

## Project #20-1093, Touchet River Smolt Trap Monitoring

Current Status: Preapplication

### Project Details

**Primary Sponsor:** Department of Fish and Wildlife  
**Secondary Sponsor:** Confederated Tribes of the Umatilla  
**Sponsor:** Indian Reservation

**Primary Contact:** Joseph Bumgarner  
 (509) 382-1004  
 joseph.bumgarner@dfw.wa.gov

**Funding Program:** Salmon Federal Activities

**Lead Entity:** Snake River Salmon Recovery Board  
 Lead Entity

**Project Type:** Monitoring

### Project Description

The Washington Department of Fish and Wildlife is proposing a monitoring project on the Touchet River, Wa. WDFW has been monitoring Touchet River summer steelhead (Mid-Columbia River DPS) smolt production as one of the Fish In/Fish Out smolt trapping projects across the State. The smolt trap is located immediately below where the Harvey-Shaw road crosses the Touchet River. Monitoring objectives have been to estimate smolt yield and life history diversity, in addition to PIT tagging all juvenile migrants to monitor their outmigration, estimate smolt-to-adult survival (SAR) and adult abundance, many of which are critical Viable Salmonid Population (VSP) parameters. The smolt trap is operated continuously from October thru June each year. Delisting of Mid-C summer steelhead has been discussed for years, but the lack high quality VSP information has limited the ability of the Federal Agencies to change the current status of the Umatilla/Walla Walla MPG. Population monitoring (juvenile and adult) is a foundational component of science-based recovery actions and tracking progress towards recovery. Therefore, operation of the Touchet River smolt trap and the resulting estimates (juvenile and adult abundance, productivity) play a critical role in this evaluation. This proposed monitoring project addresses a funding gap to normal trap operations due to cuts from other funding sources which had supported the project but are no longer able to.

### Project Overall Metrics (Outcomes, Benefits)

Category / Work Type / Metric	Application Answer
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#### Completion Date

Projected date of completion	09/01/2023
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#### Sponsor Match: Monetary Funding

Amount of other monetary funding (A.12)	\$0.00
Source of other monetary funding (A.12.a)	0
Timing of other monetary funding	NA

#### Sponsor Match: Donated Un-paid Labor (volunteers)

Value of Donated Unpaid Labor (Volunteers) (A.13.a.2)	\$0.00
Source of Donated Un-paid labor contributions (A.13.a.4)	NA

#### Sponsor Match: Donated Paid Labor

Value of Donated Paid Labor (A.13.b.1)	\$0.00
Source of Donated Paid Contributions (A.13.b.2)	NA

#### Sponsor Match: Other In-kind Contributions

Value of Other In-Kind Contributions (A.13.c.1)	\$13,790.00
Source of Other In-Kind Contributions (A.13.c.3)	Bonneville Power Administration
Description of other In-Kind contributions (A.13.c.2)	PIT tags

### Project Funding

Funding Request		Funding %	Sponsor Match Source	
Salmon Federal Activities	\$78,109	84.99 %	Donated Materials	\$13,790
Sponsor Match	\$13,790	15.01 %		
Total Project Funding	\$91,899	100.00 %		

#### Project Cost Summary

##### MONITORING COSTS

	Project %	Admin/A&E %	Maximum for Selected Program
Monitoring	\$91,899		
A&E	\$0	0.00 %	\$0
Subtotal	\$91,899	80.24 %	
<b>Total Cost Estimate</b>	<b>\$91,899</b>	<b>80.24 %</b>	

### Worksites and Properties

# Worksite #1: Touchet Smolt Trap - just below Harvey-Shaw Rd Br

Coordinates from Mapped Point:

Latitude: 46.28738532

Longitude: -118.48939607

Coordinates from Worksite  
Directions:

Latitude: 46.287957

Longitude: -118.487963

## Worksite Description:

**Site Access Directions:** Heading west on HWY 261 from Dayton or Waitsburg. Go thru the town of Prescott, and then turn on the exit for Lyons Ferry/Harvey Shaw Road. Turn left and go under the freeway overpass. Immediately before the bridge, pull off to the right and park. Smolt trap is located 50m downstream.

## Worksite Address:

## Monitoring Metrics (Outcomes, Benefits)

Category / Work Type / Metric	Application Answer	Work Type Costs
Priority in Recovery Plan	This project is identified as a top priority and located in a major spawning area for Steelhead and a priority restoration reach in the Snake River Salmon Recovery Plan and 3 yr workplan.	
Number of Reports Prepared (E.0.e.1)	1	
Name Of Report (E.0.e.2)	Touchet River Smolt Trapping Brief. Multiple Reports Available. Report to the Fish In / Fish Out Monitoring Panel under the GSRCO	
Project Identified in a Plan or Watershed Assessment (E.0.c)	Northwest Marine Fisheries Service. 2009. Middle Columbia River Steelhead Distinct Population Segment ESA Recovery Plan. Portland, OR.	
Number of Cooperating Organizations (E.0.d.1)	0	
Name Of Cooperating Organizations (E.0.d.2)	None	
Complement Habitat Restoration Project (E.0.b)	None	

