

# Wild Fish Conservancy BDA Construction and Monitoring

WFC and partners refined a beaver intrinsic potential model and used it to site, design, construct, and monitor beaver dam analogs in a fish-bearing headwater stream in King County, WA.

Jamie Glasgow, Director of Science

Wild Fish Conservancy

[www.wildfishconservancy.org](http://www.wildfishconservancy.org)

<https://storymaps.arcgis.com/stories/5c5da9c3fd4a46488fc6088af60cae8d>



BDAs in Cherry Creek headwaters near Duvall, Washington.

# Cottonwood Log Pilot Planting Project

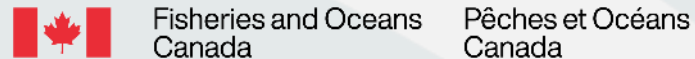
Project was completed by DFO Habitat Restoration and Skeetchestn Natural Resources.

Live stakes were planted deep underground with a log to help retain moisture and provide organic material.

A mini excavator was used to dig the trench, but it may be possible with hand tools in other substrates/areas.

## DFO BC Interior Habitat Restoration Team

DFO.PACHabitatRestorationBCI-  
RestaurationdelhabitatIBCPAC.MPO@dfo-mpo.gc.ca



Deadman River, near Savona BC.



# Spawning Weirs

“Build It & They Will Come”

For the past dozen years, Cougar Creek Streamkeepers have been creating simple boulder weirs, behind which spawning gravels accumulate (and sometimes we add gravel). Great spawner success at these locations. Wild coho population has steadily increased in our suburban creek since we began doing this.

*Cougar Creek Streamkeepers (North Delta / Surrey, BC)*

Project Leads: Bob Scanlon & Pete Willows

Contact: Deborah Jones

[inielsen@dccnet.com](mailto:inielsen@dccnet.com)



Cougar Creek Watershed, North Delta BC, Canada

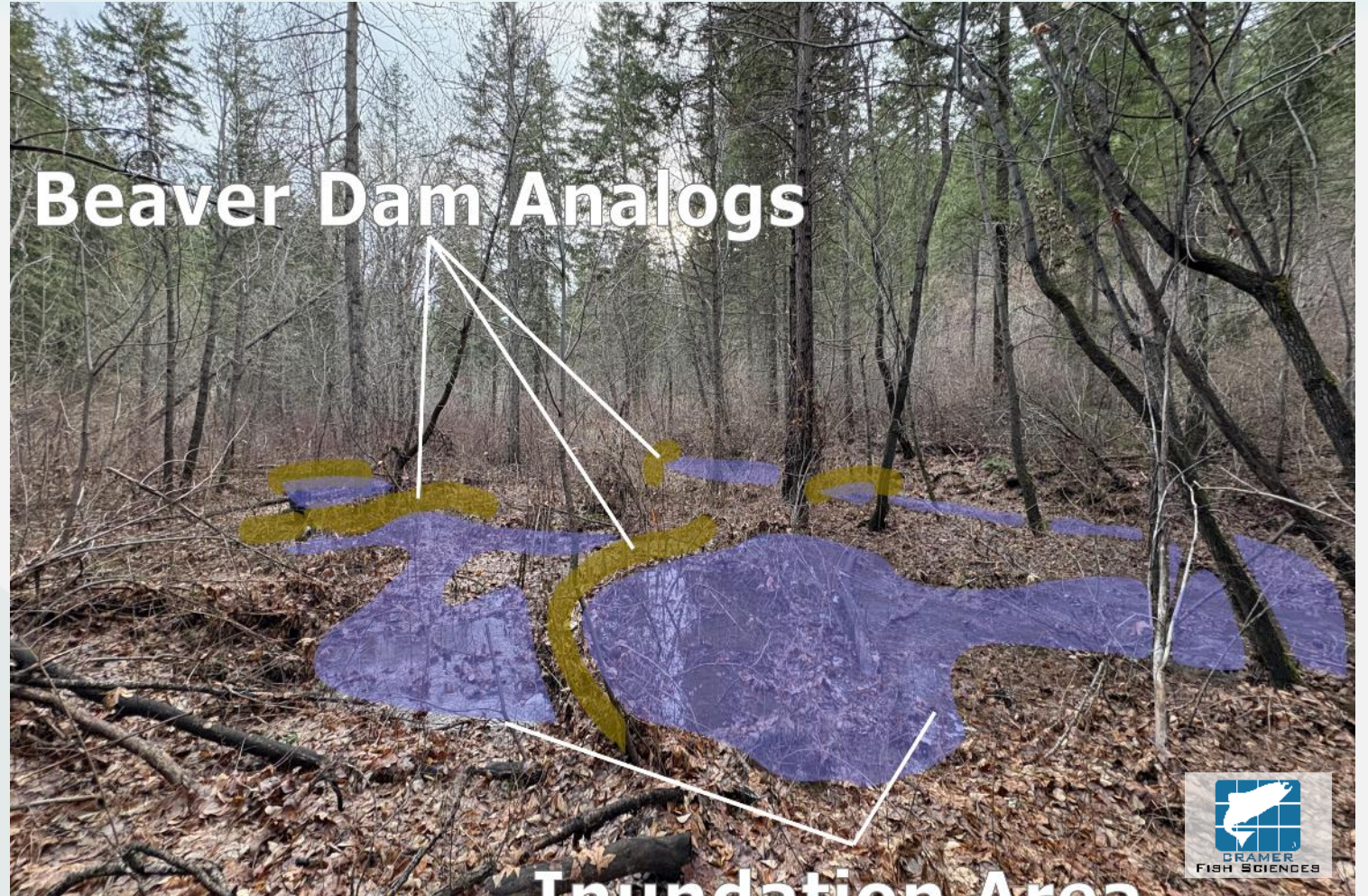
# Bjork Creek LTPBR

Completed in partnership with Chelan Resources, Chelan County Natural Resources Department, and Cramer Fish Sciences.

Restoration of an incised stream to increase floodplain connection and resilience, reverse incision, and restore normative stream flow.

Bryan Maloney – CCNRD  
[bryan.Maloney@co.chelan.wa.us](mailto:bryan.Maloney@co.chelan.wa.us)

Zack DeLuca – Cramer Fish Sciences  
[Zack.deluca@fishsciences.net](mailto:Zack.deluca@fishsciences.net)



Bjork Creek – Chumstick Creek Watershed – Leavenworth, WA

# Eelgrass Restoration Through Seeding: Low-Tech Pilot in BC

Eelgrass restoration by transplant is an effective and proven method. Restoration through seeding is value-added to any transplant project with:

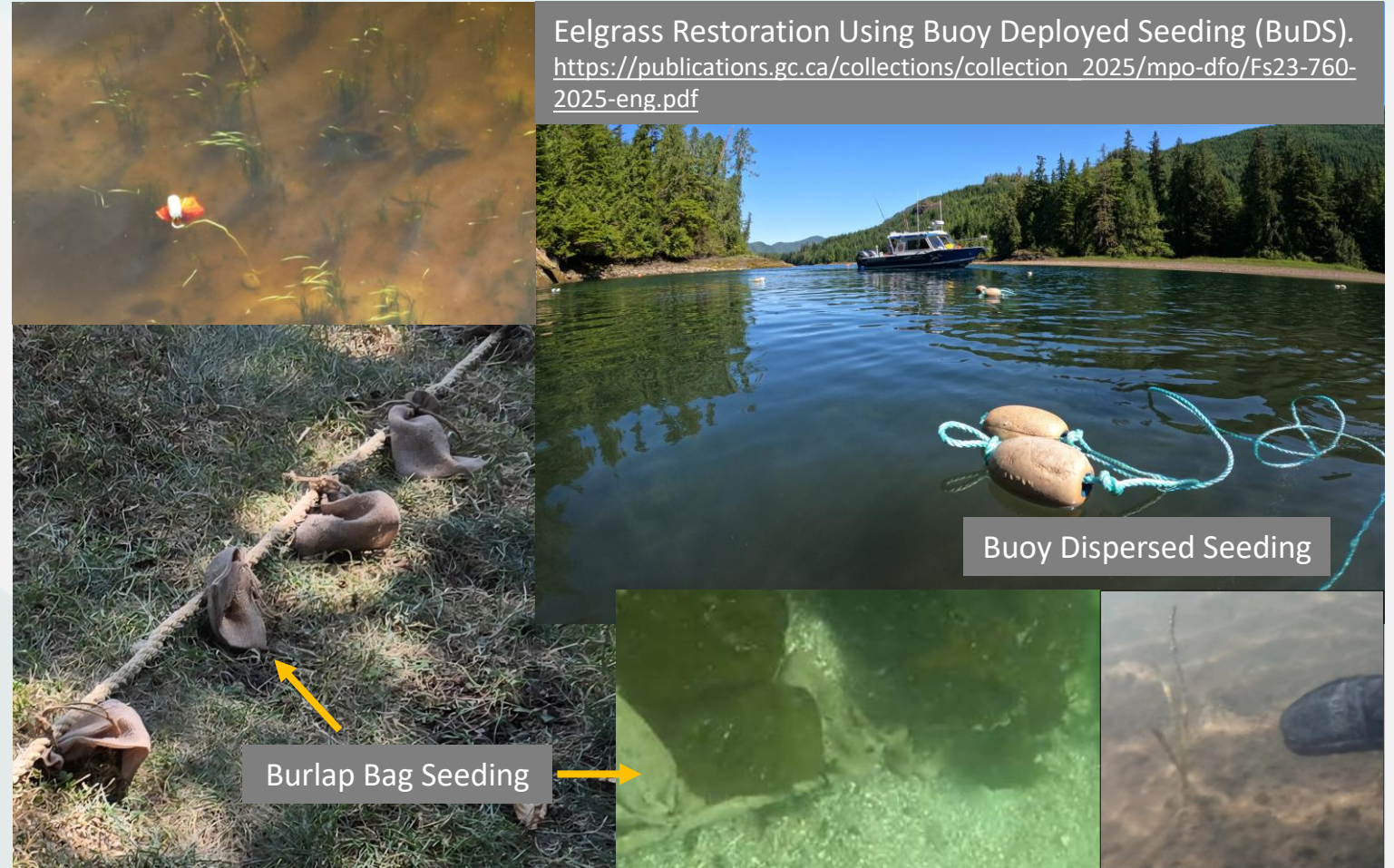
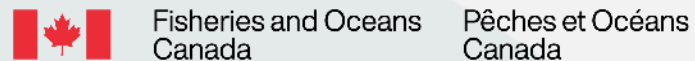
- Increased genetic diversity
- Potential increased resiliency
- Low cost
- Low tech

2 methods piloted 2023-25

- Buoy Dispersed Seeding (BuDS)
- Burlap Bag Seeding (BBs)

Angela Spooner, Fisheries & Oceans Canada  
*Coastal Habitat Restoration Biologist*

[angela.spooner@dfo-mpo.gc.ca](mailto:angela.spooner@dfo-mpo.gc.ca)



Eelgrass Restoration Using Buoy Deployed Seeding (BuDS).  
[https://publications.gc.ca/collections/collection\\_2025/mpo-dfo/Fs23-760-2025-eng.pdf](https://publications.gc.ca/collections/collection_2025/mpo-dfo/Fs23-760-2025-eng.pdf)

Buoy Dispersed Seeding

Burlap Bag Seeding

- **səlilwət** (Burrard Inlet), with **Tsleil-Waututh Nation** (near Vancouver, BC)
- Hankin Cove, with **Ka:'yu:'k't'h'/Che:k:tles7et'h' First Nation** (Kyuquot Sound, BC)
- Gordon River, with **Pacheedaht First Nation** (Port Renfrew, BC)
- **Juus Káahlíi** (briefly known as Juskatla), with **Council of Haida Nations** (Haida Gwaii, BC)

# Clayburn Creek Stewardship and Restoration Project

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Habitat complexing and bank stabilization

- Post Assisted Log Structures (PALS)
- Willow staking
- Woven cedar brush fencing
- Installed 2024/2025

John McDonald, Restoration Biologist

Sumas First Nation Department of  
Governance and Natural Resources

[John.mcdonald@sumasfirstnation.com](mailto:John.mcdonald@sumasfirstnation.com)



Clayburn Creek, Abbotsford, British Columbia



PACIFIC SALMON  
FOUNDATION

# JOIN 450+ SALMON LEADERS FOR TWO DAYS OF CONNECTION

OCTOBER 15 & 16, 2026  
VANCOUVER CONVENTION CENTRE

# LT-PBR

## Design, Implementation & Monitoring

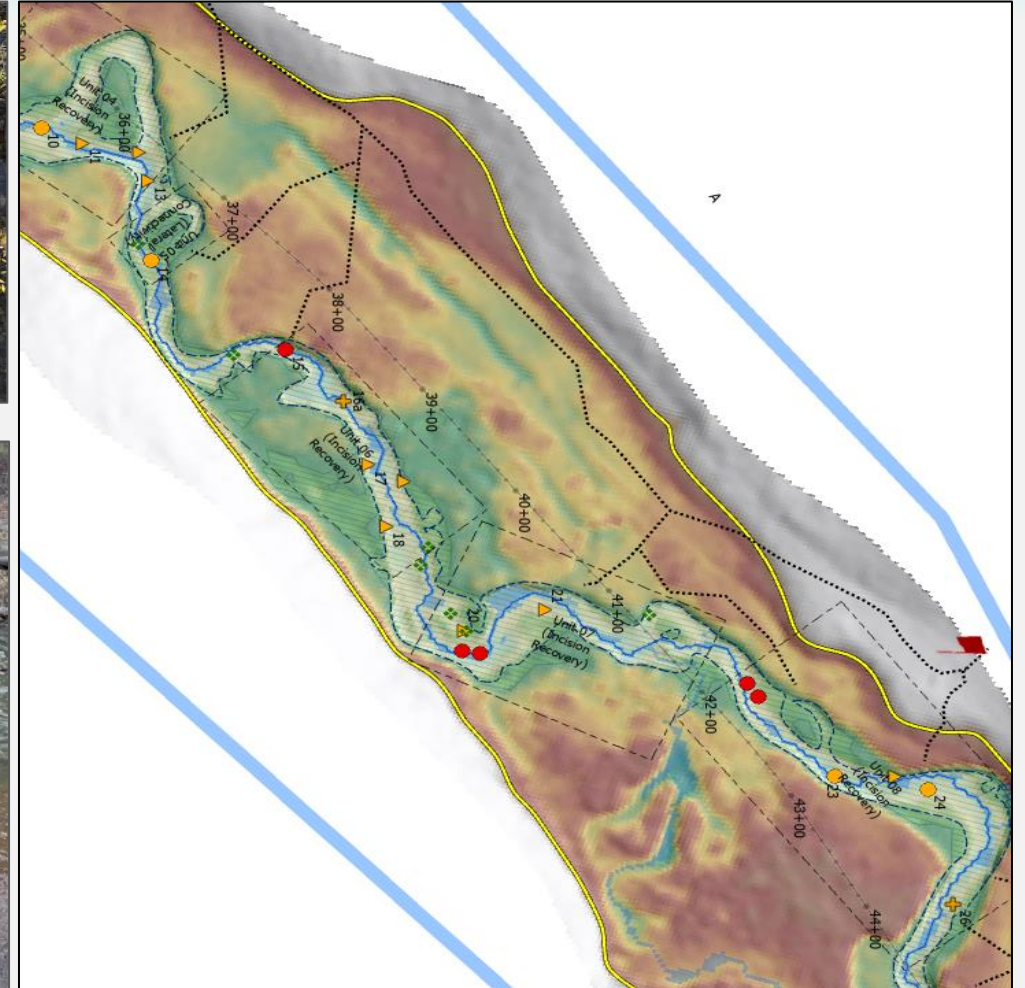
Process-based restoration design utilizing LiDAR, relative elevation modeling, and field observations.

Wood acquisition via repurposed DNR firewise thinning projects.

Monitoring of ground and instream water levels & temperature, NDVI vegetation health, transect channel geometry, and sediment size distribution.

**Mike Bosko, Project Manager**  
**Mid-Columbia Fisheries Enhancement Group**  
**Ellensburg, Washington**

[mike@midcolumbiafisheries.org](mailto:mike@midcolumbiafisheries.org)



Right, relative elevation model (REM) of a 2025 implementation project. Top left, driving posts via a hydraulic post driver. Bottom left, collecting channel transect geometry using a laser level.



# Watershed Resilience Program LTPBR on State Lands

Riparian and instream restoration project

- 8-12 structures: PALS and BDAs
- 15 acres riparian planting
- Floodplain wood loading
- Working with DNR wildfire program to pilot helicopter placement of slash

Implementation beginning summer 2026

Hannah King, Watershed Steward  
Watershed Resilience Program  
Washington State Department of Natural Resources  
[Hannah.King@DNR.wa.gov](mailto:Hannah.King@DNR.wa.gov)



Carpenter Creek, Snohomish Watershed, WA

# Deadwood Creek Low-Tech Process-Based Restoration

Aimed to increase lateral and vertical floodplain connectivity using low-tech process-based structures to attenuate peak flows and limit scour of critical Summer Chinook spawning gravels downstream.

*Project implementation involved 41 individuals from six organizations.*

Hawley Beaugrand & Jen Moss, *Fisheries and Oceans Canada*, [hawley.beaugrand@dfo-mpo.gc.ca](mailto:hawley.beaugrand@dfo-mpo.gc.ca), [jennifer.moss@dfo-mpo.gc.ca](mailto:jennifer.moss@dfo-mpo.gc.ca)

Kali Brauckmann, *Snuneymuxw First Nation*, [kalib@snuneymuxw.ca](mailto:kalib@snuneymuxw.ca)

David Beleznav, *Mosaic Forest Management*



Nanaimo River Watershed, Nanaimo, BC



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

**MOSAIC**  
FOREST MANAGEMENT

# Bismark Meadows LTPBR

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Completed in partnership with the United States Fish and Wildlife Service.

Restoration of a constrained canal system using beaver dam analogs (BDA), post-assisted log structures (PALS), and fresh cuttings of willows, cottonwood, aspen, and alder were planted at strategic locations surrounding each BDA.

Tyler Rockhill – Cramer Fish sciences  
[Tyler.Rockhill@fishsciences.net](mailto:Tyler.Rockhill@fishsciences.net)



Reeder Creek – Priest River Watershed – Nordman, Idaho

# “Grassroots” Restoration for Lake Ozette Sockeye Recovery

Since 2022, the Makah Tribe and partners have mobilized 50+ volunteers annually to clear vegetation (down to the roots!) that has encroached on critical beach spawning habitat for threatened Lake Ozette sockeye.

The project has made 968 m<sup>2</sup> of spawning beach available to date using only hand tools and sweat.

Surveys have observed sockeye using the newly available habitat the following winter after it is treated – success!

Liz Allyn, Coast Salmon Partnership,  
[liz@coastsalmonpartnership.org](mailto:liz@coastsalmonpartnership.org)

Come join us!



Lake Ozette, Clallam Bay, Washington

# Eco-Cultural Estuary Restoration

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Nature-based low-tech natural solutions to protect and restore tidal marsh habitat within Salish Sea estuaries

Tim Clermont, Executive Director, Guardians of our Salish Estuaries Society



Little Qualicum River estuary within the Qualicum National Wildlife Area, near Qualicum Beach, BC

# Jack Creek Teaway River tributary

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Using PALS, BDAs, and strategically placed wood, this project was designed to address incision, diversify habitat, promote riparian growth, and encourage beaver.

This tributary is home to:

- Rainbow, Cutthroat Trout
- Bull Trout (extirpated w reintroduction plans)
- Steelhead, Chinook, and Coho
- Lamprey

**Mike Bosko, Project Manager**  
**Mid-Columbia Fisheries Enhancement Group**  
**Ellensburg, Washington**

[mike@midcolumbiafisheries.org](mailto:mike@midcolumbiafisheries.org)



BDA-complex trapping sediment in an incised channel, spreading water onto the lower floodplain. Inset image depicts the channel pre restoration.

# Louis Creek Habitat Restoration

The goal of this project was to immediately stabilize six stream bends using woody debris and rock, before planting the riparian area with the objective of long-term stabilization of the streambanks through a restored riparian area.

Alexandras Terrick, RPBio

Simpcw Resources Group

[aterrick@simpcwresourcesgroup.com](mailto:aterrick@simpcwresourcesgroup.com)



Louis Creek, located approximately 65 km northeast of Kamloops, BC.

# Lower Taylor Creek Restoration Project

After a dock removal and realignment project, lower Taylor Creek was left without pools, riparian vegetation, or instream structures. Large boulders in the channel also acted as a fish passage barrier at low flows.

LTPBR was used to reintroduce crucial habitat for transient juvenile Chinook, Coho, and Sockeye Salmon during out-migration.

Chapin Pier – Seattle Public Utilities  
[Chapin.Pier@seattle.gov](mailto:Chapin.Pier@seattle.gov)

Nicole Farless – Cramer Fish Sciences  
[Nicole.Farless@fishsciences.net](mailto:Nicole.Farless@fishsciences.net)



Taylor Creek – Taylor Creek Watershed – Seattle, WA

# Salmon River Delta Project

Working with Switzmalph Cultural Society (Elder Louis Thomas) to restore native food, medicine, building, and ceremonial plants to this traditional area. Also restoring riparian vegetation to benefit Salmon Runs in the River. Reed Canary Grass is one huge obstacle, along with erosion, warm water, low flows ...

We are working with School District 83 Students and Staff. There are other area projects we are working on. It is all low-tech low-funding work!

Kim Fulton 250 309 6535

[kfultondr\\_fish@yahoo.ca](mailto:kfultondr_fish@yahoo.ca)



Salmon River Delta area Near Salmon Arm B.C.

Neskonlith Band Territory

# Highway 8 Reinstatement Fish and Fish Habitat Offsetting Program

Following an Atmospheric River in November 2021, the BC Ministry of Transportation and Transit completed emergency works to reinstate Hwy 8 between Merritt and Spences Bridge, BC. Habitat enhancement was completed at multiple sites as offsetting for the emergency works.

Works included construction of large woody debris jam features using excavator mounted vibratory hammer attachment, as well as riparian restoration.

Jill Carruthers, Ministry of Transportation and Transit  
[Jill.Carruthers@gov.bc.ca](mailto:Jill.Carruthers@gov.bc.ca)

Greg Sykes, Triton Environmental Consultants Ltd.  
[gsykes@triton-env.com](mailto:gsykes@triton-env.com)

Derek Gastle, Triton Environmental Consultants Ltd.  
[dgastle@triton-env.com](mailto:dgastle@triton-env.com)



Nicola River Side Channel (Fraser watershed, nearest town Spences Bridge, BC)

# Guichon Creek Restoration Using LTPBR

Installation of several beaver mimicking structures and post-assisted log structures to add structure to the creek and re-engage the floodplain. Willow stakes were planted using water jet stingers to enhance the riparian community as this watershed was affected by a large fire several years ago.

## DFO Habitat Restoration Program

Dave Pehl, *Restoration Biologist*, DFO  
[Dave.Pehl@dfo-mpo.gc.ca](mailto:Dave.Pehl@dfo-mpo.gc.ca)



Guichon Creek, Logan Lake, British Columbia



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

# Larsen Creek LTPBR

Completed in partnership with Chelan Resources, Chelan County Natural Resources Department, and Cramer Fish Sciences

Restoration of an incised stream to increase floodplain connection and resilience, reverse incision, and restore normative stream flow.

Bryan Maloney – CCNRD  
[bryan.Maloney@co.chelan.wa.us](mailto:bryan.Maloney@co.chelan.wa.us)

Zack DeLuca – Cramer Fish Sciences  
[Zack.deluca@fishsciences.net](mailto:Zack.deluca@fishsciences.net)



Larsen Creek – Peshastin Creek Watershed – Cashmere, WA

# Black Creek Low-Tech Restoration Project

A series of low-tech structures were installed in Black Creek to increase instream structure and re-engage the floodplain. Monitoring is ongoing.



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

## PARTNERS:

A-Tlegay Fisheries Society and the Farmland Advantage Program

## CONTACT:

Peter deKoning, DFO Senior Restoration Biologist

[Peter.deKoning@dfo-mpo.gc.ca](mailto:Peter.deKoning@dfo-mpo.gc.ca)



Black Creek, near Campbell River on Vancouver Island, BC

# Cummings Creek Channel Complexity Project

LTPBR was conducted within a 2-mile reach of Cummings Creek to improve and maintain spawning and rearing habitat for Snake River Steelhead.

150 PALS were built and 43 trees were felled to increase channel complexity, create pool habitat, and improve floodplain connectivity.

Elizabeth Eastman – Nez Perce  
[Elizabeth@nezperce.org](mailto:Elizabeth@nezperce.org)

Nicole Farless – Cramer Fish Sciences  
[Nicole.Farless@fishsciences.net](mailto:Nicole.Farless@fishsciences.net)



Cummings Creek – Tucannon Watershed – Dayton, WA

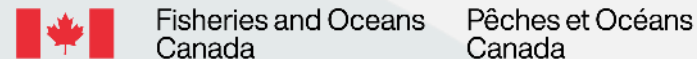
# Low-Tech Sediment Retention Structures to Support Salt Marsh Restoration

Three types of sediment retention structures were installed in the Nanaimo Estuary and Little Qualicum River Estuary to compare their effectiveness for capturing sediment in tidal marsh habitats. This project is in partnership with Snuneymuxw First Nation and with support from Guardians of Our Salish Estuaries (GoOSE).

## CONTACT:

Morgan Tidd, DFO Geomorphologist

[Morgan.tidd@dfo-mpo.gc.ca](mailto:Morgan.tidd@dfo-mpo.gc.ca)



Brushwood dam



Oyster shell bags



Combined brushwood and oyster shell bags



Nanaimo Estuary (above) and Little Qualicum River Estuary (right), Vancouver Island, BC



# CN - Stone Creek Fish Passage Restoration

Project included removal of a concrete apron that was resulting in the stream being undercut and causing a barrier to salmon migration.

In support of CN's proactive efforts to promote sustainability and biodiversity, a plan was implemented to remove the apron and construct fish passage allowing juvenile Chinook Salmon to migrate upstream, potentially unlocking 870,000 m<sup>2</sup> of fish habitat.

Kari J. Harris  
CN Railway  
Sr Manager Environmental Assessment  
[Kari.harris@cn.ca](mailto:Kari.harris@cn.ca)



Stone Creek tributary to Fraser River in Stoner, BC

# Doobah Creek Process Based Restoration, Nitinaht Lake

Ditidaht First Nation led a “Mega” PALS installation project with support from Mike Wright & Associates to address legacy impacts of historical clear-cut logging and restore river processes to bring salmon back.

Funding from the federal Aquatic Ecosystems Restoration Fund.

## CONTACT:

Paul Sieber [psieber@ditidaht.ca](mailto:psieber@ditidaht.ca)

Ryan Abbott [ryan.abbott@mcwrightonline.com](mailto:ryan.abbott@mcwrightonline.com)



Doobah Creek, Nitinaht Lake, Vancouver Island, BC

# Putting the Wiggle back in Willow Creek

This site on the lower Willow Creek was mechanically channelized and riparian forest over removed, resulting in erosion and habitat degradation. This site falls within the Minesing wetland and is a high priority reach for restoration.

Since 2010, NVCA and community volunteers have installed triangular sediment traps (wing deflectors) in an alternating pattern along the banks to narrow the stream and create meanders. This has resulted in improvements to fish diversity and water quality. Thanks, in part, to improved habitat complexity, the number of fish species has doubled.

## Shannon Stephens, MSC

Healthy Water Program Coordinator

Nottawasaga Valley Conservation Authority  
(NVCA)

T 705-812-4781

[sstephens@nvca.on.ca](mailto:sstephens@nvca.on.ca) | [nvca.on.ca](http://nvca.on.ca)



Project Monitoring		
Willow Creek at George Johnston Road	2010 Early - project	2014 Late - project
Fish Species	7	14
Aquatic Bug Species	11	21
Water Quality Interpretation	Poor	Fair

Willow Creek, Minesing Wetlands, Ontario Canada

# Bon Accord Creek- FlexiBaffle Retrofit for Fish Passage

SSA Environmental partnered with the City of Surrey, B.C. to install 62 FlexiBaffles along a 150-meter concrete flume on Bon Accord Creek successfully returning Coho salmon to over 2.5 km of upstream habitat for the first time in 70 years.

Shane Scott – Owner and Sr. Biologist

SSA Environmental

[shane@ssaenv.com](mailto:shane@ssaenv.com)



Bon Accord Creek, Surrey, B.C.

# toq<sup>w</sup>anən Salmon Restoration Project

Installation of beaver mimicking structures in side channels of the mainstem toq<sup>w</sup>anən to alleviate drought conditions in early summer and hold water in the floodplain longer into the dry season.

Sydni Long, *Fisheries Manager*, ƛaʔamun Nation  
[sydni.long@tn-bc.ca](mailto:sydni.long@tn-bc.ca)

Dave West, *Watershed Engineer*, Trinity Consultants Canada  
[dwest@ecofishresearch.com](mailto:dwest@ecofishresearch.com)

Jennifer Moss, *Restoration Biologist*, DFO  
[Jen.Moss@dfo-mpo.gc.ca](mailto:Jen.Moss@dfo-mpo.gc.ca)



toq<sup>w</sup>anən watershed, qathet, British Columbia

# Curley Creek LTPBR

Completed in partnership with the United States Fish and Wildlife Service.

Restoration of a constrained ditch using beaver dam analogs (BDA) and fresh cuttings of willows, cottonwood, and aspen were planted at strategic locations surrounding each BDA.

Tyler Rockhill – Cramer Fish sciences  
[Tyler.Rockhill@fishsciences.net](mailto:Tyler.Rockhill@fishsciences.net)



Curley Creek – Kootenai River Watershed – Moyie Springs, Idaho

# Fishtrap Channel Restoration & Maintenance

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In August 2025, Seabird Island Band, Fisheries & Oceans Canada, and Stqó:ya Construction worked to complete the works on Phase 2 of the Fishtrap spawning channel to benefit our population of endangered Chinook salmon (DU 6 as per COSEWIC). Rock weirs and woody debris will retain more water throughout the warmest months of the year and provide cover to juveniles after they emerge.

Jillian Stewart-Szpak, RPBio  
Acting Team Lead of Natural Resources &  
Referrals

[jillian.stewart@seabirdisland.ca](mailto:jillian.stewart@seabirdisland.ca)

778-684-1574



Spawning channel known as Fishtrap in Sqémelech (Maria Slough), Chaplin Road, Agassiz, British Columbia. Lhílheqey (Mt Cheam) can be seen in the background.

# Newbury riffle built in Okanagan River

- Riffles and pools are natural features that restores channel geometry,
- adds fish habitat diversity, replacing channelized reaches,
- alter bed slope to reduce bed erosion, and
- create spawning areas.

Karilyn Alex

Okanagan Nation Alliance



Okanagan River, BC

# Muchalat Lake Spawning Gravel Placement and Low Flow Augmentation Restoration Project

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## Spawning Gravel Placement

High-quality habitat for COSEWIC  
Threatened Chinook Salmon, free of  
fines and stable for 20+ years.

Estimated Production: 2,000–4,000 adult  
salmon, including 1,000–2,000 Chinook.

**Kent O'Neill**

**Nootka Sound Watershed Society**

[kent@thelodgeatgoldriver.ca](mailto:kent@thelodgeatgoldriver.ca)



Located at the outlet of Muchalat Lake in the Gold River Watershed. The project is 27km from the Village of Gold River on the West Coast of Vancouver Island, BC

# Fourmile / WSU Riparian Buffer & Bio-Engineer

15.8 acre / 10,088 streambank feet  
riparian buffer & bio-engineer project on  
WSU Hudson Biological Reserve. ~20  
BDAs, ~50ft bank protection

Drew Schuldt

[drews@palousecd.org](mailto:drews@palousecd.org)

509-553-1853

Palouse Conservation District



Pullman, WA – Fourmile Creek - Lower Fourmile Creek Watershed 170601080208 –  
WRIA 34

## Langley Environmental Partners Society (BC)

- Stewarding 800-km of salmon bearing streams since 1993
- Restoring riparian areas on agricultural land
- Partnering with local watershed groups for plant installations
- Install of livestock exclusion fences
- Use of lifestakes (willow and red osier dogwood) and potted plants to enhance stream banks



@LEPSlangley

Deciduous trees (mostly alder, vine maple and birch) need caging to protect them from beaver damage

# Camas Meadow LTPBR

Completed in partnership with Washington Department of Natural Resources, Chelan County Natural Resources Department, and Cramer Fish Sciences

Restoration of an incised meadow using a variety of LTPBR techniques including novel use of inoculated coir logs to create persistent ponding within the meadow with native vegetation seeded into coir logs.

Bryan Maloney – CCNRD  
[bryan.Maloney@co.chelan.wa.us](mailto:bryan.Maloney@co.chelan.wa.us)

Keyna Bugner – WADNR  
[keyna.bugner@dnr.wa.gov](mailto:keyna.bugner@dnr.wa.gov)

Zack DeLuca – Cramer Fish Sciences  
[Zack.deluca@fishsciences.net](mailto:Zack.deluca@fishsciences.net)



Camas Meadows – Peshastin Creek Watershed – Cashmere, WA

# Deerhorn Creek Restoration

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This low-tech project between the U.S. Forest Service and Trout Unlimited complemented excavator work by building salmonid habitat and increasing the water table in locations with sensitive wetlands or cultural sites.

Becky Long

Confederated Tribes of the Warm Springs

(previously USFS)

[becky.long@ctwsbnr.org](mailto:becky.long@ctwsbnr.org)



Deerhorn Creek, tributary to the Middle Fork John Day River near Bates, OR

# Jesse HQ Floodplain Enhancement Project

The **Jesse HQ Floodplain Restoration Project** used wood from a nearby forest health thinning operation to install **350+ log structures** and felled trees across the Fern Creek wetlands and floodplain, improving floodplain connectivity through low-tech restoration.

This project was sponsored by the **Tualatin Soil and Water Conservation District**

Becca Miller, PE

[Bmiller@geoengineers.com](mailto:Bmiller@geoengineers.com)



Fern Creek, a tributary to the Tualatin River in Washington County, Oregon.



PACIFIC SALMON  
FOUNDATION



**EARLY BIRD REGISTRATION  
AVAILABLE UNTIL MARCH 31**

OCTOBER 15 & 16, 2026  
VANCOUVER CONVENTION CENTRE

# Eagle Creek Restoration

Noxious Weed removal, replanting native buffer and installing in-stream structures to restore Eagle Creek

Alex Harwell

Cascadia Conservation District

[alexh@cascadiacd.org](mailto:alexh@cascadiacd.org)



Wenatchee Watershed, Leavenworth WA

# Motupipi – Fish Paradise

Transforming a degraded, willow-dominated spring-fed stream into a dynamic, meandering waterway rich in native fish habitat – using large woody debris to focus flows, create undercut banks, generate extensive backwater and wetland habitat, complimented by native planting to provide future wood inputs and long-term geomorphic complexity.

Heath Melville

Tasman District Council

Heath.Melville@tasman.govt.nz



Motupipi River, Takaka. Tasman District, New Zealand

# Tilbury Process-Based Marsh Establishment Pilot Project (ProMEPP)

Ducks Unlimited Canada and the University of British Columbia are conducting an innovative, experimental pilot project to work with and accelerate estuarine processes to create tidal marsh in the heavily modified Fraser Estuary. Construction of 350 linear metres of timber pile walls and a brushwood dam is anticipated to slow water, promote sediment accretion, and enable the establishment of tidal marsh vegetation over time.

Eric Balke  
Ducks Unlimited Canada  
e\_balke@ducks.ca

Daniel Stewart  
University of British Columbia  
daniel.stewart@asaru.org



Tilbury Island foreshore, Fraser River Estuary, Delta, British Columbia

# Boquet River, NY Beaver Brook LTPBR Workshop

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The Boquet River Association hosted a workshop for conservation professionals and permitting agencies to demonstrate LTPBR techniques (Post Assisted Log structures and Strategic Wood Addition). The first LTPBR efforts in the Adirondack Park.

Colin Powers

[colin@boquet-river.org](mailto:colin@boquet-river.org)



Beaver Brook subwatershed of the Boquet River, Westport/Essex, NY

# Horse Heaven BeaverHoods

Utilizing volunteers and a grant from the Oregon Watershed Enhancement Board, the council and Western Beavers Cooperative implemented this BDA project in 2023, installing 27 structures over a combined stream length of ½ mile.

Chris Gannon

Director

Crooked River Watershed Council

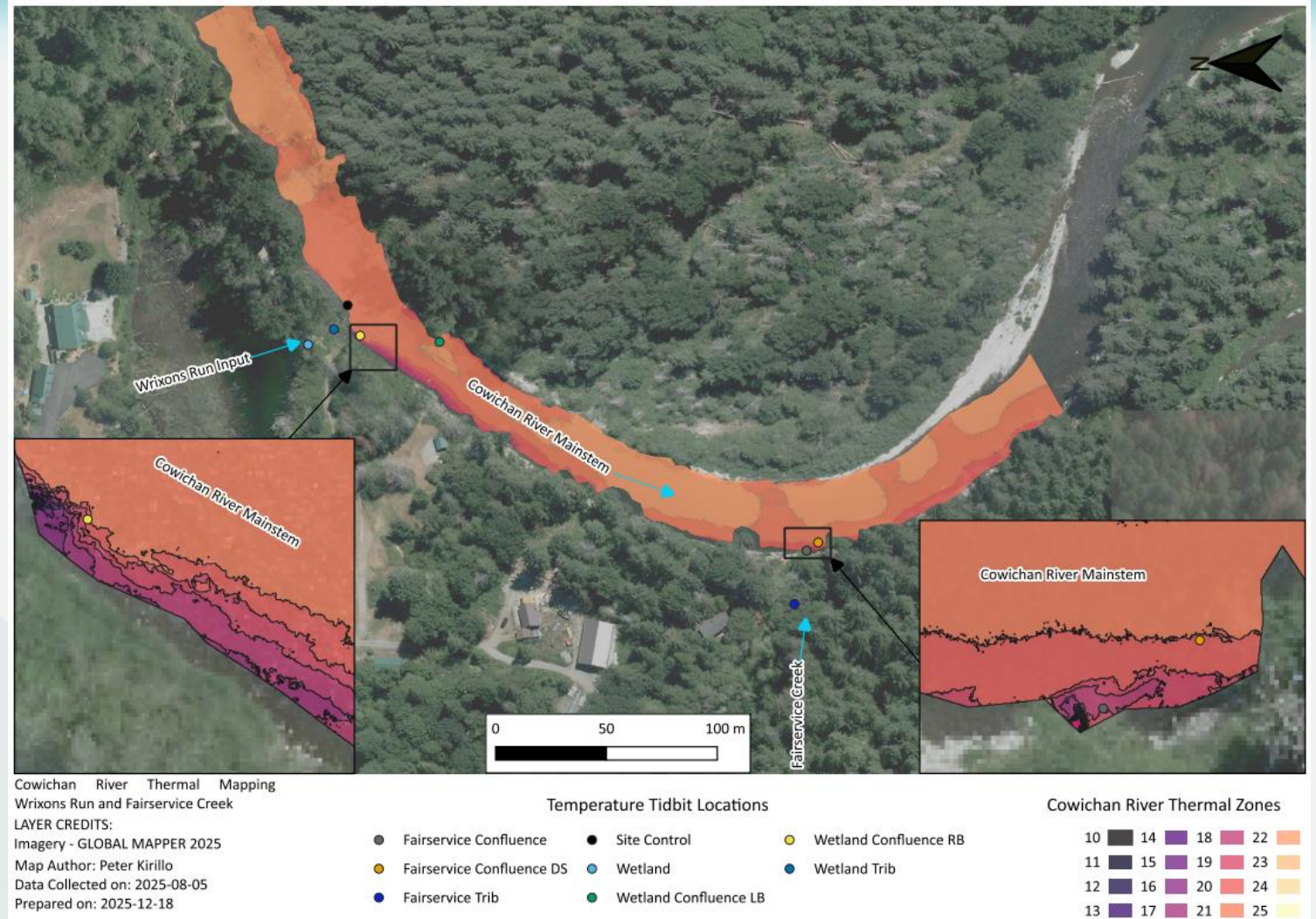
[chris@crwc.info](mailto:chris@crwc.info)



Horse Heaven Creek near Post, Oregon, the geographic center of the state. This creek is a tributary to the Crooked River above Prineville Reservoir.

# Characterizing Cold Water Thermal Refugia in the Cowichan River

Exploring three methods for characterizing thermal refugia: drone-based thermal imaging, logger networks, and spatially referenced temperature profiling through the water column using an RTK.



Cowichan River, Duncan, British Columbia

Jennifer Moss, *Restoration Biologist, DFO*  
[Jennifer.Moss@dfm-mpo.gc.ca](mailto:Jennifer.Moss@dfm-mpo.gc.ca)

Tim Kulchyski, *Natural Resource Consultant,*  
 Cowichan Tribes

Tom Rutherford, *Strategic Priorities Director,*  
 Cowichan Watershed Board

# Cultus Lake Green Shores<sup>R</sup> for Shoreline Development

- Initiated by the Cultus Lake Stewardship Society and managed by the Stewardship Centre for BC (SCBC), in partnership with the Cultus Lake Park Board.
- Funded by Fisheries and Oceans Canada, BC Salmon Innovation and Restoration Fund, Cultus Lake Park Board (CLPB), and the Cultus Lake Stewardship Society (CLSS).
- Low-tech shoreline restoration to halt erosion and improve shoreline habitat for endangered Cultus Lake Sockeye salmon.
- Remove impervious structures, regrade shoreline, add beach nourishment, introduce LWD and boulders, plant riparian vegetation.
- Will become a shaded parklike setting with restored shoreline processes and shared use between wildlife and public.



Arsenault Environmental Consulting Ltd.  
1059 Marathon Court, West Kelowna, BC V1Z 3H9  
(250) 300-9206; darryl.arsenault@gmail.com

Cultus Lake is located approximately 11 kilometers south of the Chilliwack River and around 80 kilometers east of Vancouver, nestled in the Fraser Valley of British Columbia.

# Panther Creek – Upper Salmon River Basin

- Irrigation water right acquisition & instream water rental – Idaho Water Resource Board
- Private to Public Land Transfer – Salmon-Challis National Forest
- BDA Project – Shoshone Bannock Tribes
- Natural beaver recruitment in project reach

John Loffredo – Program Manager, Idaho Water Transactions Program, Idaho Water Resource Board.

John.Loffredo@idwr.idaho.gov



Panther Creek, Upper Salmon River Basin, Idaho, USA

## 22-1343 R Morganroth Springs Fish Passage Restoration

Morganroth Springs was an abandoned WDFW SSHEAR Site that PCSC restored via LT-PBR techniques on Olympic National Forest property. Installation of 3 BDA's, 3 Bank Attached Wetland systems, 150ft Side Channel, and ~50 stems downed along 1.5 miles of stream for additional LWD.

Joshua Espada, CERPIT

Pacific Coast Salmon Coalition

Josh@pacificsalmon.org



Bogachiel Rain Forest River Trail, Bogachiel Watershed, Jefferson County, WA

# Asotin Creek Fish Habitat Restoration

Asotin County Conservation District

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Goal: increase instream habitat complexity

Focus: Snake River steelhead

1.2 miles long of restoration

>70 LWM structures

>500 habitat boulders

3 side channels

75-ft long cattle crossing bridge

Katrina Hyman-Rabeler, PE

GeoEngineers

krabeler@geoengineers.com



Snake River Watershed, Asotin County, WA

# Upper Quinault River Floodplain Forest Restoration Quinault Indian Nation

Goal—to restore floodplain conifers and the **floodplain large wood cycle**.

Method: Silvicultural conversion of red alder dominated floodplain forest to a mixed red alder conifer floodplain forest.

Contact Information:

Kevin Fetherston [kevin@naturaldes.com](mailto:kevin@naturaldes.com)

Bob Keller [bob@naturaldes.com](mailto:bob@naturaldes.com)

Natural Systems Design

Seattle, Bellingham, Port Angeles, Washington

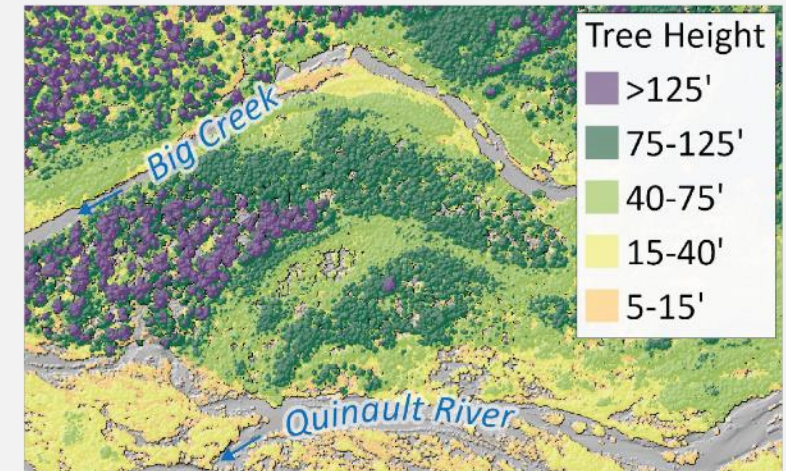
2006 Pre-treatment



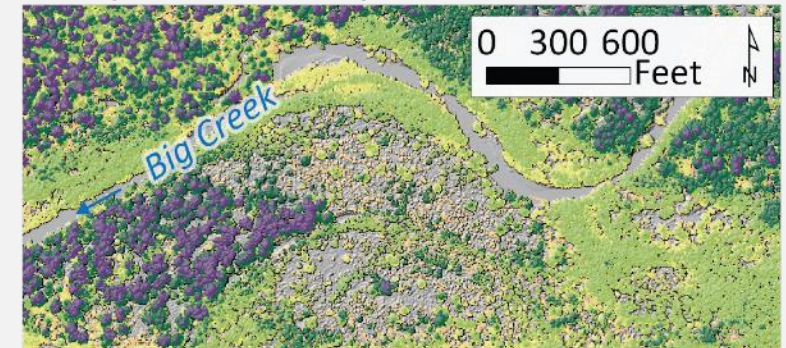
2023 Post Silvicultural Treatments



2014 (Pre-Treatment)



2023 (Post-Treatment)



Project Location: Upper Quinault River, Quinault, Washington

# