strata
Does not include federal lands

Table 2. Notes on justification for prioritization of watersheds for fish passage barrier removal under the Watershed Approach.	
Watershed	Notes
Lower Cowlitz	There is a good opportunity to coordinate with city and county governments, relatively low amounts of industrial timber, good potential to provide access to substantial a quantity of good quality tributary habitat.
Coweeman	More family forests that industrial forests in this watershed. Good habitat supporting legacy stock for Fall Chinook
EF Lewis	Good opportunity to coordinate with City and County governments. Considerable tributary habitat in Clark County. Important to open tributary habitat as refuge from warm temperatures in lower mainstem.
NF Lewis	Specifically lower NF Lewis below Yale Dam including Cedar Creek. Good potential to provide access to substantial a quantity of good quality tributary habitat, outside of Federal Forest Lands
Washougal	Opening tributaries would provide access to habitats that still support spawning and rearing in a system lacks such habitats in the mainstem due to historic timber and splash dam practices. The majority of the culverts appear to be on small forest owner properties and county roads. There is increasing development pressure in this basin.
Elochoman/Skamokawa	This county is in great need of assistance, and may be a better fit for coordinated effort list. While many culverts in this basin that are on relatively small streams with limited habitat potential, collectively they could make a good contribution to recovery efforts. This is a basin flagged for upcoming chum reintroduction, and work here could support that effort.
Toutle	Mostly industrial and federal timber land. We would potentially be able to work in the Toutle below the NF and SF confluence.
Kalama	There is good opportunity up and including Gobar Creek, however above this point is largely industrial timber land.
Chinook	Most culverts are within areas of active restoration or on state highway corridor. There are few on timber lands.
Grays	There is some opportunity up to the West Fork Grays Confluence. Above this is all industrial timber land. There are a few along Hwy 4, but relatively few on fish bearing streams.
MAG	Most of the culverts in this basin are on industrial timber/DNR land.
Upper Cowlitz	Most of this basin is in state, federal and industrial timber land. Most culverts fall on the state highway or on forest lands.
Tilton	Most of this basin is in timber or agriculture lands. Some habitat potential downstream of Morton.
Cispus	Most of this basin is on State or Federal timber lands
Salmon	This basin is primarily urban, with relatively few anadromous stream miles and no primary populations. This would be a better fit for the coordinated program.
Lower Gorge	Fish passage is a relatively small issue in this basin. Barriers are associated with state highway or railroad.
Wind	Most of this basin is in state, federal and industrial timber land. Fish passage on non-forest private lands offers limited potential.
Upper Gorge/White Salmon	Fish passage is a relatively small issue in this basin

Upper Columbia Salmon Recovery Board

NOMINATION: (1) Okanogan - Johnson Creek, Loup Loup, Antoine, Omak, Aeneas Creeks; (2) Methow and Wenatchee - Icicle Creek, Mission Creek, Peshastin Creek, Chiwawa River, Beaver Creek (Methow), Gold (Methow); (3) A barrier assessment and prioritization



MEMORANDUM

August 13, 2015

TO: Julie Henning, Washington Department of Fish and Wildlife

FROM: Greer Maier, Upper Columbia Salmon Recovery Board

SUBJECT: WDFW Fish Passage Removal Board (FBRB) Request

We would like to thank you for your efforts to incorporate local input into the development of a statewide fish passage program. As in our previous memo to the Fish Barrier Removal Board (FBRB) (dated December 15, 2014), we will provide the best available information to help in this important effort to address fish passage in the State of Washington in response to recent legislation (RCW 77.95.160, 170, 180). This memo is a reply to a request made on July 14, 2015 to submit priority watersheds and fish passage barriers to the FBRB. The information provided below builds upon our previous memo with additional information on regional priorities and the rationale for our selections based on the criteria provided.

We will start by saying that although most habitat in the Upper Columbia is currently accessible (not considering habitat upstream of Chief Joseph Dam and the Canadian portion of the Okanogan) and many fish passage issues have been resolved (over 110 barriers removed and 310 miles opened to fish passage); fish passage remains a top priority in the region. Remaining barriers are primarily related to flow and water quality issues, small road-stream crossings, and diversions. At this time, one of the most important actions for fish passage across the Upper Columbia is **barrier assessment and prioritization**, which will help us understand where the important remaining passage issues are. Given that we do not fully understand the extent of remaining small barriers in our watersheds and their importance to local productivity and survival, we would advocate that any future funding should be allocated through an **open process** such as the Salmon Recovery Funding Board (SRFB) process. This would allow the region to fund the most important barrier projects based on current information from assessment, monitoring, and modeling.

Based on the guidance you provided and the most current information on populations and barriers we have developed a list of high priority watersheds for fish passage efforts in the Upper Columbia region. These priority watersheds are areas where barrier removal will have the highest contribution to recovery of salmon and steelhead. The list was developed through regional outreach for information and input from our Upper Columbia Regional Technical Team (UCRTT).

Upper Columbia Priority Watersheds- Watershed Approach

As requested, we selected watersheds in areas where fish passage projects would open high quality habitat and have the largest benefit for salmon and steelhead recovery (based on considerations provided on page

2 of your request). We considered all major types of fish passage barriers (natural barriers, road-stream crossings, diversions, and water quality and flow barriers). The results are as follows:

Okanogan – Priority 1
Tributaries (in priority order)- Johnson Creek, Loup Loup, , Antoine, Omak, Aeneas

Methow and Wenatchee – Priority 2
Tributaries (in priority order) – Icicle, Mission, Peshastin, Chiwawa, Beaver (Methow), Gold (Methow)

The Okanogan Subbasin is the highest priority for fish passage projects in the region because steelhead in this area are naturally segregated into distinct spawning aggregates that rely on habitat in cold water tributaries. Barriers, poor water quality and low late-summer instream flows (mainstem and tributary) limit the survival, distribution, and productivity of both anadromous and inland salmonids. Seasonal temperatures and flow issues in most of the Okanogan mainstem limit movement within and between tributaries, and only a few tributaries have adequate conditions for salmonids. This summer many of the smaller spawning tributaries in the Okanogan basin have dried up completely due to the drought conditions. These events highlight the importance of removing barriers in the small number of remaining accessible tributaries and enhancing flow.

Although the number and density of barriers in this basin may not be high, the impact of barriers is much larger than in other subbasins due to the restricted spatial structure of the population. Habitat is limited in tributaries and any barriers to fish passage can have a substantial effect on the viability of the population. Within the Okanogan, several tributaries are priorities for fish passage projects because small tributaries in the Okanogan sustain a large proportion of the natural-origin steelhead in the population and several have fish passage barriers blocking or limiting access to high quality habitat. The Okanogan population was the only population in the region to be rated as high risk for spatial structure in the last 5-year status review (Ford 2011) and addressing barriers in the Okanogan will reduce the risk of extinction of the population through improved viability and colonization and expansion from core populations.

The top priority for the Methow and Wenatchee population is barrier assessment. Most of the known barriers in the anadromous zone have been addressed but the extent and impact of remaining barriers on low and moderate priority streams are unknown. The regional Biological Strategy identifies Icicle Creek, , and tributaries of the Chiwawa River in the Wenatchee Subbasin barriers as primary ecological concerns (UCRTT 2013). In Icicle Creek, a project has been proposed to improve passage at the 'boulder field', which is a naturally confined area that apparently was made less passable due to road building many decades ago. There is a series of culvert barriers on USFS roads in the Mission Creek watershed, but other road placement/maintenance issues need to be addressed in Mission Creek before it makes sense to replace culverts. Additionally, we understand that federally owned culverts may not be eligible for FBRB funding. Peshastin Creek has one road related passage problem at the Ruby slide area, a spot where Highway 2 causes excessive confinement. Additionally, several small tributary streams may have culvert barriers that block some anadromous habitat, but more inventory work is needed to understand their priority level. The Chiwawa River is a fairly pristine watershed but a few of its tributaries still have culvert barriers that need to be addressed (most notably Clear Creek, Minnow Creek, and Big Meadow Creek).

In the Methow Subbasin, Beaver Creek and Gold Creek have several fish passage barriers that need to be addressed after the recent fires, subsequent floods and the low flow conditions in 2015. These tributaries are important subwatersheds for the productivity and spatial structure of steelhead.

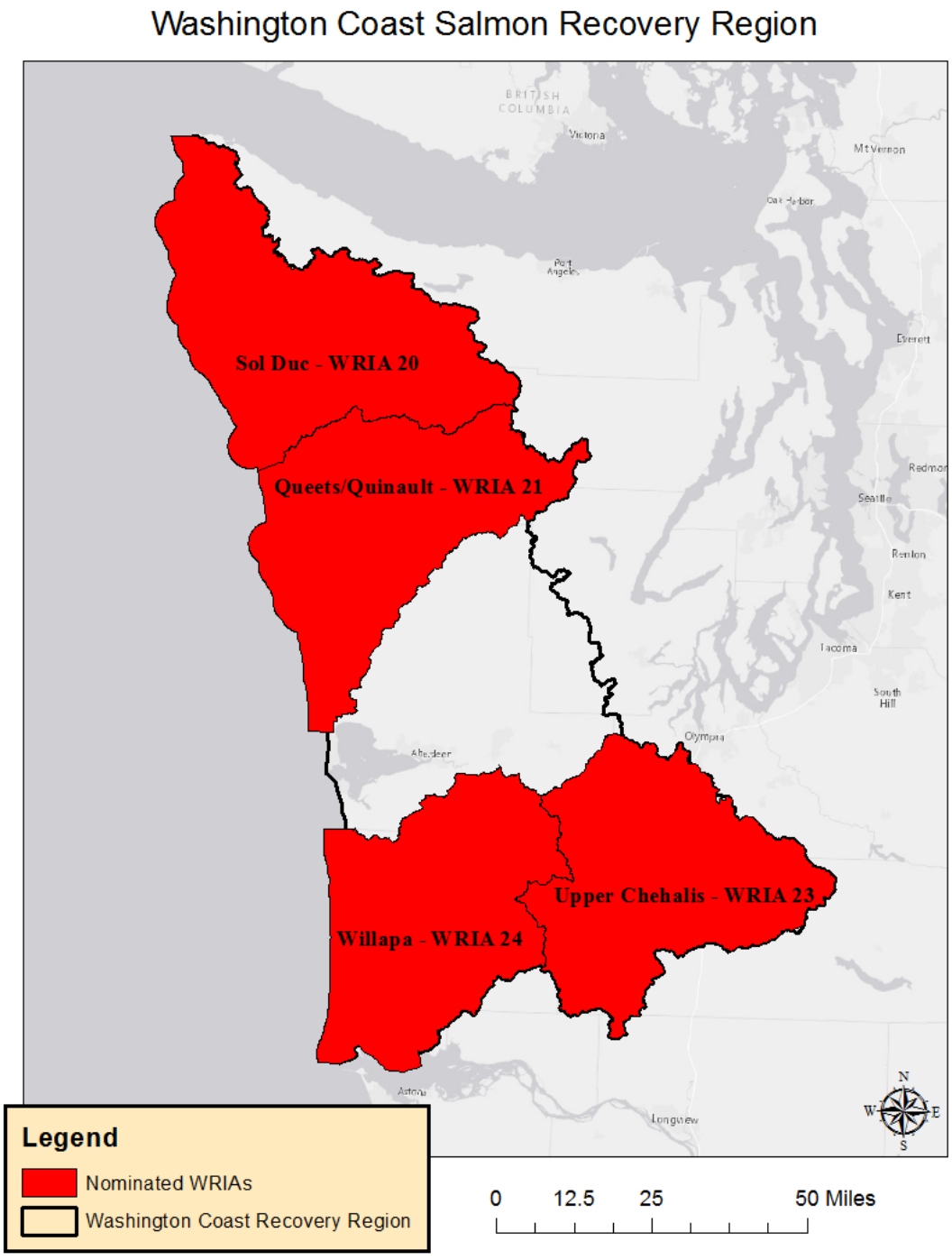
The Entiat is primarily a mainstem population for both steelhead and spring Chinook and there are no major barriers within the mainstem. Barriers have already been fixed in a couple of important tributaries including Roaring and Tillicum creeks. Several small barriers exist within one other steelhead tributary (Stormy Creek); however, the landowner has not been interested in pursuing a barrier replacement project here.

<u>Upper Columbia Priority Watersheds- Coordinated Project Pathway</u>
The Upper Columbia Region does not have any specific barriers that fit the criteria under this pathway at this time. All the priority barriers fall within priority watersheds, as identified above. However, it is likely that if/when specific barriers are identified in the Wenatchee or Methow tributaries they would fit well within this category of the FBRB process and should be eligible for this funding.

In an effort to coordinate with our partners on this request, we solicited input from each of the Watershed Action Teams in the Upper Columbia. Using input from that solicitation and the Regional Technical Team, we assembled this response memo. Please feel free to contact me with any additional questions at greer.maier@ucsrb.org or (509) 888-7219.

Washington Coast Salmon Recovery Region

NOMINATION: WRIA 20 - Sol Duc River Watershed; WRIA 21 - Queets/Quinault Watershed; WRIA 23 - The Upper Chehalis Basin; WRIA 24 - The Naselle Basin



Green/Duwamish and Central Puget Sound Watershed (WRIA 9)

NOMINATION: Lower Green River HUC 10

WATER RESOURCE INVENTORY AREA 9 (WRIA9)

GREEN / DUWAMISH AND CENTRAL PUGET SOUND WATERSHED

Algona
Auburn
Black Diamond
Burien
Covington
Des Moines
Enumclaw
Federal Way
Kent
King County
Maple Valley
Normandy Park
Renton
SeaTac
Seattle
Tacoma
Tukwila

King Conservation District
Vashon/Maury Island Community Council
Covington Water District
Port of Seattle
Washington Department of Ecology
Washington Department of Fish and Wildlife
Washington Department of Natural Resources
U.S.Army Corps of Engineers

Washington Environmental Council
Green/Duwamish Watershed Alliance
Trout Unlimited/Mid-Sound Fisheries Enhancement Group
Save Habitat and Diversity of Wetlands (SHADOW)

The Boeing Company
Master Builders Association
King County Agricultural Commission

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August 20, 2015

Julie Henning
Fish Barrier Removal Board
Washington Department of Fish and Wildlife
600 Capitol Way N
Olympia, WA 98501-1091

RE: WRIA 9 Priority Watershed (at the HUC 10 scale) for Fish Passage Barrier Removal

Dear Fish Barrier Removal Board:

The WRIA 9 Implementation Technical Committee evaluated the HUC 10 subwatersheds in WRIA 9 and determined that **the priority watershed in the WRIA for focusing on fish barrier removal is HUC 10 1711001303**. This HUC 10 extends from the mouth of the Duwamish to approximately River Mile 50, which is in the upper portion of the Middle Green subwatershed according to the WRIA 9 Salmon Habitat Plan (2005). This HUC 10 was chosen as the priority for WRIA 9 for the following reasons:

- It encompasses all of the major tributaries to the Green/Duwamish River, many of which are high priority for protection and restoration of spawning and/or rearing for Chinook and other salmonids (see Figure 1). The HUC 10s that encompass the nearshore drainages and Vashon Island, by contrast, are not considered to contain historic Chinook spawning habitat. The two HUC 10s in the upper reaches of the Green River have very few non-federal fish passage barriers remaining, because most of them have been or are planned to be removed as part of the Habitat Conservation Plan for the Upper Green subwatershed behind Howard Hanson Dam and the Tacoma Public Utilities water supply facility.
- The density of known fish passage barriers is much higher in this HUC 10 than in the other HUC 10s in WRIA 9 (see Figure 2).
- Several fish passage barriers in this HUC 10 were called out as projects in the WRIA 9 Salmon Habitat Plan, which means they went through a rigorous prioritization process and are very high priority for Chinook salmon recovery (e.g., Riverton Creek, Gilliam Creek, Black River).
- Addressing fish passage barriers in this HUC 10 would open up well over 50 miles of creek for spawning and/or rearing, and has the potential to make a large amount of rearing habitat available for juvenile salmonids in an area where lack of rearing habitat is one of the primary limiting factors for salmon recovery.

Sincerely,

Elissa Ostergaard, Planning and Stewardship Coordinator,
Green/Duwamish and Central Puget Sound Watershed (WRIA 9)

Financial support provided by signers of Watershed Planning Interlocal Agreement for WRIA 9 including:
Algona, Auburn, Black Diamond, Burien, Covington, Des Moines, Enumclaw, Federal Way, Kent, King County, Maple Valley, Normandy Park, Renton, SeaTac, Seattle, Tacoma, Tukwila

Figure 1: HUC 10 subwatersheds in WRIA 9. The priority watershed is HUC 17110001303, which is outlined in brown, and extends from the downstream end of the Duwamish River to approximately river mile 50 along the Green River. It also includes all the tributaries to the Green/Duwamish in this reach.

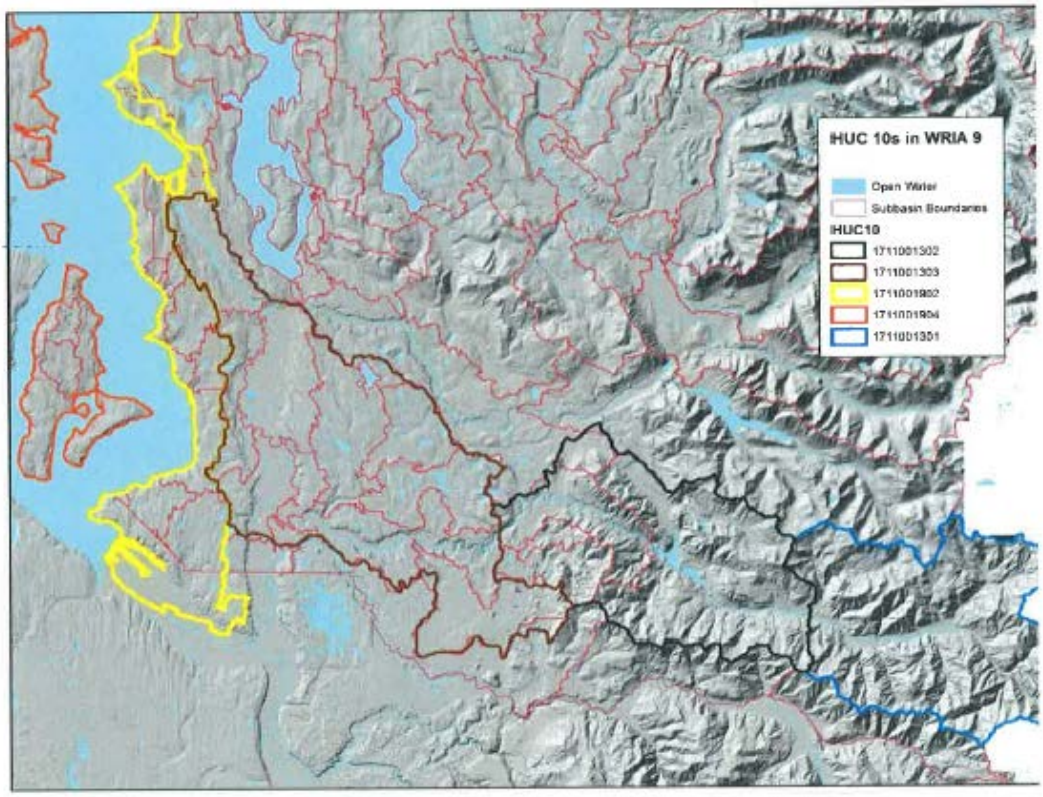
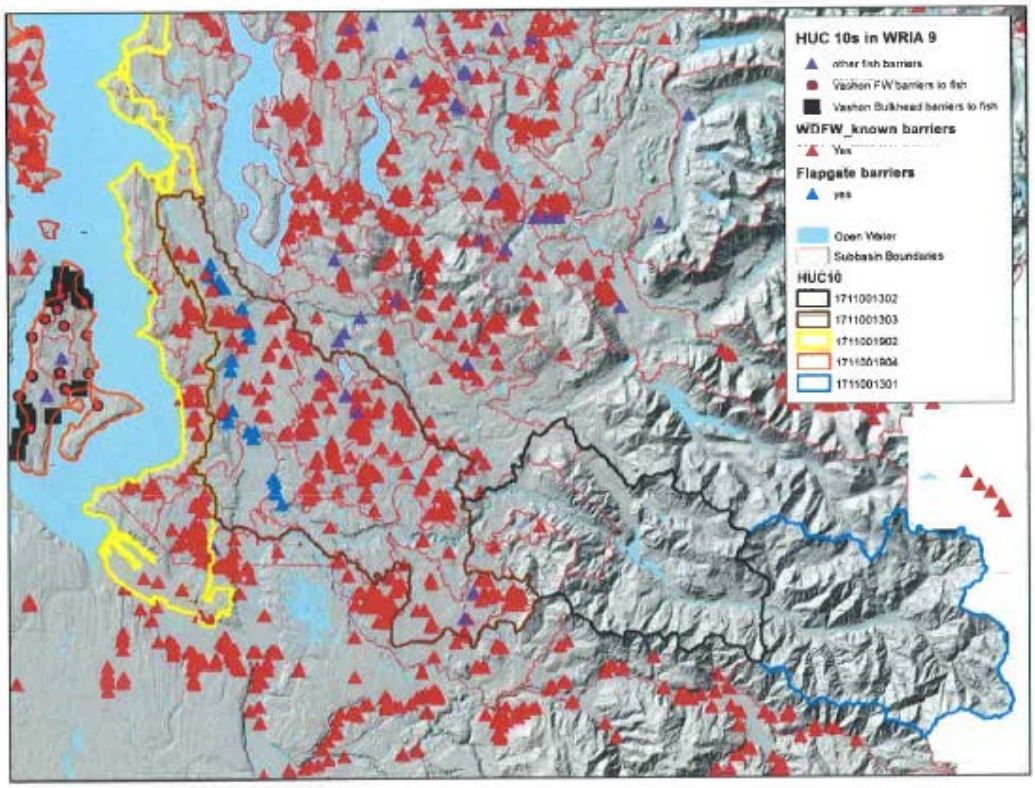


Figure 2: Fish passage barriers in the WRIA 9 HUC 10s. This shows that the density of known fish barriers is very high in the priority HUC 10 selected.



Hood Canal Coordinating Council

NOMINATION: Tahuya River - Frontal Hood Canal HUC 10

August 20, 2015

Fish Barrier Removal Board,

HCCC is recommending the watershed pathways approach for the Fish Barrier Removal Board to address transportation-related fish passage barriers for salmon in the Hood Canal region. By focusing efforts of fish barrier removal on Coho stocks in the Hood Canal, the contribution to salmon recovery and the resulting fisheries would prove to be valuable. The streams on the east side of Hood Canal supports many of the important Coho stocks in the region and in Puget Sound. These watersheds historically are low gradient streams with ponds and flooded wetlands offering ideal low-velocity Coho habitat. Impacts of barriers to Coho over-wintering habitats such as flooded wetlands are of particular concern for these stocks.

The historic off-channel habitat offers important over-wintering rearing habitat and velocity refuge for Coho during high flow periods. Reliance on these areas will be essential for the species survival to mitigate effects of climate change exasperation of stream hydrology and degraded habitat. Off-channel habitat is especially important to Coho productivity and survival due to past land use such as forest practices in this area and the resulting impacts of sediment load within the in-stream habitat.

Fish access to these areas is impacted due to land use activities such as road building and development. The Hood Canal Salmon Enhancement Group, located in Belfair, WA, has conducted surveys of many of the streams in the HUC 10 area. The survey data notates “end of habitat due to barriers” as appropriate. These barriers and impediments will need assessment.

Ownership of barriers in the area is diverse and include private, county, forestry, and state roads. Impervious surfaces are limited with development primarily around lakes, along the shoreline of Hood Canal, and in the town of Belfair.

Please feel free to contact me if you would like further information on this area.

Alicia Olivas
Lead Entity Coordinator

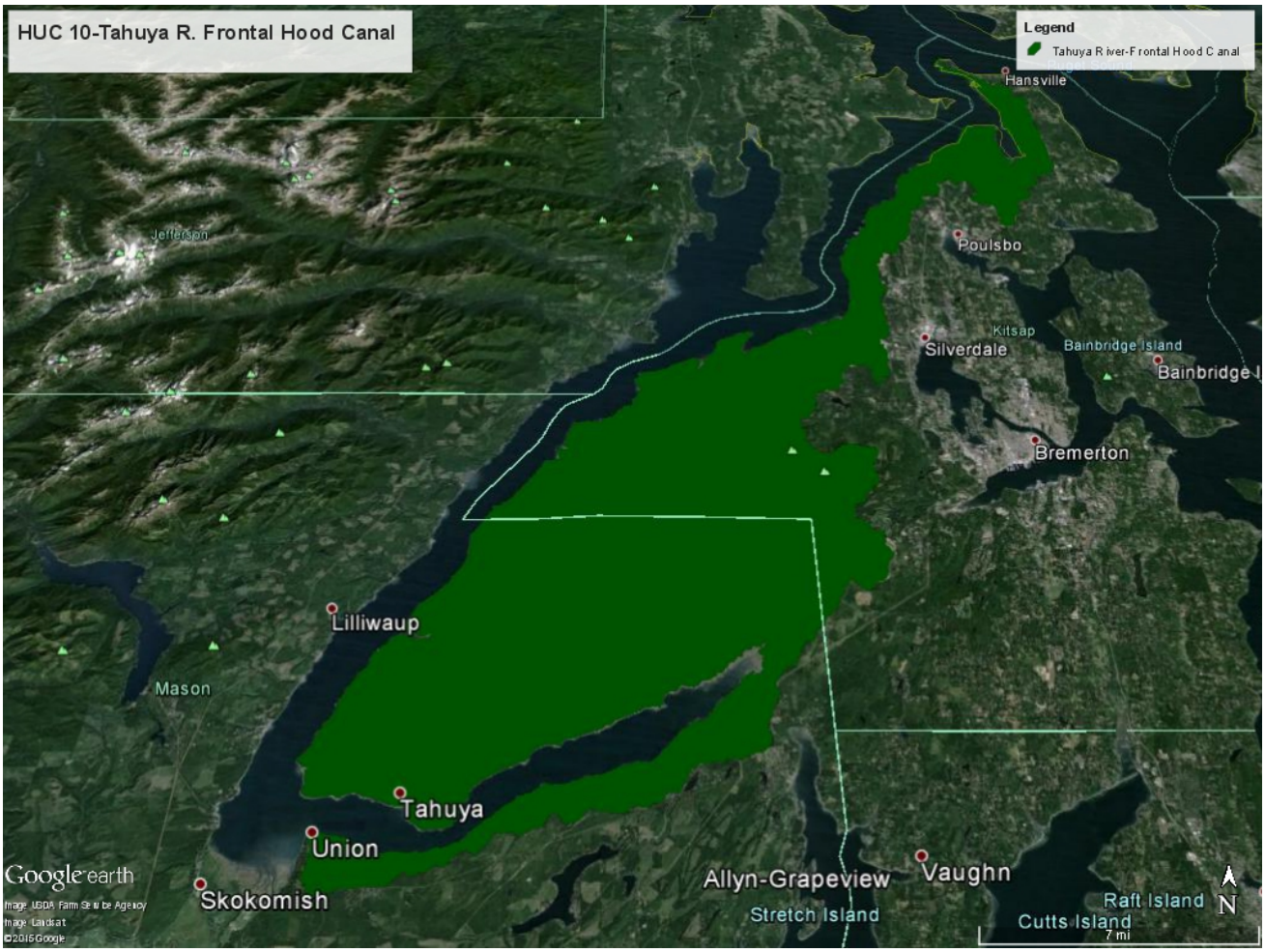


Figure 1: Map depicting the HUC 10 area, Tahuya R. Frontal Hood Canal

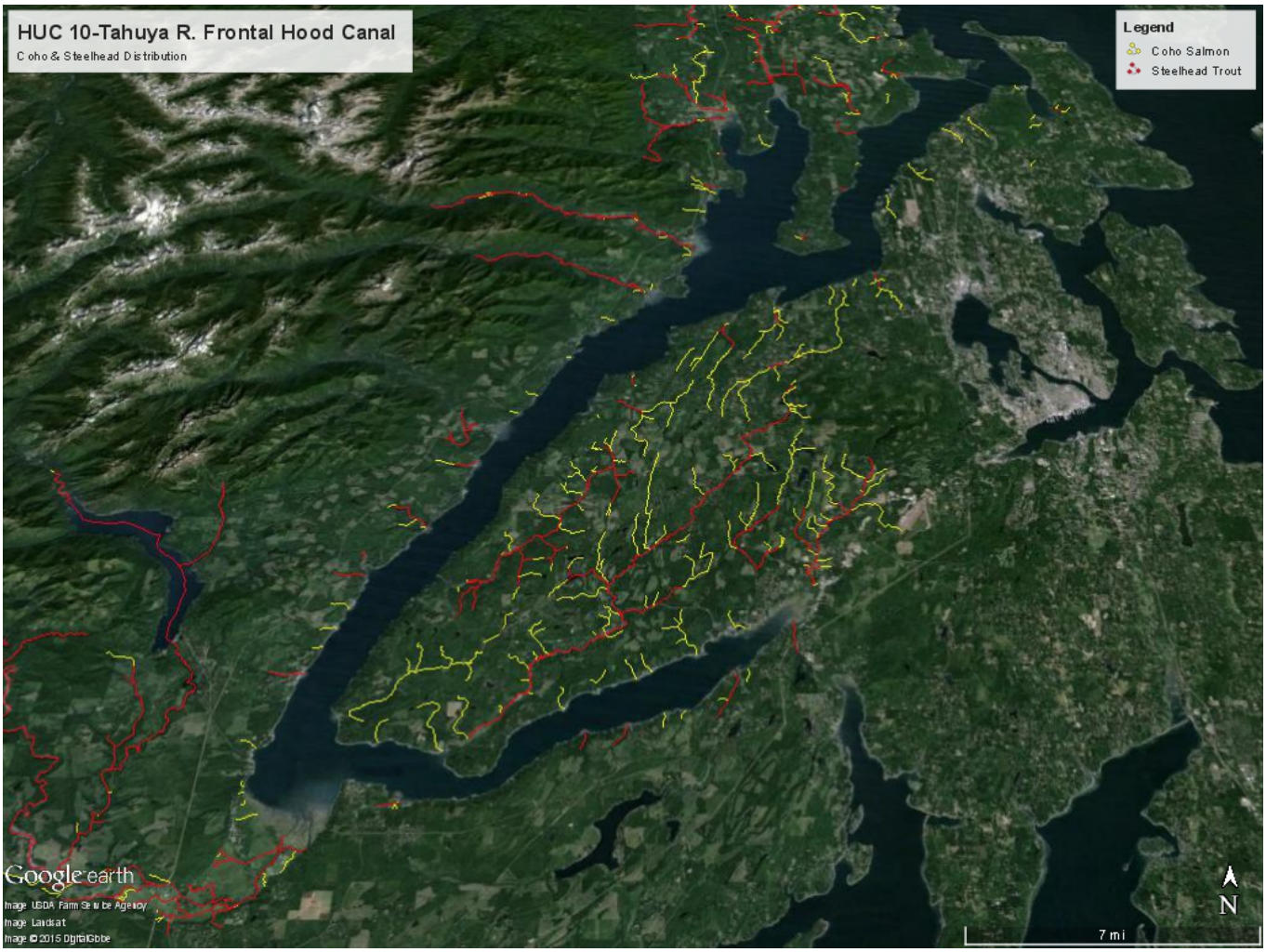


Figure 2: Map depicting distribution of Coho and Steelhead stocks within the HUC 10 area, Tahuya R. Frontal Hood Canal

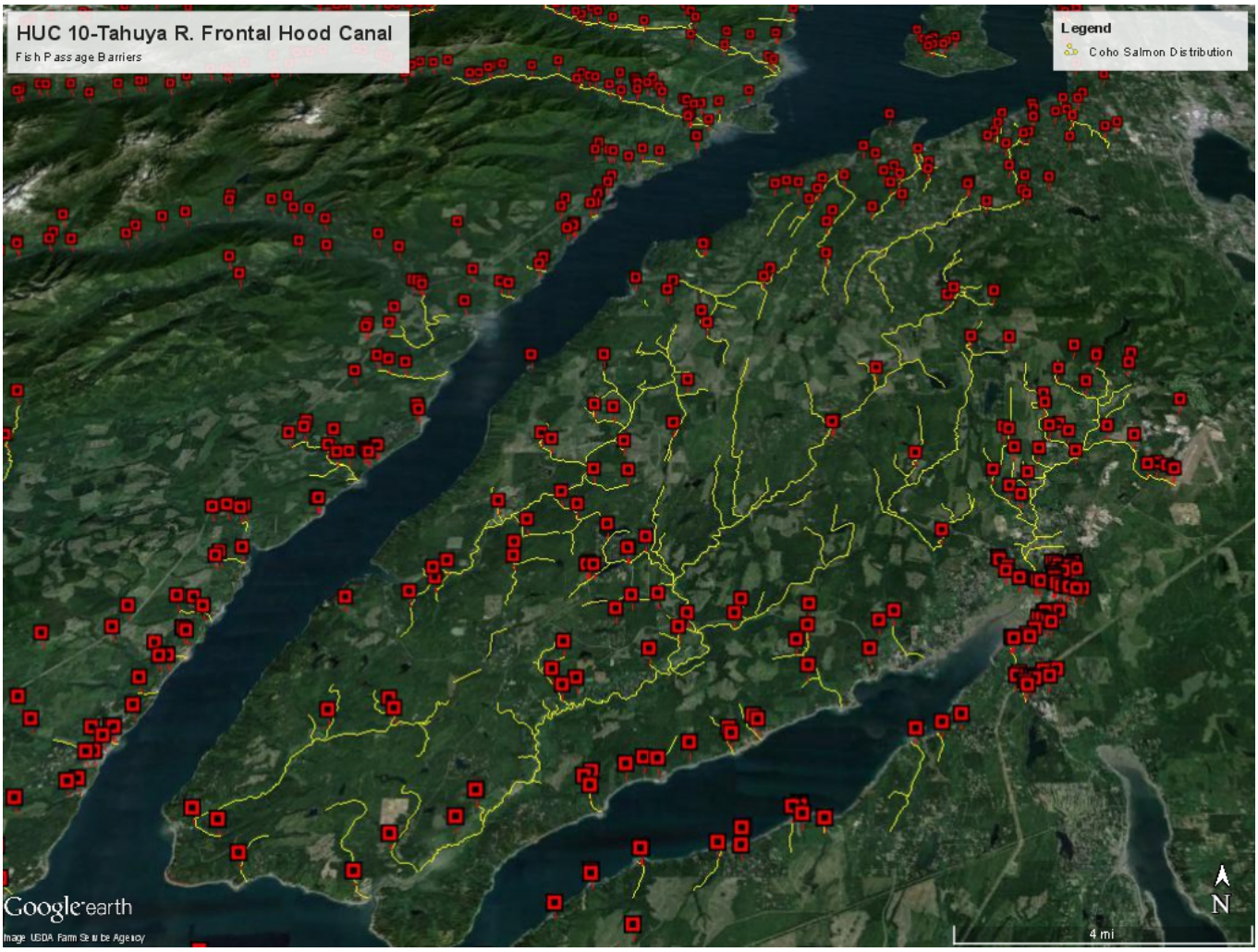


Figure 3: Map depicting identified fish passage barriers compared to Coho distribution

Lake Washington/Cedar/Sammamish Watershed (WRIA 8)

NOMINATION: Middle Sammamish River and tributaries HUC 10

Fish Barrier Removal Board – Nominations from WRIA 8

Watershed Pathway

Nominated HUC 10: 1711001203 – Sammamish River and tributaries

Habitat Conditions

The Sammamish River sub-basin contains several salmon-bearing streams, primary among them are Bear Creek, Cottage Lake Creek, Little Bear Creek, North Creek, and Evans Creek. For Chinook salmon (listed as threatened and the focus of WRIA 8 planning and implementation), Bear Creek and Cottage Lake Creek are among the highest priority restoration areas within WRIA 8 (Tier 1), with a focus on both spawning and rearing habitat. The Sammamish River is also a Tier 1 area, with the primary objective being to improve conditions for migrating juveniles and adults. Little Bear Creek, North Creek, and Evans Creek are the next order of priority—Tier 2. The majority of these systems are home to Chinook, coho, sockeye, and kokanee salmon. Some fish passage projects in the watershed would benefit all species, but the majority of projects are likely to offer the greatest benefit to coho, sockeye, and kokanee.

Some of the tributaries in the lower Sammamish sub-basin are characterized by extensive development, but Little Bear Creek, Bear Creek, Cottage Lake Creek, and Evans Creek offer high quality salmon habitat, especially in the middle to upper reaches, and these systems are used for salmon spawning and rearing. A watershed evaluation conducted during the development of the *WRIA 8 Chinook Salmon Conservation Plan* rated upper Bear Creek and Cottage Lake Creek as having high function and lower Bear, Evans Creek, and Little Bear Creek as having moderate function ("function" considers wetland area, forest cover, riparian cover, impervious surface, flow volume, road crossings, and channel gradient).

WRIA 8 conducted a landcover change analysis in 2010 (Vanderhoof et al., 2011), which evaluated—among other attributes—the relative amount of impervious area across time for several sub-basins in the entire WRIA. The most recent data used in the analysis (2006) illustrates the following conditions for subbasins within this HUC 10 (see table). While WRIA 8 is a heavily-developed watershed, this information shows the relatively less developed character of the areas outside of the urban growth area, which are areas that provide highly functioning salmon habitat for both spawning and rearing.

Impervious Area Represented by Percentage of Subbasin (2006 data)

Sub-Basin Name	WRIA 8 Recovery Tier	Acres (Urban)	% of Subbasin (Urban)	Acres (Rural)	% of Subbasin (Rural)
Lower Sammamish Valley	1	1587.7	27.0	179.4	9.5
Upper Sammamish Valley	1	2401.9	32.2	102.0	7.4
Lower Bear	1	771.9	32.3	199.8	7.1
Upper Bear	1	42.0	6.6	461.1	5.6
Cottage Lake	1	327.5	21.9	531.8	7.8
Little Bear	2	1001.6	38.6	483.1	6.9
Evans	2	762.3	18.6	366.2	6.4
Lower North	2	2638.3	27.5	15.0	8.9
Upper North	2	2917.8	33.7	-	No data
Lower Swamp	3	2743.9	34.0	-	No data
Upper Swamp	3	2593.0	34.1	-	No data

The Sammamish River is characterized by elevated water temperatures that can be detrimental to fish movement during the warm summer months. At the same time, the tributary streams entering the Sammamish offer a critical source of cool water that helps to limit the effects of temperatures within the river. Barrier removal projects within this HUC 10 will ensure cool water flows uninhibited during times of low flow, thus providing much needed cool water to the Sammamish River.

Priorities within HUC 10

Fish passage barriers in this watershed are numerous and diverse. Of the stream systems listed in the previous section, Little Bear Creek has several barriers (local, state, and private) identified as priorities within the *WRIA 8 Chinook Salmon Conservation Plan*, as well as a number of other barriers not necessarily priorities for Chinook but benefitting other, non-listed salmon species. WRIA 8 partners successfully removed a partial barrier at 132nd Avenue NE in the City of Woodinville in 2012 (City of Woodinville and Adopt A Stream Foundation), and the City and Adopt A Stream have targeted the partial barrier at 134th Avenue NE as a future project, pending funding. State-owned barriers exist just upstream at Highway 522, and additional local and private barriers can be found in the Snohomish County portion of the basin. Other priority barriers exist on North Creek and its tributaries, and several smaller tributary streams have passage barriers at their confluence with the Sammamish River, blocking access to habitat for juvenile and adult salmon.

Readiness

WRIA 8 directed grant funding to the barrier removal project at 134th Avenue NE, but the funds were reallocated to another project when the requisite matching funds were unable to be secured. Nonetheless, this remains a viable project pending future funding.

Other barriers within the watershed—on Little Bear Creek and otherwise—would find willing partners at the local jurisdiction level. WRIA 8 has a long history of successful collaboration with its partner jurisdictions, and the primary limitation to larger-scale project implementation is funding. In addition to support from local jurisdictions, the Adopt A Stream Foundation is a very active restoration partner within this HUC 10, and they have implemented several successful restoration projects on private properties, gaining the support of landowners and managing projects through to implementation. Their portfolio includes the successful barrier removal project at 132nd Avenue NE on Little Bear Creek. Adopt a Stream Foundation also has good working knowledge of barriers in this HUC, having conducted stream barrier assessments on Bear, Little Bear, North, and Swamp creeks to locate manmade barriers to fish migration. Information from these assessments has been provided to Washington State Department of Natural Resources and Washington State Department of Fish and Wildlife, and is incorporated in the Fish Passage Inventory database.

Other Information

- ***Are the parent populations classified as "primary" or otherwise considered essential to the ESU?***

  WRIA 8 Chinook (Cedar River and Sammamish River) are identified by NOAA Fisheries as two of the 22 populations comprising the Puget Sound evolutionarily significant unit. WRIA 8 populations are part of the Central/South Puget Sound biogepgraphical region, and are two of the "late" spawning populations that could be considered one of the populations "needing to

get to low risk" in this biogeographical region in support of ESU recovery as identified in the NOAA Fisheries Supplement to the Puget Sound Salmon Recovery Plan.

- ***To what extent would the restored watershed contribute to achieving viable salmonid population(s), relative to other populations?***
  The restored watershed would improve all VSP parameters, as explained in the subsequent bullets. The Sammamish/North Lake Washington Chinook population is in significant need of restoration based on recent population trends.

- ***Spatial structure – does the watershed have potential to be a major or minor spawning area? Would it contribute a meaningful area for expanded distribution and reduced population risk due to increased spatial structure?***
  Spawning habitat for Chinook, coho, sockeye, and kokanee salmon is excellent in both Bear Creek and Cottage Lake Creek (WRIA 8 2005). Little Bear Creek is the least developed of the lower Sammamish River tributaries and also offers good spawning habitat for Chinook, coho, sockeye, and kokanee. The Little Bear system encompasses approximately 15 square miles, and removing passage barriers on this system will improve access to high quality habitat in the middle and upper portions of the subbasin. This would contribute to an increase in spatial structure for salmon in the watershed, as the majority of fish use is currently centered on the Bear/Cottage Lake area.

- ***Abundance – Will the barrier restoration add a meaningful quantity of habitat to the population and to what extent might it contribute to improvements in abundance? Quantify the relationship of the fish potential in the restored watershed to the whole population (e.g., stream area, intrinsic potential, EDT or other life cycle model outputs).***
  Overall abundance for the HUC 10 is low, with reductions in habitat productivity a likely driver. By increasing access to both spawning and rearing habitat, barrier restoration would add necessary habitat to improve the likelihood of population recovery. The EDT results developed for the WRIA 8 Chinook Salmon Conservation Plan suggest high restoration potential for Bear Creek and segments of Cottage Lake, Little Bear, and Evans Creeks.

- ***Productivity – Is the quality of the habitat in the restored watershed worse than, similar to, or better than the quality of habitat in the rest of the population?***
  The habitat quality within this HUC 10 varies greatly. Areas along upper Bear Creek and Cottage Lake Creek offer excellent habitat conditions with protected headwaters, intact riparian buffers, and floodplain connectivity, while other areas within the watershed are highly constrained and modified by urban development. Restoring fish passage is an important piece to the restoration puzzle, as salmon need access to remaining high quality habitat in order to persist in our watershed.

- ***Diversity – Will the expanded distribution result in reduced risk for diversity? (e.g., unique habitat types, ecoregions, flow or temperature regimes that allow unique life history pathways to be successful).***

Watershed Pathway – WRIA 8 Submittal to the Fish Barrier Removal Board

Expanded distribution would help reduce the risk for diversity in this watershed by allowing greater geographic diversity and enhancing rearing opportunities that could increase the number of parr migrants.

North Olympic Peninsula Lead Entity for Salmon

NOMINATION: Pysht River - Strait of Juan de Fuca Frontal HUC 10

The Hoko River was selected as the Priority watershed for North Olympic Peninsula Lead Entity for Salmon to be forwarded to the Fish Barrier Removal Board. The Hoko River has the potential to be abundant with coho, steelhead and chinook. But fish populations are struggling here as they are elsewhere.

The Lead Entity selected the Hoko as the priority watershed in the Pysht River-Frontal Strait of Juan de Fuca HUC 10 (similar to the Water Resource Inventory Area 19) because a lot of passage barrier work has been done here and more is needed but within reach. Doing a concentrated effort in the Hoko with less than 50 culverts to repair, is an area where considerable progress can be made and shown. It will provide focused attention and momentum on the remaining culvert replacements needed on private, county and State land within the watershed. These culverts are listed in the Action Table included here(Haggerty 2015). This prioritization would allow the Hoko to meet the successful benchmark of not having any remaining fish passage concerns.

