

## Project Pre-Application

(Please use the Up, Down, Left & Right Arrows to move from Field to Field)

**Project Title:** *Tucannon River LWD Stream Habitat Restoration*

**Submitting Organization:** *Washington Dept. of Fish and Wildlife*

**Project Contact Information**

(Complete for each contact)

For additional Contact Info Sheets go to:

<http://www.snakeriverboard.org/leadentity/applicationdocs.html>

Mrs.  Ms. First Name: David

Last Name: Karl

Address: 1340 N 13<sup>th</sup> Ave

City/Town: Walla Walla State: WA Zip: 99362

Telephone # (509) 527-4138

Cell # (509) 386-1530

E-mail address:

**Project Locations:** Provide a brief description of the project location including watershed, stream reach and position in watershed. The proposed project is located in the Upper Tucannon River Watershed. The Tucannon River is a tributary of the Lower Snake River, it's confluence with the Snake River is located a few miles below Little Goose Dam on the left bank. The stream reach for the project is located in a large MsA within the Tucannon Subbasin between River miles 38-44.

**Maps:** Provide both a map illustrating project vicinity and a site map. Map descriptions can be placed in this section but maps should be attached as a separate page. (Contact SRSRB staff to construct maps and set up project in the HWS prior to pre-application deadline).

### Short Description of Project

Describe project, what will be done, and what the anticipated benefits  
Will be in 1500 characters or less.

**NOTE:** Many audiences, including the SRFB, SRFB's Technical Review Panel, media, legislators, and the public who may inquire about your project use this description. Provide as clear, succinct, and descriptive an overview of your project as possible – many will read these 1-2 paragraphs!

- The description should state what is proposed.
- Identify the specific problems that will be addressed by this project, and why it is important to do at this time.
- Describe how, and to what extent, the project will protect, restore, or address salmon habitat.
- Describe the general location, geographic scope, and targeted species/stock.
- This short description should be the summary of the detailed proposal set out under the Evaluation Proposal, with particular emphasis on questions 1-4.

***The PRISM database limits project descriptions to 1500 characters (including spaces); any excess text will be deleted. Additional detail should be provided in the project proposal!***

The current proposal is a request to expand an existing project/cost increase to SRFB Project #10-1832 Tucannon LWD Stream Habitat Restoration. The project proposed to place/construct a variety of LWD structures to improve habitat complexity, pool frequency, floodplain connection, and increase off channel habitat. Depending on the location and proximity to infrastructure, the LWD structures could range from engineered log jams to randomly placed LWD to simple as-built structures built instream and in the floodplain. There are three reaches identified as assessment reaches, the assessment for those reaches has started. In the course of searching for LWD material for this project, an opportunity to acquire over 200 full tree with root-balls intact (conifers blown down) from USFS Umatilla National Forest became available. The quality and quantity of the tree material is an opportunity to expand on the existing project to treat ½ mile of stream with 1 key LWD piece per stream width to treating 2 miles of stream with 2 key LWD pieces per channel width. The manner in which we can implement the project changes with the material. In order to move the trees and maintain the tree length and mass (root-ball), a large (Chinook) Helicopter will be required to move the trees from ridgetop to river. There are many benefits to using a helicopter; reduced impacts to the landscape and river, the ability to treat large reaches, and the quality of the LWD material. Tree length and mass are key components for stability within the river channel. After the key pieces are placed in-stream additional work will follow to place more course LWD into the stream. This will be done using a chainsaw winch, falling dead (burned) trees, and transporting slash from 2005 salvage logging project. The additional material will be placed by design to enhance and rack up on key LWD elements. The reach proposed for treatment was badly burned during the 2005 School Fire, the riparian was almost completely burned away. LWD recruitment in this reach is a high priority because it will be 30+ years before natural recruitment (Cottonwood/Alder) will be available again..

<p><b>Preliminary Design Description:</b>  <i>Describe the preliminary project design that will be used to address the need described above. This section may be used to provide a more detailed description than provided above. Not required for pre-application (Max one page)</i></p>					
<p><b>Estimated Budget:</b>  <i>List SRFB request match and total project costs</i></p>					
Budget Items	Cost/Unit	Unit	Matching Funds	SRFB Request	Project Cost
<b>Total Matching</b>			<b>\$</b>		
<b>Total SRFB Request</b>				<b>\$</b>	
<b>Total Project Cost</b>					<b>\$</b>
<p><b>Evidence that this project is part of the Snake River Salmon Recovery Plan:</b>  <i>List the HWS project number and title of project as stated in the 3 Year Plan. If project is not directly stated in the 3 Year Plan list the general project category your project pertains to and describe the correlation.</i></p>					
<p>Project is identified in Salmon Recovery Plan as a high priority to address limiting factors. Project is listed in the 3 year work plan # 32-00300</p>					

**This is the end of the PRE-APPLICATION**

**When submitting your draft application, make sure to make updates to the pre-application information where pertinent as well as completing the following draft application. The pre-application will become part of the draft application to reduce redundant forms.**

<b>SRFB Draft Application Information</b>	
<input checked="" type="checkbox"/> <b>Draft</b>	Date Submitted to SRSRB 5-16-2011
<b>Project Type:</b> (check one)	
<input type="checkbox"/> Acquisition	<input type="checkbox"/> Acquisition/Restoration
<input type="checkbox"/> Passage, Diversion, Barrier Inventory/Design	<input type="checkbox"/> Upland
<input type="checkbox"/> Non-Capital	<input checked="" type="checkbox"/> In-Stream
<input type="checkbox"/> Riparian	
<b>Applicant / Organization Information</b>	
<b>Organization Name:</b> Washington State Dept. of Fish and Wildlife	
<b>Organization Type</b> (check one)	
<input type="checkbox"/> City/Town	<input type="checkbox"/> County
<input type="checkbox"/> Native American Tribe	<input type="checkbox"/> Non-profit Organization
<input type="checkbox"/> Special Purpose District	<input checked="" type="checkbox"/> State Agency
<input type="checkbox"/> Conservation District	
<input type="checkbox"/> RFEG	
<b>Updated Vicinity / Site Maps &amp; Photos</b>	
Please submit photos as JPEG or other non PDF picture format. Maps and designs maybe submitted in photo or PDF format.	
Vicinity Map Attached:	<input checked="" type="checkbox"/>
Site Map Attached:	<input checked="" type="checkbox"/>
Aerial or Site Specific Photos Attached:	<input type="checkbox"/>
Preliminary Designs or Field Sketches:	<input type="checkbox"/>
<b>Update Short Description in Pre-Application Above</b>	
Describe project, what will be done, and what the anticipated benefits Will be in 1500 characters or less.	

<b>Summary of Funding Request and Match Contribution</b>	
Remember to update this section whenever changes are made to your cost estimates.	
<b>TOTAL PROJECT COST (A + B) (Sponsor Match &amp; SRFB Contribution)</b>	
<b>A. Sponsor Match Contribution (15% minimum is required for match)</b>	
Appropriation/Cash	
Bonds – Council	
Bonds – Voter	
Cash Donations	
Conservation Futures	
<b>Donations</b>	
Donated Equipment	
Donated Labor	\$8,000.00
Donated Land	
Donated Materials	\$50,000.00
Donated Property Interest	
Force Account	
Force Acct – Equipment	
Force Acct – Labor	
Force Acct – Material	
<b>Grants</b>	
Grant – Federal	\$0.00
Grant – Local	
Grant – Private	
Grant – State	
Grant – IAC	
Grant – Other	
<b>Total Sponsor Match Contribution</b> (15% Minimum Match Required of a total Project Cost)	<b>\$58,000</b>
<b>B. SRFB Contribution (grant request)</b> \$5,000 Minimum Request	<b>\$374,000.00</b>
Note: *Be sure to identify the name and type of any matching grant in the Application Questionnaire Section. *The Total Project Cost must equal the totals from the following Cost Estimate Sections.	

<b>Project Proposal Guides</b>	
To complete this section download the Project Proposal template that fits your proposed project and attach as a separate document. Check appropriate box below. NOTE: This project proposal will be used primarily to evaluate your project. Please include appropriate metrics within the body of the text. The below documents can be found at <a href="http://www.snakeriverboard.org/leadentity/applicationdocs.html">http://www.snakeriverboard.org/leadentity/applicationdocs.html</a>	
	<b>Attached</b>
1) Restoration, Acquisition and Combination (Restoration & Acquisition) Project	<input checked="" type="checkbox"/>
2) Planning Projects (Assessment, design, and Study) and Combination (Planning & acquisition) Projects	<input type="checkbox"/>
3) Barrier Inventory Projects	<input type="checkbox"/>

<b>Landowner Information</b>	
<b>Landowner Acknowledgment Forms</b> (Remember to complete the Landowner Acknowledgement form for each Landowner.)	
To complete this section download the landowner acknowledgment form and have the landowner complete the form and submit a copy with the final application. Final applications without signed agreement forms may not be considered by the SRSRB for final scoring and ranking. These forms can be found on the SRSRB web site at: <a href="http://www.snakeriverboard.org/leadentity/applicationdocs.html">http://www.snakeriverboard.org/leadentity/applicationdocs.html</a>	
Current Landowner(s) of the site (name and address). Remember to complete the Landowner Acknowledgement Form. Name: Washington State Dept. of Fish and Wildlife Address: 600 Capitol Way N. City/Town: Olympia State: WA <div style="text-align: right;">Zip: 98501</div>	
Driving Directions (provide directions that will enable staff to locate the project): The Wooten Wildlife Area is located along the Tucannon River in Columbia County. From the city of Dayton take Highway 12 east, turn right on Patit Creek Rd. Turn left onto Hartsock Road which turns into Hartsock Grade Rd, follow grade down into Tucannon Valley. Turn right onto Tucannon Rd, drive approximately 3 miles to Wooten WA.	

**This is the END of the DRAFT APPLICATION.**  
**&**  
**The START of the FINAL APPLICATION**

<b>SRFB Final Application Information</b>	
<input checked="" type="checkbox"/> <b>Final</b>	Date Submitted to SRSRB
<b>Barrier Removal and Barrier Assessment / Design Projects</b>	
Barrier Information Form: <a href="http://www.snakeriverboard.org/leadentity/applicationdocs.html">http://www.snakeriverboard.org/leadentity/applicationdocs.html</a>	
<b>Project Proposal Cost Estimate Template</b>	
To complete this section complete the budget template that pertains to your project type Found on the SRSRB website at: <a href="http://www.snakeriverboard.org/leadentity/applicationdocs.html">http://www.snakeriverboard.org/leadentity/applicationdocs.html</a> and <i>check the appropriate attachments box below.</i> OR you may submit a detailed budget in your own format.	
	<b>Attached</b>
1) Personal Format Budget	<input type="checkbox"/>
2) Assessments	<input type="checkbox"/>
3) Property Acquisition	<input type="checkbox"/>
4) In-stream Restoration	<input checked="" type="checkbox"/>
5) Diversion and Screen	<input type="checkbox"/>
6) Barrier Inventory or Fish Passage Design	<input type="checkbox"/>
7) Riparian	<input type="checkbox"/>

**Supporting Technical Documentation**

List studies, reports, or other technical documentation that details current biological and habitat conditions and supports your biological and/or habitat objectives and the approach or methods to be applied.

<b>Document Title</b>	<b>Author(s)</b>	<b>Date</b>
<b>Snake Region Salmon Recovery Plan</b>	<b>SRSRB</b>	<b>2005</b>
<b>WRIA 35 Limiting Factors Report</b>	<b>Mike Kuttle Jr.</b>	<b>2001</b>

**For Barrier Projects Only:**

Has a Priority Index (PI) evaluation been completed?

No  Yes (If so, please attach documentation)

**Application Questionnaire**

All applicants must answer the following questions

**Cost Efficiencies**

For any grants listed in the Summary of Funding Request and Match Contribution Section, are there any restrictions on the use of these grant funds?  No  Yes

When and how long will the grant funds be available to this project?

Describe the type of donated labor (skilled and unskilled), donated equipment, and donated materials that will be used for this project, identified in the Summary of Funding Request and Match Contribution Section. Donated labor will include both skilled and unskilled labor to chainsaw winch LWD into the project area, drop dead trees when possible, and provide technical assistance to complete the project design. Donated materials, trees for LWD, tree material for planting, grass seed to re-establish grasses in disturbed areas.

### Land Ownership

What type of landowner currently owns the property?

 Federal    Local    Private    State    Tribal

What is the current land use of the site, and its history? Describe past human uses and salmon habitat functions. Are there any structures on site? The site is located on the Wooten Wildlife Area in the Tucannon River Watershed. The current land use is recreation and wildlife and fish protection. Historically, the area was home to the Nez Perce and Umatilla Indian tribes. United States settlers moved into this area in the 1860-70's. The watershed has been adversely impacted from land use practices ranging from logging to road development.

### Non-profit organizations must answer the following questions

Is your organization registered as a non-profit with the Washington Secretary of State?

If so, what is your Unified Business Identifier (UBI) number?

 No    Yes, UBI #:

What date was your organization created? 1/1/01

How long has your organization been involved in salmon and habitat conservation? 100 years

### Species/Habitat Factors Information Sources

For Species Information provide the source and indicate if the species listed are directly on-site at some point in their life stage (i.e. SaSI, WDFW Stream Catalog, Stream Survey/Field Observation, Limiting Factors Distribution Maps).

For Habitat Factors Information list the study/report and date identifying the habitat factors for your project (i.e. SaSI, limiting factors analysis, watershed analysis, other assessments, or studies).

Study Name	Author	Date
Snake Region Salmon Recovery Plan	SRSRB	2005
WRIA 35 Limiting Factors Report	Mike Kuttle Jr.	2001

### Permits

Check the appropriate boxes to indicate required and/or anticipated permits.  
 General permit information can be obtained at the Dept. of Ecology Permit Assistance Center 1-800-917-0043 or on their Internet site <http://www.ecy.wa.gov/programs/sea/pac/index.html>.

Permits	Comments Regarding Permit Status
<input type="checkbox"/> Aquatic Lands Use Authorization <i>(Dept of Natural Resources)</i>	
<input type="checkbox"/> Building Permit <i>(City/County)</i>	
<input type="checkbox"/> Clear & Grade Permit <i>(City/County)</i>	
<input type="checkbox"/> Cultural Assessment [Section 106] <i>(CTED-OAHP)</i>	x
<input type="checkbox"/> Dredge/Fill Permit [Section 10/404 or 404] <i>(US Army Corps of Engineers)</i>	x
<input type="checkbox"/> Endangered Species Act Compliance [ESA] <i>(US Fish &amp; Wildlife/NMFS)</i>	x
<input type="checkbox"/> Forest Practices Application [Forest & Fish] <i>(Dept of Natural Resources)</i>	
<input type="checkbox"/> Health Permit <i>(Dept of Health/County)</i>	
<input type="checkbox"/> Hydraulics Project Approval [HPA] <i>(Dept of Fish &amp; Wildlife)</i>	x
<input type="checkbox"/> NEPA <i>(Federal Agencies)</i>	
<input type="checkbox"/> SEPA <i>(Local or State Agencies)</i>	x
<input type="checkbox"/> Shoreline Permit <i>(City/County)</i>	x
<input type="checkbox"/> Water Quality Certification [Section 401] <i>(County/Dept of Ecology)</i>	x
<input type="checkbox"/> Water Rights/Well Drilling Permit <i>(Dept of Ecology)</i>	
<input type="checkbox"/> Other Required Permits (identify)	
<input type="checkbox"/> None – No permits Required	

**SRFB Project History Information**

Has any part of this project been previously reviewed or funded by the SRFB?

YES x NO

If yes, please provide the project name and number (or year of application if a project number is not available). If the project was withdrawn or not awarded SRFB funding, please describe how the current proposal differs from the original.

# Project Proposals

## Restoration, Acquisition, and Combination (Restoration and Acquisition) Projects

SRFB applicants must respond to the following items. Please respond to each question individually – do not summarize your answers collectively in essay format. Local citizen and technical advisory groups will use this information to evaluate your project. Contact your lead entity for additional information that may be required. Limit your response to eight pages.

Submit information via a PRISM attachment, which is available on the RCO Web site at [www.rco.wa.gov/doc\\_pages/app\\_materials.shtml#salmon](http://www.rco.wa.gov/doc_pages/app_materials.shtml#salmon).

NOTE: Acquisition, combination, fish passage, diversions, and screening projects have supplemental questions embedded within this worksheet. Please answer the questions below and all pertinent supplemental questions.

1. Project Overview

- A. Provide a brief summary of the project (note that further elaboration of this summary information is requested in Questions 2 and 3). Be sure to include:

**The current proposal is a request to expand an existing project/cost increase to SRFB Project #10-1832 Tucannon LWD Stream Habitat Restoration. The project proposed to place/construct a variety of LWD structures to improve habitat complexity, pool frequency, floodplain connection, and increase off channel habitat. Depending on the location and proximity to infrastructure, the LWD structures could range from engineered log jams to randomly placed LWD to simple as-built structures built instream and in the floodplain. There are three reaches identified as assessment reaches, the assessment for those reaches has started. In the course of searching for LWD material for this project, an opportunity to acquire over 200 full tree with root-balls intact (conifers blown down) from USFS Umatilla National Forest became available. The quality and quantity of the tree material is an opportunity to expand on the existing project to treat ½ mile of stream with 1 key LWD piece per stream width to treating 2 miles of stream with 2 key LWD pieces per channel width. The manner in which we can implement the project changes with the material. In order to move the**

**trees and maintain the tree length and mass (root-ball), a large (Chinook) Helicopter will be required to move the trees from ridgetop to river. There are many benefits to using a helicopter; reduced impacts to the landscape and river, the ability to treat large reaches, and the quality of the LWD material. Tree length and mass are key components for stability within the river channel. After the key pieces are placed in-stream additional work will follow to place more course LWD into the stream. This will be done using a chainsaw winch, falling dead (burned) trees, and transporting slash from 2005 salvage logging project. The additional material will be placed by design to enhance and rack up on key LWD elements. The reach proposed for treatment was badly burned during the 2005 School Fire, the riparian was almost completely burned away. LWD recruitment in this reach is a high priority because it will be 30+ years before natural recruitment (Cottonwood/Alder) will be available again.**

- i. Location of the project in the watershed, including the name of the water bodies, upper and lower extent of the project (if only a portion of the watershed is targeted), and whether the project occurs in the near-shore, estuary, main stem, tributary, off channel, or other location.

**The project is located on the Tucannon River, a major tributary of the Lower Snake River. The project is an instream project and will occur in one of three targeted locations. The reaches are listed from upstream to downstream: Panjab Bridge to Cow Camp Bridge, North South Campground to Beaver Watson Lake, and Spring Lake to the Wooten Wildlife Area Boundary.**

Overview of current project site conditions.

**The role of Large Woody Debris as a principle structural component of the Tucannon River has been negatively altered over the past 100 years. Physical boundaries (roads, levees, diversion intakes) have been placed on the river, including large reaches of "bermed" river banks in response to large flood events that have reduced the physical and ecological complexity of the river. The School Fire (2005) caused a large wood recruitment to the river, especially in the heavily burned areas. Minor projects to add key LWD elements have been implemented since 2005. The river has responded to the increase in LWD, with increased habitat complexity and floodplain connectivity.**

- ii. Description of the proposed project and primary project objectives, such as how this project will contribute to restoring salmonids within the ecosystem.

**The Tucannon River channel has been adversely impacted by instream activities following floods. After the 1964 flood, there were DC 10 Catepillars in the stream to**

**rechannelize the system (Del Groat, USFS pers. Communication). The river channel was simplified and straightened and conveniently placed to minimize flooding. The river was effectively confined by creating “bermed” banks, and removal of LWD eliminated geomorphic complexity and decreased the quality and quantity of in-stream habit. The long-term problem was that the channel now functioned to move substrate and water, but without new wood recruitment to establish structure and roughness, the channel remained simplified with limited habitat complexity. The loss of habitat is mostly focused on complex off channel and edge water habitat required by juvenile sal monids.**

**The headwaters of the Tucannon River are almost entirely publicly owned, and therefore an excellent area to restore natural stream functions that will benefit habitat complexity and improve natural stream energetics. Although the loss of habitat complexity on the Tucannon River was recognized in the past, observation of the channel changes following the School Fire in 2005, a major LWD recruitment event, has provided strong evidence that the river is lacking LWD structure. Increases in LWD in the Tucannon have increased habitat diversity and complexity for salmonids to a magnitude that is hard to measure. The number and quality of side channel and off-channel rearing, the frequency and quality of pools, the ratio of edge habitat/stream length, and the surface area of complex cover have all increased. The objective of this project is to restore LWD into reaches that remain well below the SRSRB criteria for the amount of LWD key pieces, one key piece per stream width. The project will increase pool frequency, floodplain connectivity, and off-channel rearing opportunities, all limiting factors identified in the Snake Region Salmon Recovery Plan.**

When possible, list your sources of information by citing specific studies, reports, and other documents.

- B. Has any part of this project been previously reviewed or funded by the SRFB? If yes, please provide the project name and SRFB project number (or year of application if a project number is not available). If the project was withdrawn or not awarded SRFB funding, please describe how the current proposal differs from the original.

**This proposal is to expand (cost increase) project # 10-1832R. The project was funded in 2010, during scoping an opportunity for a large quantity 200+ whole trees with root-balls became available. It is our desire to expand the project and use a large Helicopter to transport whole trees and place them in the river by design with random elements.**

## 2. Salmon Recovery Context

- A. Describe the fish resources present at the site and targeted by this project.

Species	Life History Present (egg, juvenile, adult)	Current Population Trend (decline, stable, rising)	ESA Coverage (Y/N)	Life History Target (egg, juvenile, adult)
Snake River Steelhead	Egg to adult	decline	Y	Egg to adult
Snake River Spring Chinook	Egg to adult	decline	Y	Egg to adult
Bull Trout	Egg to adult	decline	Y	Egg to adult

- B. Describe the nature, source, and extent of the problem that the project will address. Include a detailed description of site conditions and other current and historic factors important to understanding the need for this project. Be specific – avoid general statements. (acquisition, fish passage, diversions, and screening projects should refer to the supplemental questions later in this worksheet for information to include in their problem statement.)

**As stated above, the project target reaches are confined, lacking pools and complex habitat that will promote healthy populations of native fish in the Tucannon River. The current conditions in the target reaches could be characterized as featureless, with very few pools, major stretches are simplified deep riffles. The project is intended to increase pool frequency, side channels, floodplain connection, and promote riparian habitat. The resulting complex and diverse habitat benefits range from improved spawning opportunities and required habitat for multiple species and life stages to improvements in primary production based on increased surface area, large and course woody debris, and shoreline.**

- C. Discuss how this project fits within your regional recovery plan or local lead entity strategy to restore or protect salmonid habitat in the watershed (i.e., does the project address a priority action, occur in a priority area, or target priority fish species?).

**The project is located in a High Priority Area, Large MSA, and has multiple ESA listed Species present. The Snake River Salmon Recovery Plan identifies channel complexity and floodplain connectivity as primary limiting factors in the Tucannon R. These**

**limiting factors are also listed in the Columbia and Snake R. Biop as primary limiting factors. The project is listed in the 3-year work plan #32-00300.**

- D. Describe the consequences of not conducting this project at this time. Consider the current level and imminence of risk to habitat in your discussion.

**There is nothing very imminent about the project, one consequence of not conducting this project at this time is there is lost opportunity for wood recruitment and maybe the lost opportunity on the LWD material currently available to the project.**

3. When possible, list your sources of information by citing specific studies, reports, and other documents.
4. Project Design
- A. Provide a detailed description of the project size, scope, design, and how it will address the problem described in Section 2B. Describe specific restoration methods and design elements you plan to employ. (Acquisition-only projects need not respond to this question.)

**The proposed project is intended to treat 2 miles of Tucannon River with 200+ whole trees between 18-36 inch DBH and 80-110 feet long. The tree will be transported from ridgetop to river using a large helicopter (Chinook) capable of moving 27,000 lbs. Large log structures will be designed to perform key functions of the design (i.e. aggrade the channel and capture old channels on the landscape). Random structure will be placed to maximize the channel roughness and provide increased complexity, pools, and floodplain connection. The objective for the number of key LWD per stream width, is approximately 2 pieces/stream width. The focal reach assessments will be completed before final applications are due to RCO in August. Therefore, a target reach and preliminary design will be completed. The project objectives are to maintain and enhance an active channel migration zone, increase the quantity and quality of aquatic and riparian habitats, increase linkages between the channel system and riparian floodplain/wetlands, and maximize number and length of perennial and ephemeral channels.**

- B. If restoration will occur in phases, explain individual sequencing steps, and which of these steps is included in this application. (Acquisition-only projects need not respond to this question.)

**The project will include a phased approach to riparian planting. The project will be assessed annually to determine suitable areas for riparian enhancement. Willow whips and to a lesser degree rooted stock deciduous trees will be planted in the focal areas in the Fall and again in the Spring for at least two seasons after the LWD structures are constructed.**

- C. Describe the long-term stewardship and maintenance obligations for the project or acquired land. For acquisition and combination projects, identify any planned use of the property, including upland areas.

**The project is located on Washington State Wooten Wildlife Area and will be managed and maintained as outlined in the Blue Mountain Wildlife Area Management Plan. The project is designed to create stream and floodplain connectivity and an opportunity for the channel to reach a natural level of complexity and stability. Because the project is on public land, future stewardship will be available if and when it is needed. However, the hope is to restore function to the channel and allow natural restoration to continue to occur over time.**

5. Project Development

- A. Explain how the project's cost estimates were determined.

**The cost estimates are based on cost of key large wood elements, equipment, and construction staff time. The major cost of the project are helicopter costs, however we believe the benefits of using large (whole) trees justifies additional costs. The area that will be treated has almost no large trees available for recruitment. Large areas of the riparian have 5 year old deciduous trees without any potential future (within 30 years) LWD recruitment.**

- B. Describe other approaches, opportunities, and design alternatives that were considered to achieve the project's objectives.

**There are alternatives to constructing LWD structures other than using a helicopter, but they require more engineering and design because the tree material is shorter in length (40feet) and more likely to move during large flow events. Tree length and mass are important factors related to how far a LWD tree will move in a system. The equation is simply the longer and mor e mass, the less likely the tree will move significant distances for a given channel width. Using a helicopter allows us to transport large trees that are less likely to move, they don't require anchoring, and therefore simulate natural conditions and processes.**

- C. Have members of the community, recreational user groups, adjacent landowners, or others been contacted about this project? Describe any concerns about the project raised from these contacts and how those concerns were or will be addressed.

**This project concept has been discussed and advertised quite frequently, we generally receive positive responses from all user groups. The Tucannon River is not utilized for rafting or floating recreation, perhaps infrequently used to inner tube.**

- D. Include a Partner Contribution Form (Appendix J), when required, from each partner outlining the partner's role and contribution to the project. State agencies are required to have a local partner that is independently eligible to be a project sponsor. A Partner Contribution Form is recommended, but not required, from partners providing third-party match.

**Eric Hoverson, CTUIR tribe, is donated \$5,000 cash match for this project. Eric and WDFW have already partnered on several habitat restoration projects in the Tucannon River Basin. The match is CTUIR funding through BPA accord funds dedicated to restoration in the Tucannon River. USFS is providing a large match donation for the value of the large wood, they are also providing skilled labor as part of the project.**

- E. List all landowner name. Include a signed Landowner Acknowledgement Form (Appendix K) from each landowner acknowledging that his or her property is proposed for SRFB funding consideration. If a restoration project covers a large area and encompasses numerous properties, Landowner Acknowledgement Forms are not required. For sponsors proposing work on their own property, this form is not required. For multi-site acquisition projects involving a relatively large group of landowners, include, at a minimum, signed Landowner Acknowledgement Forms for all known priority parcels.

**WDFW is the main landowner, as previously mentioned WDFW is currently working with a private landowner to determine if he is interested in participating with this project. If not, WDFW will proceed with one of the other alternative reaches.**

- F. Describe your experience managing this type of project.

**I've managed a number of projects of this type, the Curl Lake Fish Passage project had both fish passage and stream enhancement using LWD. The Tucannon School Fire Restoration included dropping Large trees into the Tucannon River, and the project had very positive results for habitat. In fact, the School Fire Restoration LWD project inspired this proposal. Also, managed a LWD structure built as part of a spring creek restoration that WDFW and CTUIR partnered for in 2009. I have collaborated with WDFW Environmental Engineer, Bruce Heiner, on all of the projects and he is a partner on the proposed project. Bruce has been the engineer and designer of the LWD structures for the projects. Bruce has extensive experience with environmental design associated with LWD structures, fish passage, and stream habitat restoration. Additionally, Bruce will be on-site directing implementation of the LWD structures during the construction of the project.**

## 6. Tasks and Schedule

List and describe the major tasks and time schedule you will use to complete the project.

**Spring 2011 – Identify target reach, assess, and develop conceptual design**

**Summer/Fall 2011 – develop design, acquire permitting, secure LWD and contracts, collect monitoring data.**

**Winter 2011 – Contract helicopter/ crew, set construction dates.**

**Summer 2012 – Collect project monitoring data, Construction of LWD structures**

**Fall 2012 – Initial riparian enhancement treatment**

**Spring/ Fall 2013 - Continue riparian enhancement, Assess monitoring data, provide final report. ( Riparian enhancement may continue to occur if needed)**

7. Constraints and Uncertainties

Each project should include an adaptive management approach that provides for contingency planning. State any constraints, uncertainties, possible problems, delays, or unanticipated expenses that may hinder completion of the project. Explain how you will address these issues as they arise and their likely impact on the project.

**The project is designed to have flexibility because there are three alternative reaches. All of the reaches would benefit from the proposed project, but the actual site will be determined based on assessment of the reaches closer to implementation time. A lot of changes can occur within the channel that may sway the project towards one reach or another. Project engineer and manager will be on-site during construction to handle issues that come up.**

8. Detailed project cost estimate. Please include a detailed project cost estimate and attach in PRISM. Clearly label the attachment in PRISM "Cost Estimate." This will help the local review process and the SRFB Review Panel better understand the project cost details.

**Attached**

**Supplemental Questions**

1. Projects involving acquisitions (applies to both acquisition-only and combination projects) answer the following questions

- A. Information to include in item 2B: Describe the habitat types on site (forested riparian/floodplain, wetlands, tributary, main stem, off-channel, bluff-backed beach, barrier beach, open coastal inlet, estuarine delta, pocket estuary, uplands, etc.), their size in acres, quality, and existing land use. Describe any features that make the site unique.
- B. Describe the type of acquisition proposed (e.g., fee title, conservation easement).
- C. State the size of the property to be acquired. Attach a site map in PRISM showing the property boundary, habitat features, easements, roads, and buildings, as appropriate.
- D. Describe the property's proximity to publically owned or protected properties in the vicinity. Attach a map in PRISM that illustrates this relationship.
- E. If uplands are included on the property to be acquired, state their size and explain why they are essential for protecting salmonid habitat.
- F. State the percentage of the total project area that is intact and fully functioning habitat.
- G. Explain the degree to which habitat on site is impaired and the nature and extent of required restoration. If the property is in the channel migration zone, is that function intact (i.e., do existing levees, riprap, infrastructure, or other features on this or nearby properties inhibit channel migration)? Describe the likely prioritization, timeframe, and funding sources for proposed restoration activities.
- H. List existing structures (home, barn, outbuildings, fence) on the property and any proposed modifications. Note: In general, buildings on SRFB-assisted acquisitions must be removed. Refer to Section 2 of this manual for information about ineligible project elements.
- I. Describe adjacent land uses (upstream, downstream, across stream, upland).
- J. Describe why the acquisition is needed. Explain why federal, state, and local regulations do not provide enough protection. State the zoning and Shoreline Master Plan designation.
- K. If buying the land, explain why the acquisition of conservation easements to extinguish certain development, timber, agricultural, mineral, or water rights will not achieve the goals and objectives of the project.

- L. For multi-site acquisition projects, identify all the possible parcels that will provide similar benefits and certainty of success and provide a clear description of how parcels will be prioritized and how priority parcels will be pursued for acquisition.

2. Fish Passage Projects – Answer the following questions:

NOTE: For fish passage design and evaluation guidance, applicants should refer to the Washington Department of Fish and Wildlife's *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual* at <http://wdfw.wa.gov/hab/engineer/fishbarr.htm>, and the *Design of Road Culverts for Fish Passage* manual at <http://wdfw.wa.gov/hab/engineer/cm/>. For prioritization questions or technical assistance, contact Dave Collins at Department of Fish and Wildlife at (360) 902-2556 or [david.collins@dfw.wa.gov](mailto:david.collins@dfw.wa.gov). For engineering design questions or technical assistance, contact Michelle Cramer at (360) 902-2610 or [cramemlc@dfw.wa.gov](mailto:cramemlc@dfw.wa.gov).

- A. Information to include in item 2B: Concisely describe the passage problem (outfall, velocity, slope, etc). Describe the current barrier (age, material, shape, and condition). Is the structure a complete or partial barrier? Describe the amount and quality of habitat to open if the barrier is corrected.
- B. Project Design
  - i. If a culvert is proposed, does it employ a stream simulation, no slope, hydraulic, or other design?
  - ii. Has the project received a Priority Index (PI) Number? If so, provide the PI number and indicate the method used: Physical survey, reduced sample full survey, expanded threshold determination, or Washington Department of Fish and Wildlife generated PI (list source, such as a study or inventory).
  - iii. Identify if there are additional fish passage barriers downstream or upstream of this project.
  - iv. Complete and attach the Barrier Evaluation Form and Correction Analysis Form. These forms are available in Appendix R of this manual and on the RCO Web site at [http://www.rco.wa.gov/doc\\_pages/app\\_materials.shtml#salmon](http://www.rco.wa.gov/doc_pages/app_materials.shtml#salmon).

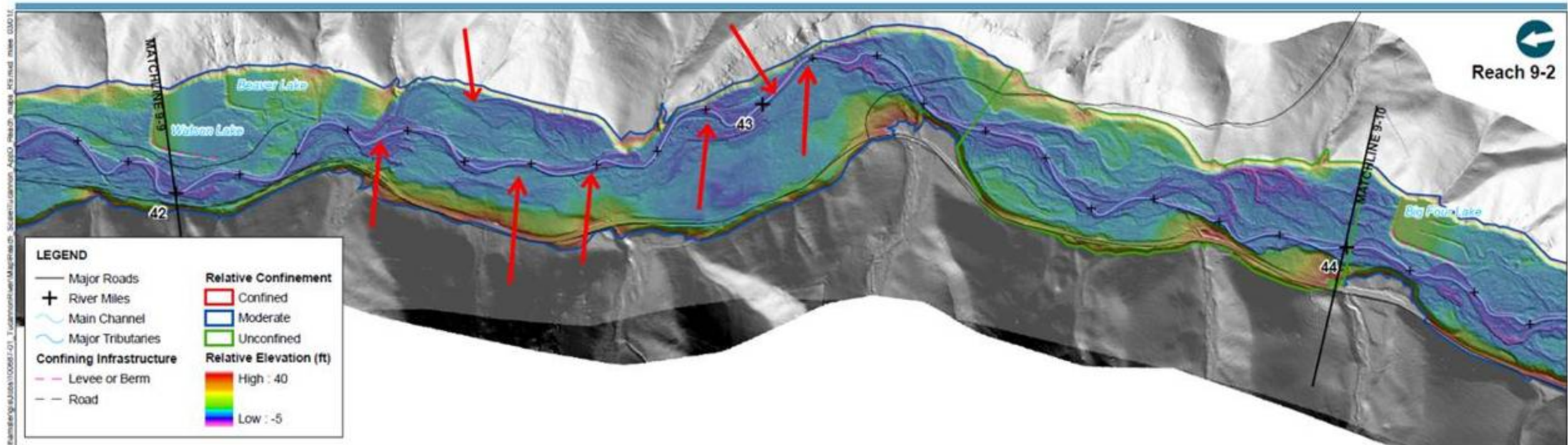
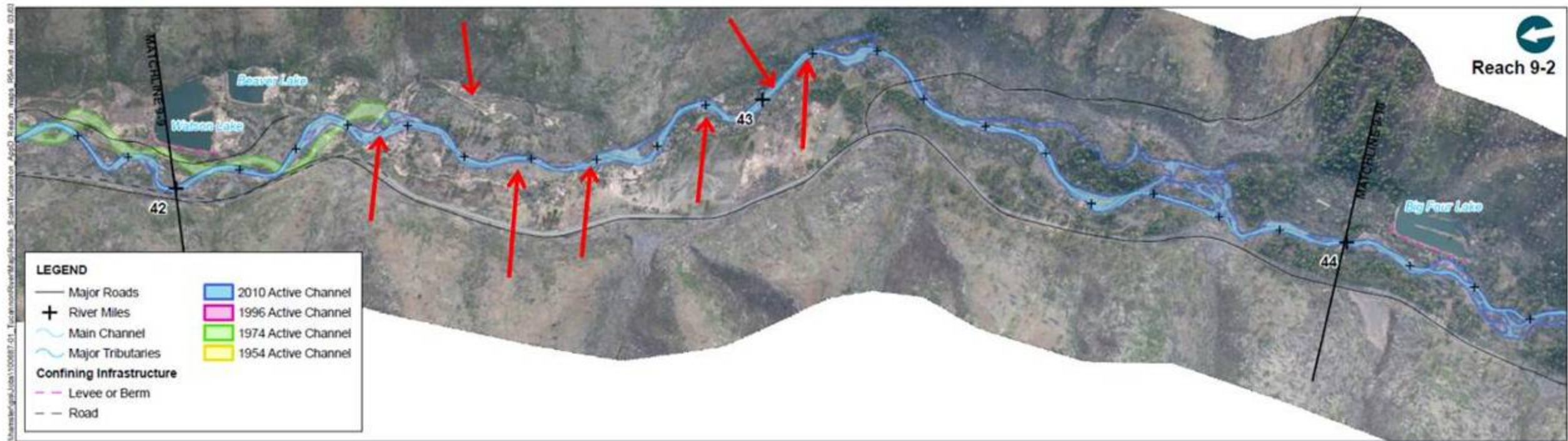
3. Diversions and Screening Projects – Answer the following questions:

NOTE: For questions or technical assistance, contact Pat Schille, Department of Fish and Wildlife at (509) 575-2735 or [schilpcs@dfw.wa.gov](mailto:schilpcs@dfw.wa.gov). Refer to the Washington

Department of Fish and Wildlife's *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual* (August 2000) at <http://wdfw.wa.gov/hab/engineer/fishbarr.htm> for further guidance.

- A. Information to include in item 2B: If the diversion is equipped with a fish screen, provide details of why it is not functioning properly from a fish protection perspective (entrainment or impingement).
  
- B. Project design
  - i. Has the project received a Screening Priority Index (SPI) number? If yes, provide the SPI and indicate if the Washington Department of Fish and Wildlife developed the SPI.
  
  - ii. Is this a pump or gravity diversion?
  
  - iii. What is the flow of the diversion in gallons per minute (gpm)? How was the flow determined (water right; meter – system meter; calculated from irrigation system components, or direct measurement during peak spring/summer diversion using a flow meter)?
  
  - iv. If it is not possible to determine the flow, then provide the bank-full, cross-sectional area of the ditch, measured 100-300 feet downstream of the point of diversion. Refer to page 25 of the Washington Department of Fish and Wildlife's *Fish Passage Barrier and Screening Assessment and Prioritization Manual* for instructions on how to collect this information.
  
  - v. How much water, if any, will be saved as a result of this project? Will water be put into trust, or are there plans to transfer water rights?

# Large Reach Scale Stream Channel and Floodplain Restoration



**NOTES:**  
 Relative elevation map created from 2010 LIDAR. Roads from WA DNR. Tributary alignments from DOE. Locations of features are approximate. This figure is to be used for conceptual purposes only.



**Figure D-9b**  
 Reach 9 Relative Elevation and Topographic Features  
 Tucannon River Geomorphic Assessment and Habitat Restoration Study  
 Columbia Conservation District

# Tucannon River Vicinity Map