### Monitoring

Acres of watershed area monitored (E.1.b.2)	473600.0	
Record Name Of Strategy/Program (E.1.d)	Bonneville Power Administration (BPA), National Oceanic Atmospheric Administration, and Northwest Power and Conservation Council, 09/20/2019 (Staff Draft), Columbia Basin Habitat Research, Monitoring and Evaluation Strategy. BPA	
Stream Miles Monitored (E.1.b.1)	100.00	
<b>Salmonid smolt or fry monitoring (E.1.c.2)</b>		
Total cost for Salmonid smolt or fry monitoring		\$73,740.00
# miles (to nearest 0.01 mile) monitored for Salmonid smolt or fry (E.1.c.2.a)	100.00	

### Agency Indirect Costs

#### Agency Indirect

Total cost for Agency Indirect		\$18,159.00
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## Overall Project Questions

0	<b>Does this contract have to be filed with OFM?</b> no
0	<b>Is this a sole source contract?</b> yes
0	<b>Is this project located at a hatchery or hatcheries? If so, provide the hatchery name(s):</b> no
0	<b>What type of contract is this: Purchased Service, Personal Service, Interagency Agreement?</b> IAA
0	<b>Who will be responsible for administration, design, and/or implementation of this project (i.e. in-house staff, paid consultants, contractors, volunteers, other agency staff, etc.)? Explain.</b> Project Sponsor (WDFW)

## Project Attachments

Attachment Type	Title	Attach Date
Cost Estimate	Touchet Smolt SAL-CostEstimate (Draft).xlsx	01/30/2020
Photo	Touchet smolt Trap Photo 2.jpg	01/30/2020
Photo	Touchet Smolt Trap Photo 1.jpg	01/30/2020

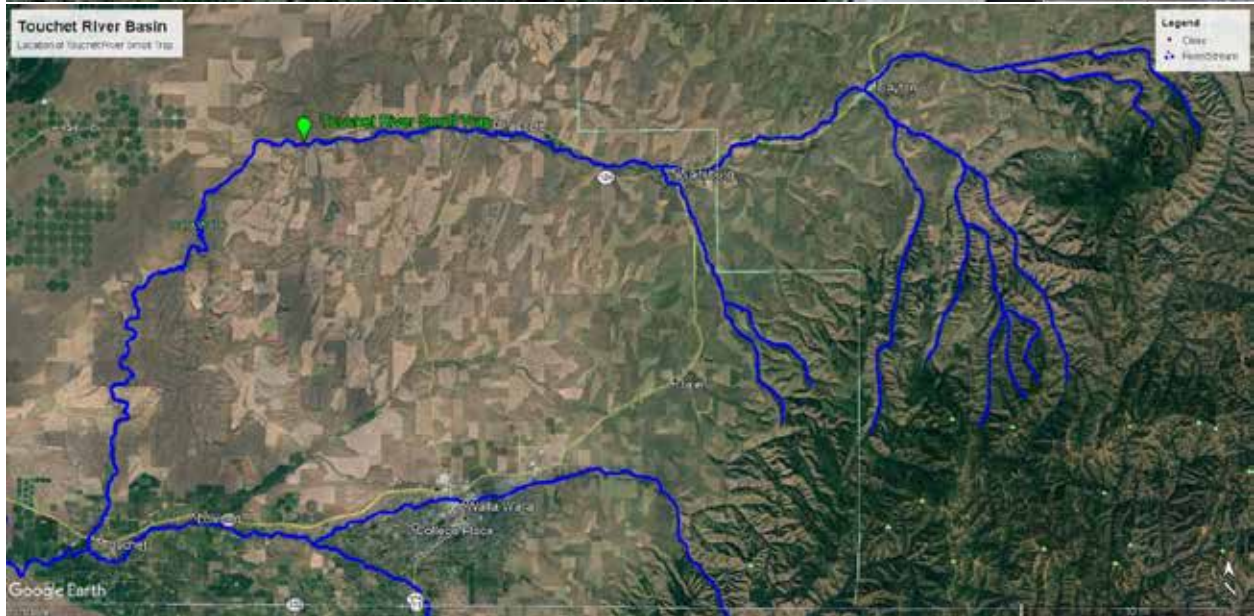
Project partnership form	CTUIR_ProjectPartnership_WDFW_252020.pdf.pdf	02/25/2020
Visuals	Touchet Smolt Trap Vicinity Map.jpg.jpg	01/30/2020
Visuals	Touchet Smolt Trap Up Close Aerial .jpg.jpg	01/30/2020
Visuals	Touchet Smolt Trap APE Basin 2.jpg.jpg	01/30/2020

## Application Status

### Application Due Date:

Status	Status Date	Name	Notes
Preapplication	01/15/2020		

Date of last change: 03/03/2020





# Landowner Acknowledgement Form

## Landowner Information

Name of Landowner: Northwest Grain Growers

Landowner Contact Information:

Mr.  Ms. Title:

First Name: John

Last Name: Cranor

Contact Mailing Address: P O Box 310, Walla Walla WA 99362

Contact E-Mail Address: Jcranor@nwgrgri.com

Property Address or Location:

1. Northwest Grain Growers (Landowner or Organization) is the legal owner of property described in this grant application.
2. I am aware that the project is being proposed on my property.
3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
4. My signature does not represent authorization of project implementation.



Landowner Signature

2-20-20

Date

## Project Sponsor Information

Project Name: Touchet River Smolt Trapping Project

Project Applicant Contact Information: Joe Bumgarner

Mr.  Ms. Title: Fisheries Biologist IV

First Name: Joe

Last Name: Bumgarner

Mailing Address: 401 S. Cottonwood, Dayton, WA 99328

E-Mail Address: Joseph.Bumgarner@dfw.wa.gov





## Regional Organization Monitoring Project Certification

**Project Name: Touchet River Smolt Trapping**

**Project Number: 20-1093**

**Regional Organization: Snake River Salmon Recovery Board**

### Questions:

- 1. Explain how the project will address a high priority information need or data gap in your recovery plan and/or associated regional research, monitoring, and evaluation (RME) plan or lead entity strategy.**

Provided support will continue the operation/maintenance of the Touchet River Smolt trap to address data gaps (Viable Salmonid Population parameters – VSP) that are critical to delisting of Mid-Columbia River (Mid-C) summer steelhead. Delisting of Mid-C summer steelhead has been discussed for years, but the lack high quality VSP information has limited the ability of the Federal Agencies to change the current status of the Umatilla/Walla Walla Major Population Group. Population monitoring as addressed in this project (juvenile and adult) is a foundational component of science-based recovery actions and tracking progress towards recovery. The main monitoring objectives for the Touchet River smolt trap include: 1) estimate smolt yield (production), 2) document life history diversity of smolts, 3) tagging all juvenile migrants with Passive Integrated Transponder tags (PIT). From this, other monitoring projects in the basin can 1) monitor the juvenile outmigration and survival through the lower Touchet/Walla Walla rivers and the Columbia River hydro-system, and 2) estimate smolt-to-adult survival (SAR), adult abundance, and eventually productivity (recruits/spawner) from adults returning with PIT tags. Adult abundance and distribution to the Walla Walla/Touchet river basins will be estimated using a series of instream PIT tag arrays. Therefore, operation of the Touchet River smolt trap and PIT tagging all juveniles, the resulting estimates (juvenile and adult abundance and productivity) from PIT tagged fish will play a critical role in the de-listing evaluation. This proposed monitoring project is consistent with expanded Research, Monitoring & Evaluation efforts identified in the Snake River Salmon Recovery Plan, which were further referenced in the 2009 Mid-Columbia DPS steelhead recovery plan adopted by NOAA Fisheries. Additionally, the Regional Technical Team has identified VSP data in the Touchet watershed specifically as a high priority critical data gap.



**2. Explain how the monitoring will complement, enhance, or leverage ongoing monitoring efforts. Describe communication you have had with other monitoring practitioners of ongoing monitoring efforts.**

Fish (primarily summer steelhead) monitoring in the Touchet River basin has been fairly limited over the years, and is frequently limited by high spring time river flows. Historically, WDFW conducted electrofishing and spawning ground surveys to estimate the abundance of juveniles and adult steelhead in the areas upstream of the city of Dayton. Upgrades to the Dayton Intake Dam in 2007 allowed for better adult return information (age composition of returning adults), but adults are still able to bypass the trap under high flow conditions, hence these trap counts are not usable to describe total adult returns. Further, these monitoring efforts were above other known areas of steelhead spawning and rearing, so the data were incomplete from a basin-wide perspective. The BPA funded Walla Walla Monitoring and Evaluation project expanded these initial monitoring efforts in the basin with juvenile surveys (snorkel or electrofishing) in the Touchet River from Dayton downstream to determine the extent of the juvenile rearing areas, and currently the project operates adult traps in Coppei and Patit creeks. However, estimating total adult steelhead returns to the Touchet River basin is still problematic as adult traps or conducting spawning ground surveys in the mainstem of the Touchet River from Dayton to Prescott (where adults are known to spawn and juveniles rear) are not possible in most years.

An alternative method to estimating adult steelhead abundance is through the use of PIT tags and instream PIT tag arrays. This method has been proven by WDFW as very effective method for steelhead monitoring in the upper Columbia River. In the case of the Touchet River, PIT tags are inserted into every juvenile steelhead captured at the Touchet River smolt trap, with some of those eventually returning as adults. By estimating the number of smolts that left the basin, and the proportion PIT tagged, it's possible to estimate the total adults returning. Currently, there are five instream PIT tag arrays in the Touchet River basin (monitored and maintained by WDFW), three in the mainstem Touchet River -Harvey-Shaw road, Bolles Bridge, and just downstream from the Dayton Intake Dam, and two in tributaries to the mainstem Touchet - Coppei and Patit creeks. It's believed that all successful adult steelhead spawning takes place above Harvey-Shaw road, so the PIT tag estimate should represent 100% of the spawners. The early model results are promising and this methodology could be invaluable for steelhead monitoring in streams throughout the region where estimating accurate and precise estimates of steelhead escapement has been difficult, as the Touchet River has been. In time, PIT tag estimates would replace adult weir estimates and we should be able to shift funding away from adult trapping and direct it toward the juvenile smolt trapping operations on the Touchet River.

WDFW has coordinated with the Confederated Tribe of the Umatilla Indian Reservation (CTUIR), whom together make up the fisheries co-managers in the Walla Walla Watershed and implement fisheries related monitoring collectively. CTUIR is supportive of the project and have provided a signed project acknowledgement form.

**3. Explain why SRFB project funds are being used rather than funds from other sources.**

Prior to 2018, approximately ~\$80,000 of the annual project costs came from two Bonneville Power Administration (BPA) supported projects (Walla Walla Monitoring and Evaluation project and Lower Snake River Compensation Plan (LSRCP)). Recent budget cuts at BPA greatly affected both of these projects, and coupled with increasing labor and material costs, have left the Touchet River Smolt Trap Monitoring project well short of actual operating costs. Requests to other funding sources have failed to this point.

#### 4. List of Projects

Project Number	Project Name	Project Sponsor	SRFB Request	Matching funds
#20-1093	Touchet River Smolt Trapping	WDFW	\$78,109	\$13,790 identified, total other related monitoring costs=\$86,716
				Total Project Costs (for all aspects) = \$178,615

**TOTAL AMOUNT of Request: \$78,109**

**AMOUNT of Allocation: 5%** 2020 Regional SRFB Allocation Anticipated to be \$1,519,200.

I do hereby certify under penalty of forfeiture of the above monitoring project amount(s) proposed out of SRFB allocation to the

SNAKE RIVER SALMON RECOVERY REGION that the above named project(s) will:

- Address a high priority information need or data gap identified within our recovery plan and/or associated regional research, monitoring, and evaluation (RME) plan or lead entity strategy.
- Not duplicate or interfere with ongoing monitoring efforts.
- Be consistent or compatible with data collection, analysis, and management methods and protocols being used within the region and shall to the maximum extent practicable be consistent or compatible with methods and protocols in common use throughout the state.

- Make data available to the RCO, the public, and the SRFB Monitoring Panel.
- Not exceed 3 years.
- Total 10 percent or less than our regional allocation.

**Authorized Signature: Bill Bowles**

Signed By:   
Bill Bowles, Chair, Snake River Salmon Recovery Board

**Title:** Board Chair

**Date:** 3-6-2020

# Project Partner Contribution Form

**Project Partner: Confederated Tribes – Umatilla (CTUIR)**

**Partner Address:**

**Nixyaawii Governance Center**

**46411 Timine Way**

**Pendleton, OR 97801**

**Contact Person**

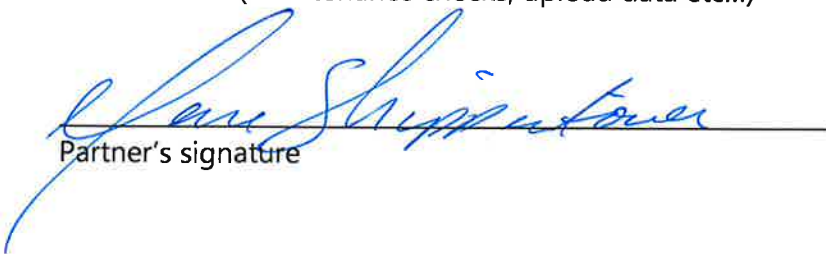
Mr.       Ms.      Title: RM&E Program Supervisor  
First Name: Gene      Last Name: Shippentower  
Mailing Address: same as address listed above  
E-Mail Address: GeneShippentower@ctuir.org

**Description of contribution to project:**

**CTUIR will collaborate with WDFW on all smolt sampling efforts in the Walla Walla River basin. CTUIR's Walla Walla M&E project currently maintains a series of PIT tag array antennas throughout the mainstem Walla Walla river and two floating PIT tag arrays near the confluence. These existing PIT arrays will help WDFW goals of estimating viable salmonid population (VSP parameters) metrics for steelhead leaving Touchet River.**

**Estimated value to be contributed: \$**

Initial deployment of 2 floating PIT arrays in lower Walla Walla River	\$92,000
Annual O&M (maintenance checks, upload data etc...)	\$10,000

  
Partner's signature

  
Date

# Regional Monitoring Study Plan

## Touchet River Smolt Trapping

Project Number	#20-1093
Project Name	Touchet River Smolt Trapping
Sponsor	Washington Department of Fish and Wildlife

Please attach a detailed study plan in PRISM titled "Study Plan" that includes the elements below. Present the information in any order.

1. **Purpose. Describe the information needs and how these data will be used.**
  - A. ***Describe how the proposed monitoring will provide data essential for advancing salmon recovery.***

Since inception, the main goals of the Touchet Smolt Trap monitoring program has been to understand smolt yield, life history diversity, and smolt-to-adult survival (SAR) for long-term monitoring of restoration action effects within the basin. In addition, central to this project is the ability to characterize downstream survival through the Touchet, Walla Walla, and Columbia rivers that is made possible by the large number of juvenile steelhead that are captured and tagged with Passive Integrated Transponder (PIT) tags. As a result of new technologies and installation of instream PIT tag arrays in the Touchet River basin, we are currently refining a novel approach to estimating adult steelhead abundance (and eventually productivity) that relies upon the juvenile PIT tagging at the smolt trap. The early model results are promising and this methodology will be invaluable for steelhead monitoring in streams throughout the region where estimating accurate and precise estimates of steelhead escapement has been difficult. This monitoring project will provide more improved estimates of critical Viable Salmonid Population (VSP) parameters, mainly adult abundance and adult productivity, for Touchet River summer steelhead. Delisting of Mid-Columbia River Distinct Population Segment (DPS) summer steelhead has been discussed for years, but the lack of high quality VSP information has limited the ability of the Federal Agency (National Marine Fisheries Service – NMFS) to change the current status of the Umatilla/Walla Walla Major Population Group. The changes we've been implementing in the Touchet to address VSP information limitations are critical and could make the Touchet steelhead population among the most data rich in the Mid-C DPS.

***What high priority information needs or data gaps identified within the regional recovery plan and/or associated regional research, monitoring, and evaluation plan (or lead entity strategy in areas without a recovery region) will the study address?***

VSP metrics: Abundance (juvenile and adult), productivity (juvenile - smolts/spawner) and (adult – smolt to adult and recruits/spawner), life history diversity (juvenile), and broad scale spatial structure (based on PIT tag array distribution).

***What salmonid fish species will benefit?***

Summer Steelhead – Mid-Columbia River DPS

***B. Explicitly identify the geographic scale of data collection and conclusions referred to within the data. Describe if the design and analyses allow for generalized results beyond the initial geographical scale of the project.***

The data collected at the Touchet River smolt trap (because of its location within the basin) will estimate the total population of out-migrating summer steelhead from the entire Touchet River basin. There is no successful spawning downstream of the current smolt trap location. In addition, the life history diversity (age and size of migrants) leaving the basin will be described.

***If the project is a part of a larger overall monitoring project or strategy, describe the goal of the overall strategy, explain individual sequencing steps, and which steps are included in this application for funding.***

This project is a part of a larger overall monitoring strategy in the Touchet River basin, all of which are used to estimate adult returns of steelhead. Additional monitoring also occurs at three in-basin adult summer steelhead traps (Coppei, Patit, and Dayton), all of which monitor adult steelhead returns to these specific locations. Spawning ground surveys also occur in the major forks upstream of the city of Dayton (North, South, Wolf and Robinson) to estimate spawning steelhead in those locations.

While these efforts have proven mostly successful, they are incomplete because there are areas of the Touchet River (mainstem – from the forks above Dayton to Prescott (~20 miles) where adult summer steelhead are able to successfully spawn and produce juveniles. The new approach described above to estimate adult returns using PIT tags and in-stream PIT tag arrays will allow for a more complete adult return estimate of summer steelhead (both hatchery and wild origin) to the basin.

Overall, the sequencing of steps will be as follows

- 1) Operate the Touchet River smolt trap from October through June annually. PIT tag all captured juvenile steelhead, estimate juvenile production and describe life history diversity of out-migrants (**Funding from this application**).
- 2) Estimate downstream survival and out-migration timing of PIT tagged juveniles through the lower Touchet and Walla Walla rivers, and through the mainstem Columbia River hydro system (**Funding from other sources, BPA and LSRCP**).
- 3) Through expanded PIT tag detections, estimate adult abundance and spatial distribution to the Walla Walla/Touchet river basins from detections at instream PIT tag arrays and recoveries at adult traps/weirs. Eventually, estimate natural origin steelhead recruits/spawner productivity for the Touchet River basin (**Funding from other sources, BPA and LSRCP**).

***Attach a map in PRISM that illustrates how this project fits into the overall strategy, if relevant.***

Area maps of the project have been attached in PRISM

- C. ***Are these data available from other sources (literature, other SRFB monitoring, etc.) or being adequately addressed by prior or ongoing studies or existing literature?***

No other data sources or projects in the basin are fully addressing the data gaps in the Touchet River basin.

***Describe any previous or ongoing assessment or inventory work in the project's geographic area and describe how this project will build upon, rather than duplicate, the completed or ongoing work. Include detail about other monitoring efforts that complement or could help accomplish the overall objective, so that readers can understand the gaps, if any.***

Additional monitoring also occurs at three in-basin adult summer steelhead traps (Coppei, Patit, and Dayton), all of which monitor adult steelhead returns to these specific locations. Spawning ground surveys also occur in the major forks upstream of the city of Dayton (North, South, Wolf and Robinson) to estimate spawning steelhead in those locations. While these efforts have proven mostly successful, they are incomplete because there are areas of the Touchet River (mainstem – from the forks above Dayton to Prescott (~20 miles) where adult summer steelhead are able to spawn and produce juveniles. In addition, sometimes these weirs/traps and/or spawning ground surveys are disabled/limited due to high stream flow events which then make the derived estimates unreliable or highly suspect.

The new approach described above to estimate adult returns using PIT tags and in-stream PIT tag arrays will allow for a more complete and accurate adult return

estimate of summer steelhead (both hatchery and wild origin) to the basin. For the time being, adult weirs/traps and spawning ground surveys are being used to corroborate estimates derived from PIT tags, with results to date very promising.

**D. *How will the study contribute to validating or revising current management strategies or assessing progress toward delisting the focal species? Include explicit ties of the proposed monitoring to advancing our knowledge of viable salmonid populations (VSP) parameters (abundance productivity, spatial structure, diversity) of the focal species.***

Requested funds for this monitoring project will help support the continued operation and maintenance of the Touchet River Smolt trap to address data gaps (Viable Salmonid Population metrics – VSP) in the Touchet River that are critical to informing recovery trajectory and future delisting of Mid-Columbia River (Mid-C) summer steelhead. Delisting of Mid-C summer steelhead has been discussed for years, but the lack high quality VSP information has limited the ability of NMFS to change the current status of the Umatilla/Walla Walla Major Population Group. Population monitoring as addressed in this project (juvenile and adult) is a foundational component of science-based recovery actions and tracking progress towards recovery. The main monitoring objectives for the Touchet River smolt trap include: 1) estimate summer steelhead juvenile outmigration yield (production), 2) document life history diversity of outmigrants, 3) and PIT tag all captured juvenile migrants.

Additional VSP parameters (Adult abundance, productivity, and spatial distribution to the Walla Walla/Touchet basins will be estimated using a series of instream PIT tag arrays. Therefore, operation of the Touchet River smolt trap and the resulting estimates (juvenile and adult abundance and productivity) will play a critical role in the de-listing evaluation.

**E. *Does this study have specific regional importance and provide a regional benefit?***

Delisting of Mid-C summer steelhead has been discussed for years, but the lack high quality VSP information has limited the ability of the NMFS to change the current status of the Umatilla/Walla Walla Major Population Group (MPG). This proposed monitoring project, and other monitoring projects currently funded within the Touchet River, will provide the data to fill the data gaps that currently exist in the Touchet River for summer steelhead. Filled data gaps will allow the NMFS to provide a more complete status review of the Touchet River steelhead population, could potentially change the current status of the Umatilla/Walla Walla MPG, which plays a key role de-listing of Mid-Columbia River steelhead.

***Has the appropriate region shown its support for this project by signing and submitting regional certification?***



Yes, the Regional Certification Form has been signed by the Snake River Salmon Recovery Office Director.

## 2. **Project Goals, Objectives, and Hypotheses.**

- A. ***What are the project's goals? (The goal of the project should fill specific gaps in information essential to salmon recovery efforts. The goal statements should broadly articulate desired ecological outcomes of the proposed activity).***

The goal of this and other monitoring projects in the Touchet River basin are to fill VSP data gaps where they exist. Below are the current VSP data gaps in the Touchet River for summer steelhead.

### 1) Abundance – **Partial Data Gap**

- a. (Juvenile) – Historically, juvenile abundance in Touchet River was limited to areas upstream of Dayton only; thereby incomplete. The operation of the Touchet River smolt trap (at its current location), allows for the complete estimation of juvenile migrant production from the basin and fills a data gap that was once void.
- b. (Adult) – To date, adult abundance estimation in the Touchet River has been mainly limited to the areas upstream of Dayton (spawning ground surveys), and more recently with the operation of adult trap and/or spawning ground surveys in Coppei and Patit creeks. However, these efforts can be limited depending spring time river flows. Further, the area of the mainstem Touchet River from Dayton to Prescott are nearly impossible to operate adult traps or conduct spawning ground surveys in most years due to the high flows. So, while some adult abundance information is available, it's still considered a data gap.

### 2) Productivity – **Data Gap**

- a. (Juvenile – juvenile and/or smolt/spawner) – Adult steelhead escapement or spawning abundance (both hatchery and wild origin fish) is not currently known for the entire Touchet River. Therefore; juvenile production at the smolt trap (smolt/spawner) cannot be calculated. As such, it's impossible to gauge whether Touchet River summer steelhead are at full production potential or if other factors in the basin are limiting production and at what life stage.
- b. (Adult – recruits/spawner) – Adult steelhead escapement or spawning abundance (both hatchery and wild origin fish) is not currently known for the entire Touchet River. Therefore; overall productivity (i.e. the number of

recruits/spawner – the gauge used to determine if a population is in overall decline, stable, or increasing) cannot be calculated.

### 3) Spatial Structure - **Partial Data Gap**

In relative terms, the spatial distribution of summer steelhead in the Touchet River basin is mostly known from previous adult spawning ground surveys or previous juvenile electrofishing/snorkel surveys. In nearly all areas that have been deemed suitable for *O. mykiss* (steelhead/rainbow trout), they have been found in those areas.

However, a complication arises from the production of hatchery steelhead within the basin (Lower Snake River Compensation Program mitigation – Wallowa and Touchet stocks). All hatchery steelhead are currently released from the Dayton Acclimation pond (in the city of Dayton ~1 mile below the confluence of the North and South forks of the Touchet River. Based on harvest, it appears that many of these hatchery fish return close to the area of release. However, since surveys/traps can't be conducted/operated in the mainstem Touchet River, it's unclear how many hatchery adults return to the basin and where they might be spawning.

With the installation of PIT tag arrays in the basin (Harvey Shaw Array (HST) at the smolt trap location, Bolles Bridge Array (BBT) – between Prescott and Waitsburg, Coppei Array (COP) – near the mouth of Coppei Creek, Patit Array – near the mouth of Patit Creek, and Dayton Juvenile Pond Array (JPT) – immediately below the Dayton Dam/Adult Trap in the mainstem Touchet River), the spatial distribution of wild and hatchery origin steelhead will be better understood.

Instream PIT tag arrays in the lower Walla Walla administered by CTUIR are also critical to this question of spatial structure and diversity as they relate to both juvenile and adult run timing and survival through the migratory corridor.

### 4) Diversity – **Known**

In relative terms, diversity (either as life history (age) or genetic) is generally known. Previous monitoring at the smolt trap has documented the age of outmigrants, and previous monitoring at adult traps have described age of returning adults. Microsatellite analysis (Blankenship et al 2007) of tissues collected in the early 2000's documented how Touchet River steelhead are unique compared to either Walla Walla or Tucannon River summer steelhead populations (the closest neighboring steelhead populations to the Touchet River). As such, data on steelhead genetic diversity is not considered a data gap in the Touchet River.

In the future, adult and juvenile life history strategies will continue to be monitored annually. Genetic analysis could occur again in the future if warranted to answer a more specific questions (e.g. hatchery stock introgression).

- B. ***What are the project's objectives? (Objectives support and refine the goals, breaking them down into smaller steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). State SMART objectives as expected "outcomes" rather than "output." Monitoring project objectives should tell a reader what the sponsor wants to learn rather than what they will do. The description should include clearly stated, testable hypotheses).***

**Objective 1:** From October through June (when stream flows allow) operate the trap to estimate summer steelhead juvenile/smolt abundance for VSP monitoring.

**Objective 2:** From October through June (when stream flows allow) operate the trap to document and describe the age of out-migrating steelhead juveniles/smolts for VSP monitoring.

**Objective 3:** From October through June (when stream flows allow) operate the trap to capture a representative group of out-migrating steelhead in which PIT tags can be inserted. PIT tagged juveniles allow for the estimation of downstream survival, out-migration timing, smolt-to-adult survival, adult abundance, and adult productivity, some of which are primary VSP data gaps for Touchet River summer steelhead.

### 3. **Methods.**

- A. ***Sampling design. Provide a written description and map of the sampling locations. If locations are not yet defined, describe the process by which the sponsor will identify sampling locations.***

The Touchet River smolt trap is located below all known summer steelhead spawning and juvenile rearing areas of the Touchet River (see Maps provided in PRISM for specific location). For this project, it's the only sampling location.

- B. ***Data collection methods. Describe or reference the response variables or metrics evaluated, the rationale for their selection, field methods, protocols, and essential equipment. Are the selected metrics consistent with ongoing monitoring efforts in the region? If not, provide justification for the departure.***

The project has developed smolt trap operational protocols describing the work conducted and the analysis methods we utilize. Those protocols and methods are

published on the Pacific Northwest Aquatic Monitoring Partnership's (PNAMP) Monitoring Methods website. The title and web address for the smolt trap protocol is found below:

Asotin Creek Juvenile Sampling and Analysis (2002-053-00)  
<http://www.monitoringmethods.org/Protocol/Details/791> Asotin Creek Salmonid

**C. *Analytical approach. Describe the statistical tests used to test the hypotheses identified in Part B of the Study Plan. Include a preliminary power analysis.***

There are no hypothesis being tested in this monitoring proposal. The main goal is for the operation/maintenance of the trap, to capture juvenile out-migrants (estimate the abundance and describe life history), and PIT tag all juveniles captured.

**D. *Data management. Describe the sponsors approach to data management, storage, and archival to ensure data quality and availability for sharing.***

All data is captured electronically via Panasonic Toughbooks using the P4 software (PTAGIS: P4version 1.25). Daily data is backed up to a secondary hard drive once staff return from the field each day. Data is then QA/QC for potential errors and corrected. Once all errors are corrected, the refined database is uploaded to the WDFW Office 365 Cloud Storage.

Summary data (estimated derived post-season for reporting purposes) will be uploaded to regional datasets (i.e. StreamNet, WDFW's Juvenile Migration Exchange (JMX)) as deemed appropriate for such data.

**E. *Dissemination of results. How will the sponsor disseminate collected data and reports?***

An annual smolt trapping report will be produced. Currently, partial funding for this project is provided through the Washington State Recreation and Conservation Office (RCO) which provides funds to the Washington Department of Fish and Wildlife for Fish In / Fish Out monitoring to various projects across the State of Washington. A single annual report will be produced and will be posted on the RCO website. Requests for specific data collected (other than what's provided in the annual report) can be requested through the project sponsor to ensure data integrity is maintained.

**4. Tasks and Schedule.**

**A. *Identify project collaborators and their roles and contributions to the project. Provide a detailed description of the proposed project tasks, the party responsible for each task, a schedule or timeline for accomplishing them, and list the project deliverables. Include an annual report as a deliverable.***

None: At this point we don't anticipate any other project collaborators other than current WDFW staff. All project tasks (setting and operation of the trap, all data collection, all smolt data analysis and estimation, scale collection and processing, PIT tagging and uploading of PIT tag files, and annual report writing) will be done by WDFW project staff. Tasks listed will be completed on a daily, weekly, monthly, or annual basis (as needed by task). All data analysis and report writing will be complete during the summer following the smolt out-migration (August of each year).

Specific project deliverables will include: 1) estimate summer steelhead juvenile/smolt abundance, 2) describe the age of out-migrating steelhead juveniles/smolts, and 3) upload and provide specific information on all PIT tagged juveniles from the smolt trap.

## 5. **Assumptions and Contingencies.**

### A. ***Identify assumptions and constraints that could affect the sponsor's ability to achieve objectives and how the sponsor will modify the approach if the sponsor does not meet assumptions.***

A constraint that can affect our ability to achieve our objectives is stream flow and conditions. High stream flows and large debris can damage the trap, injure/kill captured fish, and create unsafe conditions for staff operating the trap. Extreme freezing temperatures can also disable the trap for periods of time as the trap will literally "freeze" to a stop. Addressing periods of non-trapping can be found in the methods section above with the link to the trapping protocol provided.

**Trap Repairs:** Trap repairs can be costly and take time to complete. For example, a smolt trap cone (that part that captures the fish as they migrate by) costs ~\$10,000 and generally requires months to obtain one. Other parts are easier to come by, but sometimes accessing the trap to make the repairs can't occur until the flows recede. As such, there are times when the decision is made to stop trapping (lift the cone and live box out of the way) until the harsh conditions pass then set the trap again. Addressing periods of non-trapping are described in the estimation methods.

**Fish Mortality:** To operate the Touchet River smolt trap, WDFW submitted a Hatchery Genetic and Management Plan (HGMP) for the hatchery steelhead programs in the Touchet River (WDFW 2015). Smolt trapping and subsequent "take" of ESA listed steelhead was proposed in the HGMP, submitted to and consulted upon by NOAA Fisheries under Section 4(d). Any mortality in excess of "take" limits proposed in the HGMP require immediate notification to NOAA Fisheries. During these times the trap must be pulled while an agreement for additional "take" is determined. Addressing periods of non-trapping is described in the methods.

**Safety:** Human safety on the project is paramount. Staff wear life jackets when on the trap, even in low flow conditions. It is not the intention of the sponsor to put staff at risk when alternatives are available.

## 6. Literature Cited.

- A. ***If available, clearly cite documents referenced within the study plan with electronic links. If supporting documents are not publicly available, they should be loaded onto PRISM. Where appropriate, a brief literature review can be included in the study plan.***

Asotin Creek Juvenile Sampling and Analysis (2002-053-00)

<http://www.monitoringmethods.org/Protocol/Details/791> Asotin Creek Salmonid

Blankenship, S. M., M. P. Small, J. D. Bumgarner, M. Schuck, and G. Mendel. 2007. Genetic Relationships Among Tucannon, Touchet, and Walla Walla River Summer Steelhead (*Oncorhynchus mykiss*) Receiving Mitigation Hatchery Fish From Lyons Ferry Hatchery. WDFW Internal Report. 39 pp.

Washington Department of Fish and Wildlife. 2015. Touchet River Endemic Stock Summer Steelhead - Touchet River Release – Hatchery and Genetic Management Plan (HGMP). Submitted to NOAA Fisheries on November 6, 2015. 89pp.

### Comments

Monitoring projects will not usually include a site visit by the Monitoring Panel, but site visits may occur at the panel's discretion. Use this section to respond to any questions that the sponsor received after submitting the final application.

### Response to Post-Application Questions

Please describe how the sponsor responded to the SRFB Monitoring Panel's post-application questions. *List each of the monitoring panel's questions here and use this space to respond directly to the questions. Update the proposal to be consistent with comments.*