This work would also build on recent restoration efforts and Road Map Abandonment Plans projects which have helped salmon to recover and improve fish passage and habitat quality in the watershed. There is minimal development within the watershed, and a diverse group of stakeholders including County, State, Tribal, private and timber industry. The watershed has a United States Geologic Survey (USGS) stream gage on it that is run cooperatively by USGS and the Makah tribe, a weather station is in the basin to monitor precipitation and ambient temperatures, and at approximately River Mile (RM) 10 there is a hatchery that produces fall chinook, steelhead and coho.

Photo at left shows a substandard culvert in the Hoko, below a restored area of the Hoko River.

Amount of High Quality Salmon rearing habitat within the nominated HUC 10
The Hoko watershed is home to an estimated one third of all coho production in the Pysht River-Frontal Strait of Juan de Fuca HUC 10 (DOE, WRIA 19).

The Hoko River has 71 square miles of drainage area, 25 miles of mainstem habitat and more than 48 miles of tributary habitat available for coho, steelhead and other salmonid species. Engineered log jam projects have been implemented in the Little Hoko River and Brownes Creek as well as portions of the mainstem.

With the correction of nine culvert barriers the habitat connectivity will increase by 9.44 miles of tributary, which is 19% increase in tributary habitat. These passage corrections would also address access to 5.6 acres of off channel and high quality rearing habitat in the lower portion of the system (Haggerty 2015). This is comprised of two wetland complexes that would be opened up, one is 4 acres and one is 1.6 acres.

Water Quality
The watershed is rain fed and it exhibits the lowest overall gradient in the WRIA, which leads to slower flows in the lower portions. Overall the water quality in the mid and upper 19 miles of the Hoko River is fair-good. This is based off of the Washington State Department of Ecology 303 D list and the Index of Biologic Integrity (IBI) data that was collected.

There are intermittent portion of the upper watershed on the 303D list, but primarily, the highest temperatures are documented in the lowest 6.5 miles of the river. The IBI data is from 2005 and shows an IBI score of 30 in the lower portions of the watershed, which classified it as impaired in the technical report. The mid and upper portions of the watershed have IBI scores of 38 and 40, these scores fall under compromised on a scale of; healthy, compromised, impaired, highly impaired, and critically impaired (Tetra Tech 2005).

Impervious Surfaces and Land Ownership
The Hoko watershed is comprised of County, State, private and industry land parcels. In the lower portions of the watershed the County has several parcels of Park and Recreation land. The Hoko watershed does not have considerable impervious surface area. However, according to the National Marine Fisheries Service Guidelines (1996) it does have a very high density of roads per square mile of land (NWIFC 2013).

The high density of logging roads contributed to 141 landslides during 1981-1993, resulting in increased sediment input in the river system (Smith). Also, for several of the tributaries (Ellis, Cub,

and Bear Creeks) and the mainstem, over an 11 year period, there was an average loss of 39% of the LWD volume (McHenry et al. 1998).

The primary impervious impediment to riverine processes in this watershed is the Hoko Ozette Road which follows the length of the Hoko River for the lower 12 miles and then along the 3 mile length of the Johnson Creek. Where the road follows Johnson Creek it perches wetland complexes and some years the salmon are, essentially, spawning in the ditch. Another culvert along the Hoko Ozette Rd, near RM 5.0, is near the confluence of Gage Creek with the mainstem, creating a partial barrier.

Projects Past and Upcoming

Many habitat restoration projects have occurred in the Hoko watershed. In 2013, the uppermost 2.5 miles of coho and steelhead habitat was opened up by the removal of two barrier culverts and the crossing was replaced with a bridge. This summer 2 miles of road abandonment side cast was removed in the headwaters of the mainstem. In the past, engineered log jams (ELJ) or wood placements have been implemented into portions of the mainstem and throughout the tributaries of Brownes Creek and Little Hoko. In the winter of 2014 there were 600 willows and spruce trees planted in the riparian area near RM 3 on Poncho's Bluff. Funding was also gained and used for development of a Channel Migration Zone Study of the Hoko by the Bureau of Reclamation. In 2005, restoration was completed in Ellis Creek and 191 Creek consisting of the removal of a culvert/bridge and associated fill, and wood placement was done. Maintenance for the planting will occur during the fall/winter of 2015.

Future projects include addressing culverts with removal or replacement, and continuing restoration projects. A preliminary list of projects associated with barrier corrections are listed to the right and on the included pdf. The amount of habitat they will open up, restore and enhance for spawning and rearing is more than 9.44 miles of stream and 5.6 acres of wetland complex habitat (Haggerty 2015).

Watershed	Action Description	Primary Watershed Process Addressed	Process-Input-Condition	Primary Recovery Strategy
Hoko River	Identify water-crossing and road inventories from basin landowners and combine into single basin-wide inventory. Where water-crossing information is lacking or missing, work with landowners to inventory and assess.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Using a basin-wide approach to identify biological, physical, and process-based metrics to use for prioritizing future habitat connectivity projects.	Habitat connectivity	Medium	Hoko River Recovery Strategy
Hoko River	Remove undersized, perched culvert that acts as a partial barrier in Johnson Creek at the confluence with the Hoko River. Currently adult coho and steelhead appear to easily pass upstream through the culvert. The road fill is extremely deep and the culvert is partially collapsed and poses a significant risk of catastrophic failure.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Repair perched culvert (Hoko Ozette Road) on an unnamed tributary to Johnson Creek (trib 19.0176) blocks access to 0.8 miles of low gradient (1-4%) habitat and 0.35 miles of 4-8% gradient habitat.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Repair perched culvert (spur to 7000 Road) on an unnamed tributary to Johnson Creek (trib 19.0178). This culvert blocks access to 0.68 miles of low gradient (2-4%) stream habitat.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Repair perched culvert on an unnamed tributary (19.0189; RM 0.18) to the Hoko River. This culvert blocks access to 0.41 miles of 3-6% gradient spawning habitat.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Two perched culverts on the 9000 Road block access to a 4 acre fish bearing wetland complex. No spawning habitat has been identified upstream of the barrier culverts. Replace with fish passable structure.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Replace Hoko-Ozette Road partial barrier culvert on Wrights Creek with crossing structure that allows for better fish passage. Ensure structure is adequately sized to pass flood flows, debris, and sediment.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Repair partial barrier associated with SR 112 near MP 12.3. This culvert blocks access to a 1.6 acre wetland complex and 0.15 miles of 2-4% gradient spawning and rearing habitat. An additional 0.3 miles of 4-8% gradient habitat is also upstream of the barrier culvert.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	Repair partial barrier culvert on Hoko Ozette Road blocks 0.25 miles of 2-8% gradient spawning and rearing habitat in Hoko Gage Creek (near Hoko RM 5.0).	Habitat connectivity	Medium	Hoko River Recovery Strategy 6
Hoko River	An unmapped right bank tributary to unnamed tributary 19.0199 (RM 0.45) contains a barrier culvert at RM 0.06 that blocks access to about 0.1 miles of spawning habitat. Replace with fish passable culvert or bridge.	Habitat connectivity	Medium	Hoko River Recovery Strategy 6

In addition to the culvert projects list, the list of habitat restoration projects includes of removing creosote pilings and impediments to fish passage in the lower river and enhancing habitat with engineered log jams and riparian plantings. The ELJ's and riparian plantings aid in the sedimentation from landslides and the documented loss of LWD in the system. The specific tributaries with a focus for

restoration work include Johnson Creek with 3 culvert replacements and wood implementation, Gage Creek, and ELJ's in Cub and Bear Creek.

References

Department of Ecology. Water Resource Inventory Area 19 Technical Report. (DOE WRIA 19)

Haggerty, Mike. Water Resource Inventory Area 19 (Lyre-Hoko) Salmonid Restoration Plan. June 2015

McHenry, M., E. Shott, R. Conrad, and G. Grette. 1998. Changes in the quantity and characteristics of large woody debris in streams of the Olympic Peninsula, WA, U.S.A. (1982-1993). Canadian Journal of Fisheries and Aquatic Science Vol. 55, No. 6, pp. 1395-1407.

Northwest Indian Fisheries Commission (NWIFC). 2013. State of the Watersheds Report. Smith, Carol J. Salmon and Steelhead Habitat Limiting Factors ini the Western Strait of Juan de Fuca.

Tetra Tech. Hoko-Lyre Watershed (WRIA 19) Planning Unit Benthic Index of Biotic Integrity Sampling Program Field Report. July 2005

Pierce County

NOMINATION: (1) Carbon River HUC 10; (2) Upper Puyallup River HUC 10

Pierce County Lead Entity
Puyallup & Chambers-Clover Watersheds

August 20, 2015

Julie Henning
Fish Passage Section Manager
Washington State Department of Fish and Wildlife
600 Capitol Way N.
Olympia, WA 98501-1091

RE: Nomination Request to Puget Sound Lead Entities

Dear Julie:

Thank you for the opportunity to nominate priority HUC 10 watersheds and transportation-related fish passage barriers in the Puyallup-White/Chambers-Clover Watersheds for the creation of a fish barrier correction strategy. The WRIA 10/12 Lead Entity committee members provided input on the recommendations for barrier removal watersheds and projects. Our Lead Entity committees include citizens, the Puyallup and Muckleshoot Tribes, non-profit environmental groups, counties, cities, Pierce Conservation District, South Puget Sound Salmon Enhancement Group and WDFW. We work collaboratively on strategies, project prioritization, work plans, and managing the local Salmon Recovery Funding Board grant round to implement restoration actions.

The Watershed Pathway: We would like to recommend the Carbon River Watershed as the first priority in the Puyallup Watershed. South Prairie Creek is located in the Carbon River Watershed; it is among the most productive tributaries in WRIA 10 and has been a major focus of acquisition over the last several years. The Lead Entity recently submitted our ranked list of projects for the 2015 SRFB/PSAR funding and our highest ranked recommendation is for a $1.4 million restoration project on South Prairie Creek (pending SRFB approval).

We nominate the Upper Puyallup River Watershed as the number two priority HUC 10 level watershed in the Puyallup/White Watershed. The Puyallup Watershed has been awarded $9.2 million in funding through the Washington State Department of Ecology's Floodplains by Design Program. The Puyallup River Floodplain Protection at Kapowsin Creek and the Orville Road Protection Project are on the list of Tier 1 projects that will be partially funded by the Floodplains by Design award and are located in the Upper Puyallup River Watershed.

The Carbon River Watershed and the Upper Puyallup River Watershed each have many transportation-related fish passage barriers in state, private and public ownership and correction of the fish passage barriers would allow better access to restored habitat.

The Coordinated Project Pathway:

Ball Creek

In 2014, WSDOT replaced a culvert on SR162 on Ball Creek (Site No. 105 R0512151). This "target" site is shown in the Adobe attachment, "Ball Creek". Pierce County Road Maintenance also replaced a culvert on Ball Creek in 2005 on 106th Street (Site No. 105 R051216c). Pierce County, with the help of Forterra, DOE, and the Conservation Futures Program, recently purchased development rights on 153 acres of farmland surrounding the creek and purchased 37 acres on Ball Creek for habitat restoration. Preliminary engineering is underway for a restoration project that will replace a culvert at the upstream edge of the farm, remove two additional culverts downstream that served as farm access roads, and modify the mouth of Ball Creek as it enters the Puyallup River to remove a barrier of a large drop over angular levee rock. In addition, the creek alignment will be meandered and the cross section will be widened with terraces, pools, and large woody debris to create complexity. The barriers recommended for removal are listed in the attached table.

We appreciate the opportunity to use our collective local knowledge to contribute to this process. Thank you for your consideration,

Sincerely,

Lisa Spurrier

Lisa Spurrier

Lead Entity Coordinator
Puyallup/White and Chambers Clover Watersheds

Skagit Watershed Council

NOMINATION: Finney Creek/Skagit River HUC 10

SKAGIT WATERSHED COUNCIL
A Community Partnership for Salmon

September 4, 2015

Fish Barrier Removal Board
c/o Cade Roler
Ecosystem Services Division Manager
Washington Department of Fish and Wildlife

RE: Watershed Pathway Nomination to FBRB

Dear Ms. Henning,

The Skagit Watershed Council (SWC) nominates the Finney/Middle Skagit HUC 10 (1711000701) to the Fish Barrier Removal Board (FBRB) as the Skagit subbasin where future transportation-related fish passage projects will provide the largest benefits to salmon and steelhead recovery relative to other HUC 10s in WRIAs 3 & 4. SWC and its members conducted quantitative field and spatial analyses of the HUC 10 subbasins in the Skagit based on the criteria that the FBRB provided, and aligned these outcomes with the SWC 2015 Strategic Approach for ESA-listed Puget Sound Chinook salmon and Puget Sound steelhead. We consulted with key stakeholders and committees to gain from the long term institutional knowledge here. The Finney HUC 10 provides large amounts of extant but isolated high quality habitats that will continue to persist given their limited development and water quality concerns.

The Finney HUC 10 offers large amounts of high quality Chinook, steelhead and coho habitats; very modest amounts of current and projected impervious surfaces relative to other areas of the Skagit Watershed and Puget Sound; only a small number of reaches with water temperature concerns or impervious areas; and finally the largest number of completed barrier replacements to date (excluding working forestlands). While the weighted habitat value to be gained by a larger number of culverts is slightly higher in the

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Phone: 360-419-9326 • Fax: 360-336-5936 • E-mail: council@skagitwatershed.org • Web: www.skagitwatershed.org

Frontal Skagit HUC 10, the FBRB's criteria for adequate water quality and limited development partially diminished its value relative to the Finney/Middle Skagit HUC 10.

It's important to note that these analyses and conclusions were completed fairly quickly with available data, though we feel it is adequate to meet the request. Several observations during this process suggested improvements that should be made, including integrating disparate barrier datasets at state and local scales; field-truthing weaknesses in existing data; filling data gaps for known and unknown barriers; integrating fixed barrier datasets; and aligning different culvert replacement initiatives.

We have provided some of our summary statistics as an attachment. Members and staff of the Skagit Watershed Council are available to provide more details as needed; please do not hesitate to contact us.

With Regards,

Richard Brocksmith

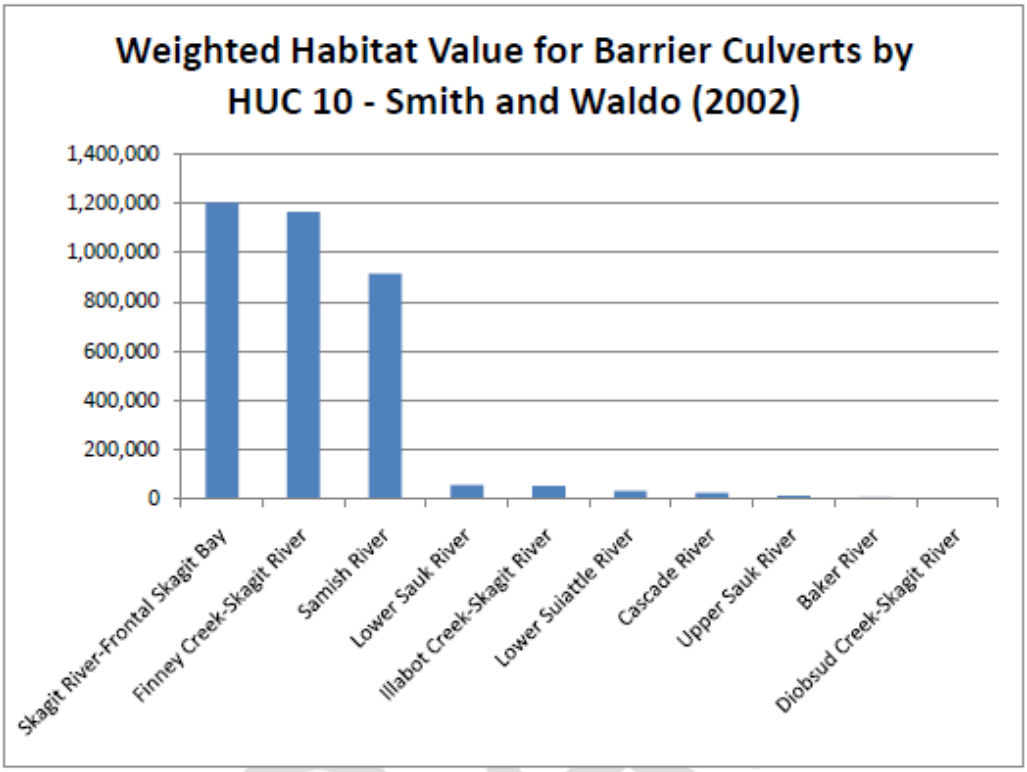
Richard Brocksmith
Executive Director

Attachment – Partial Set of Data Used to Develop Skagit Watershed Council's HUC 10 Nomination to Fish Barrier Removal Board

Smith and Waldo (2003) utilized the circa 2000 stream crossing inventory (Skagit System Cooperative, WDFW, Skagit Fisheries Enhancement Group) and existing data and GIS layers to estimate the amount and type of habitat upstream of each barrier. For the FBRB nomination, this information was sorted and compiled by HUC 10. Methods paper available upon request.

Smith, D. and T. Waldo. 2003. GIS-based Assessment of Salmonid Habitat Upstream of fish Passage Barriers in the Skagit and Samish River Basins.

HUC 10	Weighted Habitat Value for Barrier Culverts
Skagit River-Frontal Skagit Bay	1,201,906
Finney Creek-Skagit River	1,164,939
Samish River	915,198
Lower Sauk River	58,008
Illabot Creek-Skagit River	54,969
Lower Suiattle River	32,882
Cascade River	24,737
Upper Sauk River	12,798
Baker River	8,049
Diobsud Creek-Skagit River	3,344



SWC members and staff used existing GIS layers (WDFW SWIFD 2015 and SSC 2002) to sorted the number of remaining barriers by HUC 10. Both layers possess limitations that should be addressed before moving to site-scales. Additionally, the number of fixed barrier sites was compiled and sorted by HUC 10 with data provided by the Family Forest and Fish Passage Program, Skagit Fisheries Enhancement Group, and Skagit County. We understand that this is a conservative estimate and further effort is needed to improve accuracy.

HUC 10	#_'confirmed'_barriers SWIFD	#_barriers_SSC 2002	#_WSDoT_FFFPP_fixed_sites	#_SFEG_fixed_sites	#_County_fixed_sites
Finney	**134**	**154**	**1**	**6**	**23**
FrontalSkagitBay	242	272	8	1	10
SamishRiver	170	114	4	1	8
IllabotCreek	74	47	1	2	6
LowerSauk	31	47			
DiobsudCreek	15	13			

SWC staff sorted coho salmon and steelhead river miles by HUC 10 using SWIFD spatial data provided by WDFW. The relative amount of anadromous habitat decreases as fish move up the watershed.

HUC 10	Coho All _rm[1]	Coho documented_rm[2]	Steelhead All rm[1]	Steelhead documented_rm[2]
Finney	**190.4**	**127.9**	**269.3**	**156.2**
FrontalSkagit	370.8	141.9	409.5	123.9
SamishRiver	170.1	110.6	152.9	40.7
IllabotCreek	87.6	52.5	117.6	61.6
LowerSauk	74.8	35.7	180.8	112.9
DiobsudCreek	38	13.9	50.7	26.0

SWC staff compiled and sorted WDFW Habitat Science Division's remotely collected land use/land cover data, using the "built" classification as a surrogate for impervious surfaces. The percentage of impervious/built surfaces within the different Skagit HUC 10 subbasins decreases as fish move up the watershed. The Illabot, Lower Sauk, and Diobsud subbasins all have large National Forest and National Park areas, with limited development, so no analysis was completed there.

HUC 10	Total Area sq km	Built Area sq km	Percent Built
Finney	**714.46**	**8.43**	**1.18**
FrontalSkagit	457.95	22.67	4.95
Samish	299.43	5.90	1.97

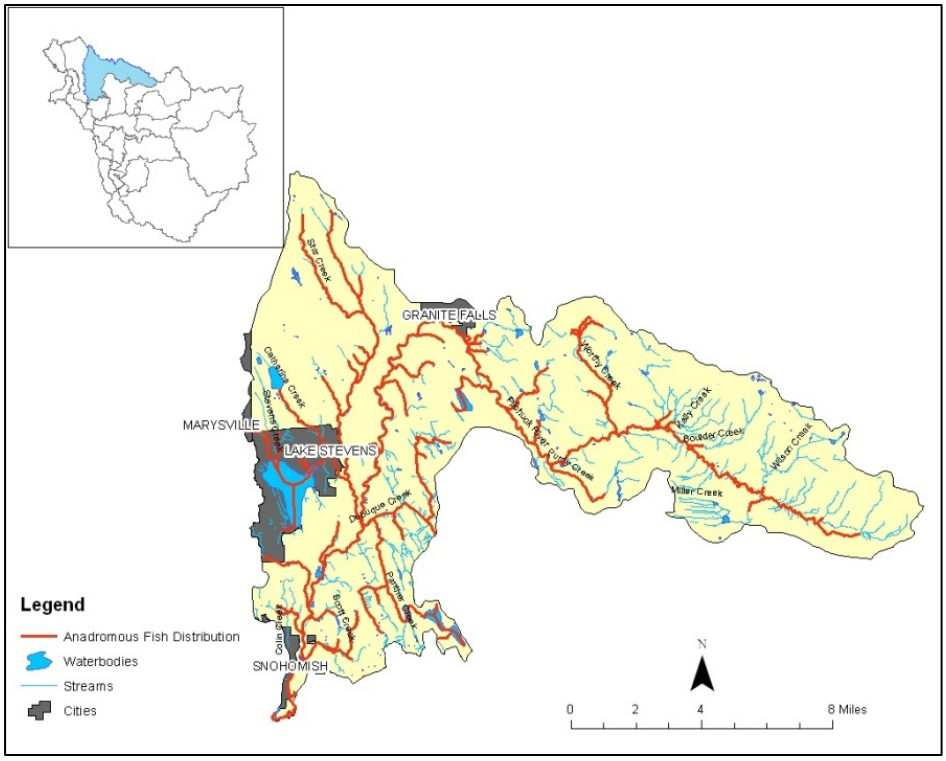
SWC staff sorted Department of Ecology's 303d/305b water quality data set from 2012 for temperature impaired reaches. Finney/Middle Skagit has far fewer designated waters than the Frontal Skagit HUC 10.

HUC 10	303d class 5 - # & rkm	305b class 4A - # & rkm	305b class 2 – # & rkm
Finney	**0**	**2 & 2.67**	**10 & 15.02**
FrontalSkagit	2 & 2.87	10 & 15.80	10 & 12.28
Samish	1 & 1.87	0	2 & 1.41
Illabot	0	0	1 & 2.01

[1] From WDFW "SWIFD_stream_layer' for documented, modeled and presumed presence.
[2] From WDFW 'SWIFD_stream_layer' for documented presence only.

Snohomish Basin

NOMINATION: Pilchuck River HUC 10



The Pilchuck River is a major tributary to the Snohomish mainstem, entering the mainstem just above the Snohomish estuary. Draining more than 130 square miles from its headwaters on Mount Pilchuck and Bald Mountain, it flows through forest, agriculture, rural residential and urban land to its mouth at the City of Snohomish (Savery and Hook 2003). The Pilchuck River HUC 10 watershed contains five sub-basins identified in the Snohomish River Basin Salmon Conservation Plan (SRBSCP) (SBSRF, 2005) – they are the Lower, Middle and Upper Pilchuck River, Little Pilchuck and Lake Stevens sub-basins. The Upper Pilchuck is almost entirely forest land managed primarily by WDNR and private timber companies. As such, the small amount of impervious surface there is the result of forest roads. Middle Pilchuck and Little Pilchuck are primarily rural residential and agriculture with Impervious area at four and five percent respectively. Lower Pilchuck and Lake Sevens sub-basins are highly developed with impervious coverage of 12% and 19% respectively (Purser and Simmonds 2008).

The Pilchuck River has segments listed for temperature on the State's 303d List. A comprehensive temperature TMDL is being conducted by the Department of Ecology but is not yet complete. An assessment conducted by Snohomish County in 2009 revealed that stream temperatures in Middle and Lower Pilchuck River exceeded state standards during July and August but water temperatures in Upper Pilchuck were measurably cooler in the summer months. Tributaries in Upper Pilchuck, such as Worthy Creek (RM 28) had coolest water temperatures. (Snohomish County SWM, 2012)

Importance to Salmon and Steelhead Recovery

Pilchuck River has been identified as a high priority watershed for the recovery of salmonids in the Snohomish River watershed. The Pilchuck supports four Pacific salmon species [Chinook, coho, chum, pink]; anadromous and resident trout [cutthroat, steelhead/rainbow]; and bull trout char. Chinook salmon (1999), steelhead (2007), and bull trout (1999) are listed as "threatened" under the Endangered Species Act (NOAA 1999; 2007; USDI-Fish and Wildlife Service 1999). The Pilchuck provides documented

spawning and rearing habitat for both Chinook and steelhead and rearing/foraging habitat for bull trout. The Puget Sound Steelhead NOAA Technical Recovery Team proposed that Pilchuck River winter-run steelhead be considered a separate demographically independent population (NOAA 2011). In addition, the Washington state fishery co-managers have designated the Pilchuck winter steelhead stock as a distinct stock based on the geographical isolation of the spawning population and an older age structure than other steelhead in the Snohomish River watershed (WDF, WDW and WWTIT 1993). The stock status was rated as depressed in 2002 (WDFW and WWTIT 2002) and has an estimated annual escapement of fewer than 400 adults.

Historically a major Chinook salmon river, the Pilchuck now supports only about one hundred natural origin spawners per year (SBSRTC, 2004). Likewise, steelhead production in the Pilchuck watershed is at a small fraction of its historic abundance. Population performance modeling completed during development of the SRBSCP highlighted the Pilchuck's importance in maintaining and restoring the diversity and spatial structure of the Skykomish Chinook population (SBSRTC, 2004), which overall is at 3.4% of its estimated historical abundance.

Fish Barrier Removal – A Recovery Strategy

Each sub-basin within the Pilchuck Watershed contains different challenges to salmon recovery and therefore was assigned different recovery strategies in the SRBSCP. Improving fish passage, through the removal of human-made barriers, is identified as a first tier recovery strategy in Middle Pilchuck and a second tier strategy in Lower and Upper Pilchuck for Chinook, but is identified as a top priority for Coho throughout the watershed. Since the plan was written, several assessments lead by the Tulalip Tribes, Wild Fish Conservancy, and Snohomish County have identified total and partial blocking culverts within anadromous distribution. Snohomish County has prioritized Pilchuck watershed for replacement of fish blocking culverts on County roads, but many blocking culverts fall under other jurisdictions and private ownership.

In recent years attention has been focused on the diversion dam located at approximately RM 26.4. This structure, built in the 1930s and owned and operated by the City of Snohomish, has a fish ladder but is known to impede the migration of Chinook, coho and steelhead at lower flows and prevent pink and chum from passing upstream altogether. Removal or modification of this structure would improve or allow passage to 14 miles of mainstem and 23 additional miles of tributary spawning habitat primarily in Upper Pilchuck Sub-basin where habitat conditions remain somewhat intact. In 2013, the City of Snohomish applied for SRFB dollars to design the partial removal of the structure but the project was not moved forward over design concept concerns. Basin partners consider this a high priority action and continue to look for ways to encourage and assist the City to push this project forward.

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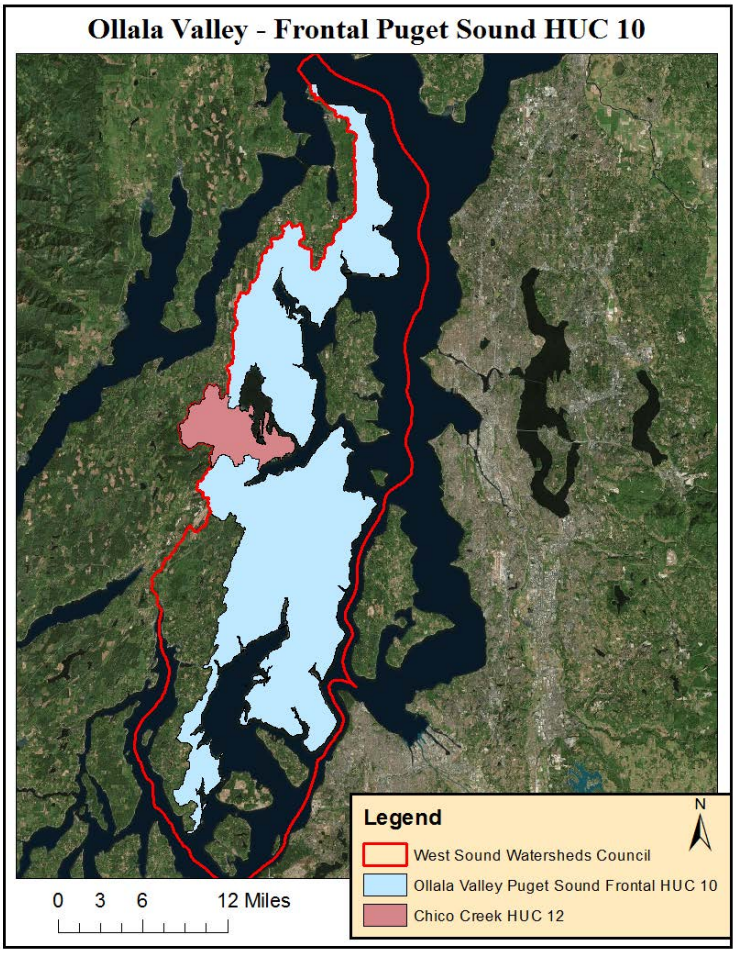
West Sound Watersheds Council

NOMINATION: Ollala Valley - Frontal Puget Sound HUC 10



September 24, 2015

Mr. Cade Roler
Washington Department of Fish and Wildlife
1111 Washington St SE, Olympia, WA 98501

RE: Fish passage Barrier Removal Board Nomination – Chico Creek

Dear Cade,

I am writing this letter to you on behalf of the West Sound Watersheds Council (WSWC) to consider this nomination for the Watershed Pathway.

Within the HUC 10 (Olalla Valley Puget Sound Frontal - #1711001907), the WSWC wishes to focus on the Chico Creek watershed. Chico Creek is a high priority for the WSWC due to the following conditions:

- The presence of high quality, intact habitat that COULD be accessed by salmonids if downstream culvert issues were addressed;
- Relatively low amounts of current (and future projected) impervious surface in the watershed area in question;
- Culvert/barrier replacements already completed, or planned, in the watershed area;
- Other habitat-related investments being made in the watershed;
- Committed stakeholders working in the watershed;
- Importance to Suquamish Tribe and their involvement in the watershed.

Watershed Importance

Chico Creek is located in Central Kitsap County on Dyes Inlet. The stream is one of the largest salmon and steelhead watersheds in the West Sound, with good lowland and upper habitat in the watershed. The stream is also culturally important to the Suquamish Tribe.

The Puget Sound Salmon Recovery Plan (Shared Strategy for Puget Sound, 2007) classifies Chico Creek as a "Tier 1 stream" and identifies it as a high priority for habitat protection and restoration.

Watershed Assessment

In July 2014, the Suquamish Tribe released a comprehensive assessment of the Chico Creek watershed to develop a plan to identify protection and restoration strategies that would help prioritize specific restoration actions.

According to the Chico Creek Watershed Assessment for the Identification and Protection and Restoration Actions report (2014), the Chico Creek watershed covers 16.3 square miles in eastern Kitsap County and supports the natural production of native salmonid populations including chum, coho, steelhead, and cutthroat trout. The watershed and adjacent nearshore areas have long supported the Suquamish people and these areas are geographically important to the Tribe's cultural history. The watershed contains localized areas of high quality habitats that are identified as important salmonid refugia.

The following information was extracted from the Chico Creek Watershed Assessment for the Identification and Protection and Restoration Actions report (2014) and shows some examples of fish barriers in the Chico Watershed. For more detailed and complete information, please follow this link to the report: http://suquamish.org/Portals/0/Chico Watershed Assessment incl appendices.pdf

Photo of the triple box culvert at NW Golf Club Hill Road (view upstream).
Photo taken November 2012 by Shawn Higgins, NSD.

Photos of Dickerson Creek at the Navy railroad, view looking downstream. Upper photo from October, 2012 (photo by Tim Abbe, NSD). Lower photo from December 2010 shows blockage of the 48”diameter culverts (photo by Jon Oleyar, Suquamish Tribe).

Photo of Dickerson Creek at the Navy railroad culverts. View upstream; February 2013 (photo by Paul Dorn, Suquamish Tribe).

Photos of log weirs on Dickerson Creek downstream of Navy railroad in 2007 (Upper; photo by Jon Oleyar, Suquamish Tribe) and in February 2013.

Photo of incised channel segment on Dickerson Creek downstream of failed log weirs (view downstream). Note box at toe of right bank is exposed septic basin. Photo by Tim Abbe, NSD (2/12/2013).

Investments in the watershed

Kitsap County and the Suquamish Tribe have been active in restoring the Chico Creek Watershed for over ten years. The Salmon Recovery Funding Board invested funding for numerous phases of the in-stream restoration projects at Kitsap Golf and Country Club to restore natural stream flow and sinuosity and provide instream structure.

The Suquamish Tribe recently completed a culvert removal project on Kittyhawk Dr. at the Chico Creek estuary. This culvert was the number one fish passage barrier for the watershed prior to this work. See photos below.

Kittyhawk Dr NW July 1, 2014 (Before)
Photo by Tom Ostrom, Suquamish Tribe

Kittyhawk Dr NW removed 9/27/2014 (After)

Kittyhawk Project - The project removed the road, its undersized culvert, and approximately 6,500 cubic yards of fill. The total project cost was nearly $2M. The initial survey and design for the project was funded by the Salmon Recovery Funding Board. Additional funding came from the Suquamish Tribe, Kitsap County, ESRP, the US Navy and EPA. The project is also notable for considerable collaboration

with the Washington State Department of Transportation (WSDOT), who owns and maintains a culvert under Hwy 3 immediately upstream. The WSDOT plans to remove the remaining culvert at SR3 (shown above in the photo on the right).

Keta Park Project - Kitsap County acquired 5.5 acres on Chico Creek, at the last free flowing section of Chico Creek floodplain, and the Suquamish Tribe is undergoing restoration planning at this property.

I appreciate you accepting this nomination and for your assistance. If you require further information, please do not hesitate to contact me at (360) 337-7098. Thank you again for your help.

Sincerely,

Marian Berejikian

WRIA 13 Salmon Habitat Recovery Committee

NOMINATION: McLane Creek - Frontal Puget Sound HUC 10

Watershed Pathway:

The WRIA 13 Salmon Habitat Recovery Committee chooses to nominate the McLane HUC 10 watershed for funding consideration. This watershed encompasses the freshwater drainages of Henderson, Budd and Eld Inlet, exclusive of the middle and upper Deschutes River. The South Puget Sound is a significant spawning and rearing area for many salmonid and forage fish species. The nutrient-rich waters are ideal forage areas particularly for estuary-dependent ones such as Chinook, Chum and cutthroat. The shallow, inter-tidal areas provide optimal rearing conditions for these species, including vegetated cover and abundant prey. In addition to the widely distributed Deep South Sound Tributary Coho, several other species are of some significance to this region. Chum salmon spawn extensively in WRIA 13. Several runs of steelhead are also observed in the small drainages of this area. Resident cutthroat are found in all but the smallest drainages.

The freshwater systems in WRIA 13 support four native species of salmon: Coho, chum, cutthroat, and steelhead. In addition to these species, the nearshore areas support juvenile Chinook from numerous central and northern Puget Sound systems, such as the Puyallup River, with fish found from as far north as the Skykomish River (Squaxin Island Tribe, 2015). There are also hatchery Chinook present within the Deschutes River, with some strays found in Woodland and Percival Creeks. Habitat along the nearshore and in pocket estuaries that dot the inlets is especially significant for estuary dependent species such as Chinook, Chum and cutthroat juveniles that feed upon the forage fish that spawn along the beaches. Similarly, pool habitat in smaller streams is critical for overwintering Coho and resident fish.

Sub-basins and marine shorelines having restoration potential must incorporate habitat functions for all life history phases, which include spawning, rearing, and migration. WRIA 13 gives strong consideration to projects that benefit salmonids listed under the Endangered Species Act and those ranked as critical or depressed under SaSI. With the declining Coho populations and risk of ESA listing, Coho are a priority stock for both restoration and protection. This headwater species is dependent upon the freshwater for major portions of its lifestages for spawning adults and rearing for juveniles as they spend up to two years in the streams before out-migrating to the marine waters it remains committed to its vision of a multi-species approach. Additionally, to ensure the continued health of chum runs within South Sound, chum are a priority for restoration and preservation activities.

Over the last 15 years, the Lead Entity Committee has focused on tributaries and first and second order barrier removals due to the tremendous fill present over several mainstem fish passage barriers that have proven cost-prohibitive for the Lead Entity Committee to accomplish. To date, the Committee has opened up over 30 miles of available habitat for all salmonids. The Squaxin Island Tribe is a valuable partner within the watershed and contributes extensive research to help in prioritizing actions and areas. All fish species and life stages are priorities for protection and restoration actions and with

guidance from the Tribe, removal of passage barriers, protection and/or restoration of estuaries and feeder bluffs, and bulkhead removals are the top priorities for the WRIA.

The top four culverts that remain as blockages will open up over ten miles of habitat for Coho, Steelhead, cutthroat, chum and Chinook. These culverts have been a priority for funding since 2001 but the limited funding available to WRIA 13 has truncated the amount of work the Lead Entity has been able to implement. The citizens that reside in WRIA 13 are involved in the process and selection of projects, in addition to being active in their local organizations. The Citizens Committee continues to grow and is currently comprised of over 12 organizations and citizens groups, active with the local and statewide elected officials. Opening up barriers in the top five culverts in WRIA 13 allows Steelhead, Coho, Chinook, chum and cutthroat to spawn in over 10 miles of habitat. All of these projects have preliminary designs and community support for implementation. Additionally, they drain into restored or intact pocket estuaries, benefiting juvenile Chinook, coho, chum, and steelhead by increasing nutrient input from the uplands. In recent years, the Lead Entity has engaged the community adjacent to McLane Creek, which would break into a community that has been reticent to engage in salmon recovery efforts. Project sponsors, with the support of PSAR capacity funds, have been able to engage these landowners and garner their support. We are excited to put forth projects in 'their' watershed, with their support.

The fresh and surrounding marine waters are known feeding and migration corridors for ESA threatened Chinook salmon (*Oncorhynchus tshawytscha*), Coho salmon (*Oncorhynchus kisutch*), a Species of Concern, ESA threatened steelhead (*Oncorhynchus mykiss*), chum salmon (*Oncorhynchus keta*) and cutthroat trout (*Oncorhynchus clarkia*) all of which are Tribal species of interest. Coded-wire tagged Chinook juveniles from rivers systems throughout Puget Sound were found during beach seine investigations at adjacent sites indicating the likelihood that young of the year Chinook utilize the rich estuarine waters of Oakland Bay and adjacent Budd for rearing opportunities. The highest catch per unit effort was noted in late June and early July at an average of ten Chinook per event. Calculations for this time period suggest densities approaching 735 juvenile Chinook per hectare at Eagle Point (Squaxin Island Tribe, unpublished data).

The McLane HUC 10 contains WRIA 13's highest priority streams for salmonids, outside of the City of Olympia's urban core. It also contains numerous historic fish passage barriers that require remedy and have been beyond the reach of the Lead Entity's SRFB / PSAR allocation. Henderson Inlet to the east, is comprised of 21.4 miles of shoreline, with over 20 miles of salmon-bearing streams, with 12% impervious surfaces throughout the entire inlet. Budd Inlet contains 18.4 miles of shoreline, with over 60 miles of salmon-bearing streams, with 6.5% impervious surfaces throughout the inlet. Eld Inlet, the western-most Inlet, contains 40 miles of shoreline and over 25 miles of salmon-bearing streams, with 2.9% impervious surfaces throughout the inlet.

To create a robust list for consideration, the WRIA 13 Salmon Habitat Recovery Group pulled projects directly from the current 3-year-work-program that has been reviewed and adopted locally, in addition to be reviewed by the Puget Sound RITT and the SRFB Review Panel.

Fish passage barriers exist on Thurston County, Cities of Olympia, Lacey and Tumwater, Green Diamond Resource Company, private landowners, and Washington State property. The freshwater bodies of the McLane Creek HUC 10 are moderately affected by temperature 303(d) listings, as there are extensive wetlands throughout the area, some of which have been altered to create man-made lakes. These wetlands also often provide ideal cold-water refugia, which allows for spatial diversity within the watersheds.

The area supports extensive Tribal and sport fishing, opportunities which will be great enhanced by opening up the numerous barriers that exist, particularly those on the mainstem systems. The communities that inhabit the McLane Creek HUC 10 are primarily supportive and where there is hesitation, the stakeholder committee commits time and funds to outreach. Since 2007, the Lead Entity has invested their PSAR Capacity funds project sponsors to conduct project development and landowner engagement, an investment that has paid off in support, cooperation and numerous project designs.

As an example, the top five blocking culverts will open up 10 miles of spawning and rearing to anadromous salmonid species in WRIA 13 by restoring stream processes through the replacement of the following culverts:

1. Gull Harbor @ Boston Harbor Road: This culvert is impassable due to the combination of being undersized, slope, tailwater submergence and inlet drop. This culvert will be replaced with an 8X15' box culvert. This phase has permit ready designs and draft permit documents.

2. Ellis Creek @ Gull Harbor Road: This culvert is a barrier because the slope is 2.3 percent, flow velocity at 25 cfs is 7.4 fps and the outfall drops is about 3 feet. There is 53' of fill above this structure. This culvert will be replaced with a stream simulation design box culvert, size to be determined in final designs. In 2005, preliminary designs were completed.

3. Green Cove @ Country Club Road: The culvert is a barrier due to the slope and velocity. The culvert has been retrofitted numerous times with horizontal steel baffles. This culvert will be replaced with a stream simulation design box culvert, size to be determined in final designs. In 2004, a feasibility report was completed. This culvert is located on stream mile .6 and will open 3 miles of WDOE Class "A" stream habitat plus headwater wetlands and a lake to salmonids at all life stages. This project has preliminary designs.

4. Ellis Creek @ Gull Harbor Road: This culvert is a barrier due to a 2.3% slope, velocity, and a three-foot outfall drop. Preliminary sketches have been created to replace, or completely remove, this culvert.

5. Ellis Creek @ East Bay Drive: This barrier culvert blocks passage 66% of the time to anadromous fish use. It is undersized, a velocity and slope barrier. The culvert has full designs and is owned by the City of Olympia, who attempted removal in 2008 but failed to complete the replacement due to the efforts of an inexperienced contractor.

Additionally, all of these culverts are undersized for passing flood flows and woody debris. All structures built will comply with recent WDFW stream passage criteria.

The three streams included above empty into southern Puget Sound. The three creeks travel through some of the most intact habitat in the south Puget Sound. Green Cove Creek starts at the protected Grass Lake flows through the Evergreen Parkway then through timbered ravines and eventually feeds Green Cove on Eld Inlet. The unnamed tributary that flows into Gull Harbor flows through land protected by the Captiol Land Trust as a habitat corridor and connects a Budd to Henderson Inlet Conservation Corridor. The Corridor extends from the Woodard Bay Natural Area Preserve through conserved wetlands and into the over 100 acres estuary and riparian area owned in perpetuity by Capitol Land Trust. The Ellis Creek basin is a rural watershed that is nearly intact with only 3.9% impervious surfaces; the lower mainstem of the creek is located entirely within the City of Olympia's Priest Point Park. The two tributaries join the mainstem above the Gull Harbor crossing have good spawning habitat with largely intact canopy of Douglas-fir, cedars, maple and alder with numerous logjams and springs. These creeks support coho, chum, cutthroat trout and steelhead. All three watersheds have between 4% and 6% impervious surfaces and the City of Olympia has downgraded the density allowed within the Green Cove basin.

Below is a small synopsis of the SRFB / PSAR proposals that have built the design work for these culverts, all of which have been identified by the WRIA 13 barrier assessment initially:

Project # or Name	Status	Status of Prior Phase Deliverables and Relationship to Current Proposal?
10-1895	☐ Completed	Permit Ready Designs & Permit Documents Completed. This project is the final step in removing the culvert.
06-2261	☐ Not Funded*	Design proposal – Status: Alternate. The request was not funded due to the high cost of the project. This proposal is a Large Cap Proposal incorporating three barrier replacements and a design projects.
04-1386	☐ Not Funded*	Design proposal – Status: Alternate. The request was not funded due to the high cost of the project. This proposal is a Large Cap Proposal incorporating three barrier replacements and a design projects.
13-1264	☐ Dead	The previous request was not funded due to the high cost of the project. This proposal is a Large Cap Proposal incorporating three barrier replacement projects.

Replacing these main stem culverts on priority streams that flow into Puget Sound will increase the diversity and amount of fish habitat available and improve priority freshwater habitat. Correction of human-made fish passage barriers such as impassable culverts, dams, floodgates, degraded fishways, or weirs is one of the most cost effective methods of salmonid enhancement and restoration (WDFW, 1999). Replacing undersized culverts improves freshwater quality by maintaining stable flows in creeks that drain directly into southern Puget Sound pocket estuaries. As identified in sub-strategy A.6.1 of the

2014/2015 Action Agenda, this phased project is a high priority project identified on the WRIA 13 3-Year Work Plan and addresses sub-strategy A.2.3 to fix projects caused by existing development.

These five culverts are a snapshot of the barrier opportunities that exist in the McLane HUC 10. Numerous other barriers exist and can be made shovel-ready with a small investment of design funds. These culverts have benefitted from the support and backing of the stakeholders in WRIA 13, represent a variety of landowners, and are ready to proceed to implementation within the same biennium that allocation occurs. The permit agencies, co-managers, and citizens participated in the design phases and support has already been garnered. Funds for implementation for these examples will open up 10 miles of anadromous habitat, benefitting the resource and the inhabitants in terms of flood risk mitigation and local job creation. Additionally, replacing these culverts prevent the habitat degradation that will occur with a catastrophic failure.

Focusing funds in an area within close proximity to the State Capital allows the elected officials to see firsthand the benefit of their investment during field visits during and following construction. The strong citizen science involvement in the watersheds, through Stream Team, Stream and Salmon Stewards, and South Sound GREEN, these projects and their effects on watershed health will be widely monitored and reported on by both adults and children. This work will build upon numerous protection, estuary restoration, bulkhead removal and fish passage projects that have occurred. On the eastern portion of Budd Inlet alone, the Lead Entity Committee has removed a bulkhead at Priest Point Park and will remove another at Burfoot County Park in 2016; removed a blocked road embankment and restored an impounded estuary at Mission Creek; removed an earthen dam on Gull Harbor tributary; and protected all of the Gull Harbor estuary, riparian area and upland. The stakeholder committee is committed restoration and protection of salmon stocks and their habitat and has a strong history of collaborative engagement to that end.

WRIA 14 Salmon Habitat Recovery Committee

NOMINATION: Goldsborough Creek - Frontal Puget Sound HUC 10

Watershed Pathway:

The WRIA 14 Salmon Habitat Recovery Committee chooses to nominate Goldsborough Creek HUC 10 watershed for funding consideration. This watershed encompasses the freshwater drainages of Totten and Case Inlets, Oakland Bay and Hammersley Inlet. The South Puget Sound is a significant spawning and rearing area for many salmonid and forage fish species. The nutrient-rich waters are ideal forage areas particularly for estuary-dependent ones such as Chinook, Chum and cutthroat. The shallow, inter-tidal areas provide optimal rearing conditions for these species, including vegetated cover and abundant prey. In addition to the widely distributed Deep South Sound Tributary Coho, several other species are of some significance to this region. Chum salmon spawn extensively in WRIA 14. Several runs of steelhead are also observed in the small drainages of this area. Resident cutthroat are found in all but the smallest drainages.

The Goldsborough Creek HUC 10 represents the most pristine and productive habitat in all of South Sound. Over the last 15 years, the Lead Entity Committee has focused on mainstem fish passage barrier removal, opening up over 70 miles of available habitat for all salmonids. However, many tributaries and first and second order saltwater drainages remain impeded and in need rectification. Additionally, the Burlington Northern Santa Fe railroad truncates available habitat on major stream systems, such as Skookum Creek. The Squaxin Island Tribe is a valuable partner within the watershed and contributes extensive research to help in prioritizing actions and areas. All fish species and life stages are priorities for protection and restoration actions and with guidance from the Tribe, removal of passage barriers, protection and/or restoration of estuaries and feeder bluffs, and bulkhead removals are the top priorities for the WRIA.

The freshwater systems support the surrounding marine waters, which are known feeding and migration corridors for ESA threatened Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), a Species of Concern, ESA threatened steelhead (*Oncorhynchus mykiss*), chum salmon (*Oncorhynchus keta*) and cutthroat trout (*Oncorhynchus clarkia*) all of which are Tribal species of interest.

Coded-wire tagged Chinook juveniles from rivers systems throughout Puget Sound were found during beach seine investigations at adjacent sites indicating the likelihood that young of the year Chinook utilize the rich estuarine waters of Oakland Bay for rearing opportunities. The highest catch per unit effort was noted in late June and early July at an average of ten Chinook per event. Calculations for this time period suggest densities approaching 735 juvenile Chinook per hectare at Eagle Point (Squaxin Island Tribe, unpublished data).

The majority of the Chinook captured (~40%) were from the Puyallup River system with the majority of those being ESA endangered White River spring Chinook. The second (~33%) and third (~17%) most

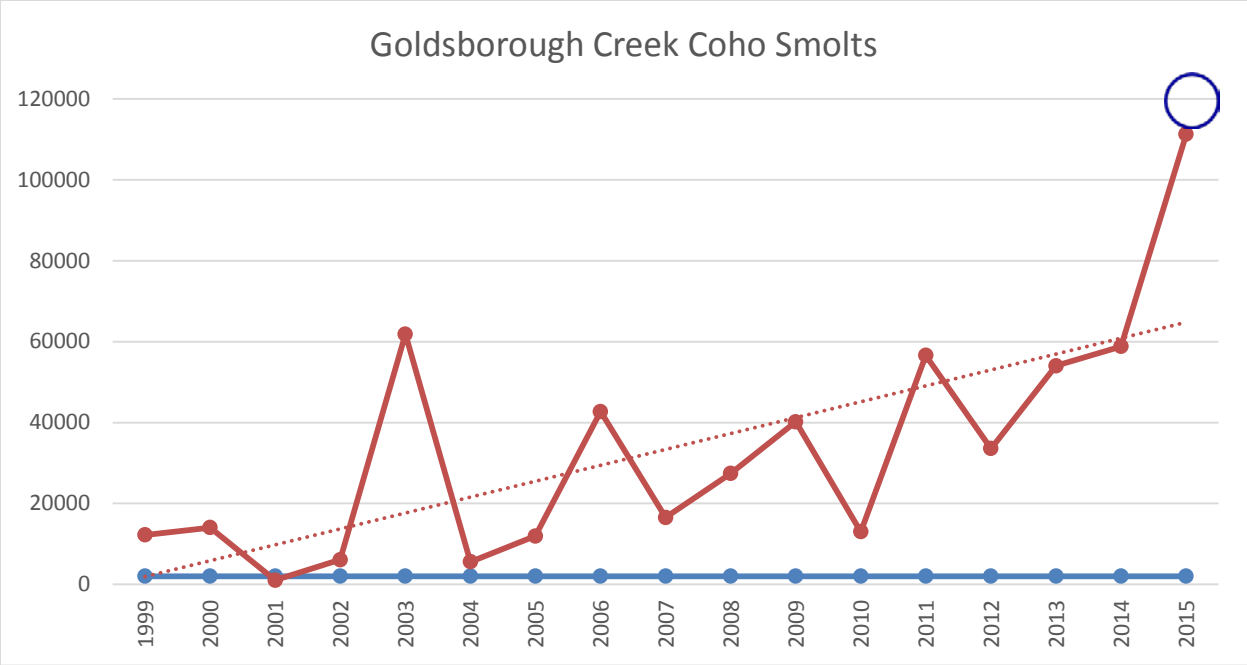
caught Chinook were from the Green and Grover's Creek watersheds. Sub-yearling Chinook from throughout Puget Sound were found from as far away as the Wallace River system representing a minimum of a 106 mile swim over an average of 55 days.

The Squaxin Island Tribe has conducted two years of acoustic tracking of naturally produced Coho smolts captured at the Goldsborough Creek smolt trap located upstream of the proposed site. Five acoustic receivers were placed throughout West Oakland Bay and two receivers at the mouth of Hammersley Inlet at Pickering Passage. The null hypothesis was that tagged fish would rapidly pass through the project site to take up temporary residence in the passages of South Sound. This was not the case. In both years, almost all of the Coho stayed within the project area for an average of 15 days before out-migrating into Pickering Passage.

Fish passage barriers exist on Mason County, Green Diamond Resource Company, Simpson Railroad, Port Blakely Timber Company, Burlington Northern Santa Fe, private landowners, and Washington State property. The freshwater bodies of the Goldsborough Creek HUC 10 are moderately affected by temperature 303(d) listings, as there are extensive wetlands throughout the area, some of which have been altered to create man-made lakes. These wetlands also often provide ideal cold-water refugia, which has led to increasing numbers of Coho outmigrants. Former WDFW biologist Chuch Baranski referred to many areas of WRIA 14 as 'Coho factories,' (Chuck Buranski, personal communication, 2004).

The freshwater systems in WRIA 14 support four native species of salmon: Coho, chum, cutthroat, and steelhead. In addition to these species, the nearshore areas support juvenile Chinook from numerous central and northern Puget Sound systems, such as the Puyallup River, with fish found from as far north as the Skykomish River (Squaxin Island Tribe, 2015). There are also hatchery Chinook present within the Deschutes River, with some strays found in Woodland and Percival Creeks. Habitat along the nearshore and in pocket estuaries that dot the inlets is especially significant for estuary dependent species such as Chinook, Chum and cutthroat juveniles that feed upon the forage fish that spawn along the beaches. Similarly, pool habitat in smaller streams is critical for overwintering Coho and resident fish.

Goldsborough Creek is the only system that is seeing an increase in Coho spawning in all of South Sound. Since 2001 when the Goldsborough Dam was removed, the system has seen an eight-fold increase in Coho smolt outmigrants. The Lead Entity Committee has focused numerous fish passage and acquisition projects in the basin, making it our priority watershed. Below is a graphic depicting the increase of smolts in this watershed alone since the dam was removed in 2001.



The Goldsborough Creek HUC 10 contains WRIA 14's highest priority streams for salmonids. The Totten / Little Skookum Inlet sub-basin is comprised of 70% commercial forestland, with rural agriculture making up another 28%. The freshwater watersheds offer over 13 miles of anadromous streams. Oakland Bay / Hammersley Inlet freshwater watershed is composed of 161 square miles, with over 90 anadromous stream miles. Case Inlet encompasses approximately 97 square miles, with over 50 miles of freshwater anadromous streams. The entire HUC 10 is 1.1% developed. 139 independent streams weave throughout the Goldsborough Creek HUC 10, traversing approximately 240 linear miles.

The WRIA 14 Lead Entity has prioritized the Oakland Bay area for protection, as it produces 60% of the nation's manila clams. This is an enormous economic driver for shellfish production, in addition to being the nursery for juvenile Chinook production. Wherever possible, projects that provide dual benefit are put forward through the local process for consideration of funding from a variety of sources. In 2005, the Lead Entity prioritized five large acquisitions that protect habitat for fish and shellfish and currently all five have been acquired – totaling over 350 acres of intact nearshore and riparian habitat protection.

The condition of WRIA 14 stocks varies widely and several are unknown. The most notable stocks are the South Sound Tributary Coho stock and the Goldsborough / Shelton Creek fall chum run. The Coho stock is at risk of being listed as depressed if a continuing decline in returns is not reversed in the next several years and the chum run on Goldsborough and Shelton creeks is depressed. The status of steelhead and cutthroat stocks throughout WRIA 14 are unknown, while many of the chum runs are healthy. The strategy focuses its efforts on maintaining the health of the chum runs while returning the faltering Coho runs from the brink of ESA-listing, while prioritizing multiple species and life stages in all projects.

To create a robust list for consideration, the WRIA 14 Salmon Habitat Recovery Group pulled projects directly from the current 3-year-work-program that has been reviewed and adopted locally, in addition to be reviewed by the Puget Sound RITT. This watershed has several invested and involved citizen groups that have advocated to the Congressional level for fish passage barriers. This advocacy and support has led to the implementation of barrier correction on a Navy Railroad on Sherwood Creek that opened 18 miles of spawning and rearing habitat. This project actually required an act of the Federal Congress, a feat not too great for the citizens that inhabit the area. The WRIA 14 group is pleased to be home to an engaged citizenry.

Fish Barrier Removal Board Puget Sound HUC 10 Scoring

CATEGORY: BIOLOGICAL (15 TOTAL POINTS)

Intrinsic Potential (IP) Model for Steelhead and Coho Salmon

Description: Steelhead and coho spawn and rear in small streams and tributaries of larger rivers where most stream crossings are culverts, many of which are barriers to fish migration. Steelhead and coho are identified as rearing-limited species. Intrinsic Potential (IP) is a spatial model that estimates the potential of streams to provide high-quality rearing habitat for coho and steelhead[1]. The model factors multiple stream and landscape attributes that have proven to be positively correlated with juvenile salmonid abundance. Intrinsic Potential is highly recognized and has been utilized for many purposes throughout Washington, Oregon, and other states.

Methods and Scoring: IP values will be evaluated using Burnett's 2007 habitat suitability curves (Figure 1). IP values range from 0-1: an IP value of 0 represents no habitat value and an IP value of 1 represents the highest habitat value. To find watersheds with the highest potential habitat value to coho and steelhead, we use the model to establish an IP Habitat Density Index for each HUC 10.

In order to accurately represent the potential distribution extent of steelhead and coho with the model, we removed stream segments upstream of species-specific gradient barriers and natural waterfall barriers without fishways. The natural barrier data was provided by the WDFW fish passage database (FPDSI)[2]. Additionally, we removed stream segments upstream of major non-fish passable dams. For all IP values within the nominated HUC 10s, we multiplied each stream segment's IP value with its corresponding length. This gives us a self-weighted IP Habitat Unit. After completing this for each modeled stream segment, we summed all of the IP Habitat Units. In order to calculate the density of potential rearing habitat and not bias in favor of larger HUC 10s, we divided by the area of the nominated HUC 10. Similar methods have been used to calculate habitat-based indices of population size[3].

Score Definitions:

IP Index Value - Species-specific IP index value of each stream segment
Stream Segment Length - Length (meters) of each stream segment with a unique IP index value
Area of HUC 10 - Area of HUC 10 (square meters)

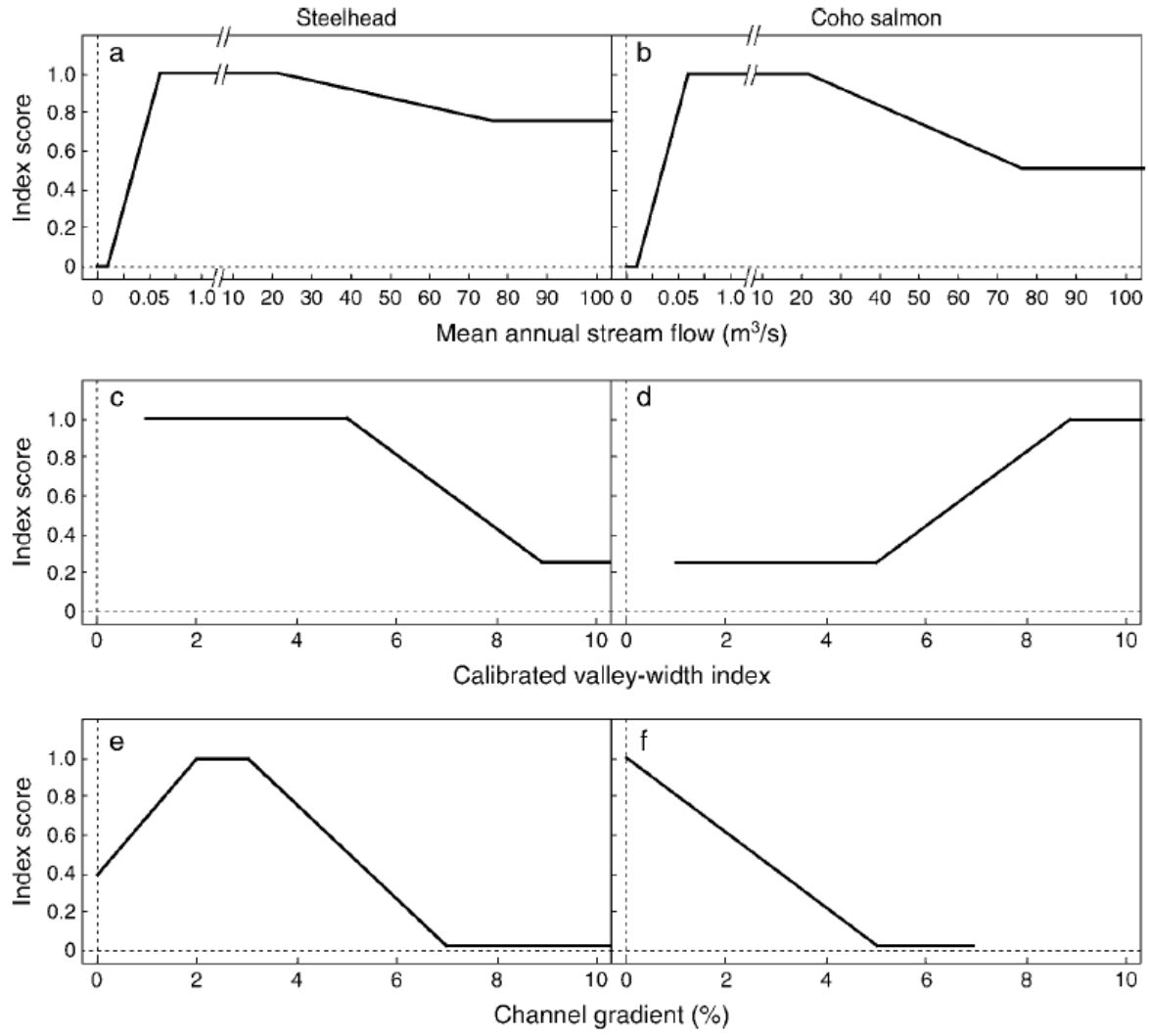
Formula:

IP Index Value * Stream Segment Length = IP Habitat Unit
∑ [IP Habitat Units] / Area of HUC 10 = IP Habitat Density Index

Steelhead and Coho Salmon IP scores are based on IP Habitat Density Index

Steelhead IP Habitat Density Index: 0-10 Points
Coho Salmon IP Habitat Density Index: 0-5 Points

Figure 1: Burnett Steelhead and Coho Habitat Suitability Curves[1]:



The geometric mean of these three stream attributes (mean annual flow, calibrated valley-width index, and channel gradient) is calculated to create a species-specific IP Index Value for each stream segment.

CATEGORY: WATERSHED IMPAIRMENT (10 TOTAL POINTS)

Impervious Surfaces

Description: Urbanization is the most intensive land use that affects watershed processes. The development of new impervious surfaces is a nearly complete, semi-permanent conversion of a watershed's land surface. Using NOAA's 2011 Coastal Change Analysis Program dataset for land cover[4], manmade impervious surface area was analyzed for each HUC 10.

Methods and Scoring: The number of square meters of land cover categorized as manmade impervious surfaces within the nominated HUC 10 is divided by the total area of the HUC 10 to create a percentage.

Score Definitions:

Area of HUC 10 - Area of HUC 10 (square meters)
Area of Impervious Surfaces - Area of manmade impervious surfaces within HUC 10 (square meters)

Formula:

Area of Impervious Surfaces / Area of HUC 10 = Percentage of Impervious Surfaces

Impervious Surfaces score is based on Percentage of Impervious Surfaces

Impervious Surfaces: 0-10 Points

Sources:

[1] Burnett, K.M., et al. 2007. "Distribution of salmon-habitat potential relative to landscape characteristics and implications for conservation". *Ecological Applications* 17.1: 66-80.

[2] Washington Department of Fish and Wildlife. 2015. "Fish Passage Barriers Inventory". Available at: http://wdfw.wa.gov/conservation/habitat/fish_passage/ data_maps.html.

[3] Fullerton, A.H., et al. 2011. "Human Influence on the Spatial Structure of Threatened Pacific Salmon Metapopulations". *Conservation Biology* 25: 932–944.

[4] National Oceanic and Atmospheric Administration. 2011. "Coast Change Analysis Program Regional Land Cover and Change". Available at: http://coast.noaa.gov/dataregistry/search/collection/info/ccapregional.

FBRB Eligibility:

Fish Passage Barrier Owners:

Eligible for FBRB Funding:

- Private landowners
- Counties
- Cities
- Tribes

Not Eligible for FBRB Funding: Although they are not eligible for FBRB funding, coordination with these entities will be essential to achieve fish passage goals.

- State Agencies
- Large forest landowners (Rayonier, Weyco, Green Diamond, etc.)
- Small forest landowners (They are the focus of FFFPP)
- Federal Barriers – including railroad barriers

Fish Passage Project Types:

Eligible: Barrier Corrections involving: (The Problem)

- Road-associated Culverts
- Small dams (NOT FEDERAL)
- Road-associated-Tide Gates

Remedies/Barriers replaced with:

- New Culverts – Stream Simulation
- Abandonment
- Bridges
- Fishways?

Not Eligible:

- Natural Barriers (Beaver Dams, Waterfalls, etc.)
- Large Dams (Bureau of Reclamation)
- Large Bridges
- Levees and Dikes
- Pump Diversions
- Irrigation Channels and irrigation dams (small)??

Fish Passage Barrier Removal Board – Meeting Notes
Date: July 28, 2015
Place: Governor Hotel, Olympia, Washington

Summary: Agenda items with formal action

Item	Formal Action
Meeting Notes - June	Approved
Scope of work for Communication Strategy	Approved
Final Workplan	Approved with several edits

Summary: Follow-up actions

Item	Follow-up
Updated WDFW fiscal note on 5996	Julie will provide when available
Weighting of criteria	Julie will send out to the FBRB

Board Members/Alternates Present:

Julie Henning, Chair, WDFW	*Donelle Mahan, WDNR*
Casey Baldwin, Colville Tribe	*Brian Abbott, GSRO*
Paul Wagner, DOT	*Carl Schroeder, AWC*
Gary Rowe, WSAC	*Jon Brand, Kitsap County/WSAC*

Welcome/Introductions/Agenda Review
The meeting was called to order at 9:30 a.m. by facilitator Neil Aaland. Neil reviewed the agenda for the day. Julie explained some recent workload shifts at WDFW. She is becoming the chair again, Dave Price will be the co-chair. In response to a question, she said the environmental engineers are remaining with Dave and the fish passage section will report to Julie.

A motion was made by Carl Schroeder to approve the June meeting notes; Jon Brand seconded. The motion passed unanimously.

The workplan was briefly reviewed. A change in timing for Goal 4, Action 1 was made from September to October. Neil suggested adding a comment on page 1 that dates could be flexible depending on need; Board members agreed. Carl Schroeder moved to approve, Brian Abbott seconded. The motion passed unanimously.

Public Comments: No member of the public asked to offer comments.

Updates on Legislative Session
The mitigation bill (5996) passed. It's not clear how it affects this Board. Carl gave a brief summary. The bill directs Ecology, WDOT, and WDFW to show a preference for local government barrier removal projects as mitigation. A framework must be developed for deciding at the local level. There will be some work for the FBRB to tee up opportunities for this process. The first phase will be opportunistic. Ecology is in the lead. The difficult part will be how to decide which projects to select. Julie said WDFW has been requested by OFM to provide revised costs for implementation. It will take a couple of years to develop a policy framework. The COE will have to be involved regarding wetlands and the Clean Water Act. Julie said she could share revised fiscal note calculations.

Subcommittee Report on Communications Strategy
Brian Abbott and Carl provided this report. They met on July 20 with Pyramid, along with a member of AWC's communications staff. A list of people to interview is needed for the consultant. Brian reviewed the draft scope and project timelines.

Questions and comments included:

- Gary thinks the goal is strategies for a 2016 budget request
    - Julie clarified that we are looking at 2017-19 for a full grant program budget request
- Carl is not sure if this will result in a capital or operating budget request
- Casey wonders if it is it too soon for messages
    - Need to have some messages/tools in place before any legislative request
- Need messages even if we don't have all the pieces
- Carl thinks we can add messages regarding successful fish barrier removal in the final communication plan on page 2 of the scope
- Casey thinks we need to specify target audiences
- Need to develop messages about what the FBRB is about
- Gary suggested we think about key metrics; Brian said this will be part of messaging
- Carl said new information won't come out of this plan; it will help us respond to our current information
- Suggested parties to interview will include WDFW, WSAC, AWC, WDNR, WDOT, Puget Sound Tribes (need to determine which people from tribes, can start by contacting NWIFC)
    - Paul said we need to consider eastern Washington tribes, not just Puget Sound
    - Brian will reach out to Jonalee Squeochs

Brian moved and Julie seconded to direct the subcommittee to finish negotiation on the scope of work based on this discussion, and begin implementing. Motion passed unanimously.

Jim Wright from NOAA Fisheries, audience member, stated they are interested in barrier removal. Their focus has been larger dams; they don't know about dams on private lands. FBRB members expressed interest in further dialogue with NOAA Fisheries.

Progress on obtaining local input

Julie explained that she sent out, a couple of weeks ago, the request for information from Puget Sound entities. FBRB members were cc'd. She gave them one month to review information and provide feedback. Cade Roler reviewed a PowerPoint presentation on the information request (refer to this for details on his presentation). As an example, he discussed the Snake River region's response.

Julie reviewed the work flow timeline. Casey asked whether they would be able to review criteria; Julie said the FRB previously discussed the criteria but we didn't talk about the weighting. She said Cade could send the weighting out to the Board. Carl said he is also sensitive to that issue; the Board should review the weighting. Julie said the FBRB will see the results of weighting and can revise it at that point. She added that the process will be for WDFW to review the projects, evaluate them, and discuss the results with the FBRB and get feedback. Gary said he thinks about this as an approved project list with different time slots for implementation. It was pointed out that the priorities and project sequencing should be separate.

Brian was asked how the SRFB does project lists. He said the SRFB gives the whole list of projects to the legislature and asks for funding. Neil pointed out the WDFW approach is an iterative process, and there are opportunities for review. He asked about the criteria, how the weighting will be done. The weighting criteria will be placed on the agenda for September.

It was suggested that different lists could be prepared based on different weighting. Julie pointed out the weighting is for Puget Sound; other lists are from the Salmon Recovery Regions and will reflect their choices.

Carl said there are different approaches. One is that the FBRB could fund the top projects in one priority area; or fund the top projects in all regions. Julie thinks it will be a combination. Brian suggested it will not be good to prioritize each Puget Sound area 1-14; instead prioritize the top packages.

Neil summarized what might be put forth at the September meeting:

- Approve lists of watersheds and HUC 10s
- Discuss criteria to be used in weighting

Julie thinks those topics will take all day and suggested the FBR consider a longer meeting. The FBRB decided to meet part day on Monday, September 27 (this day will be to meet with communications consultant), then all day on Tuesday, September 28 to do the remainder of the topics.

Casey expressed some concern about the message being sent to the regions. He mentioned we need to be aware of the difference between treaty and non-treaty tribes when referencing tribal involvement. He also mentioned there is a difference in listing status between Coho and chinook. Julie said if there's steelhead streams then that would cover chinook as well. Casey was okay with that explanation.

A break was taken from 12:00 to 12:15. The meeting then re-convened as a working lunch.

Framework for Implementer's Workshop

This is a topic that has come up several times and is listed in the work plan. Brian thinks it's a way to communicate with those who actually implement projects on the ground. It could serve as a way to get input into our strategy, especially before the bigger budget ask. Potential objectives could include:

- Addressing permit streamlining for implementers
- Encouraging people to apply with their projects

Neil explained his thinking from his work on the work plan. It would be a higher level workshop than what Brian organizes each spring; the focus of this workshop would be on the FBRB and the statewide strategy. Bran thinks it is a way to get people on board with the strategy. Julie thought springtime might be better timing to roll out the strategy to these groups. There are two different outcomes that could occur:

1. Get input from people on the work of the FBRB; and
2. Train them on the results

Julie said WDFW is doing outreach now, but she wonders if some groups are being missed.

Paul asked how we balance between laying groundwork for the larger funding program versus removing fish barriers (how do we promote that?). What can be done in the short term, and on an on-going basis? Carl thinks it is a good idea to put out useful information to help others remove barriers now. Gary suggested we need to do outreach to counties to know what they are doing; there may be information from local planning departments.

Julie summarized this conversation:

- WDFW will continue to work with salmon recovery organizations; they are engaging with local governments
- Communication plan is underway, may be a clearer sense of engaging
- FBRB will re-visit the workshop idea in the spring

FBRB members agreed with her summary.

Brian asked if FBRB is addressing just transportation-related projects or all barriers. The legislative language indicates all barriers for the FBRB work; it separately directs WDFW and WSDOT to work together on transportation-related projects.

Summary/Next Steps

The August meeting will be cancelled. September's meeting will be delayed several weeks to allow WDFW to do its work and prepare for the next meeting.

The meeting adjourned at 2:00 pm.

The next meeting of the Board is scheduled for 1:00 to 5:00 pm Monday September 28; and 9:00 to 5:00 pm Tuesday Sept 29, 2015. The location will be the Association of Washington Cities, 1076 Franklin Street SE, Olympia, WA.

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Others present at meeting:

Neil Aaland, Facilitator	Zack Martin, Mackay Esposito
Cade Roler, WDFW	Samantha Tanner, Mackay Esposito
Jim Wright, NOAA Fisheries	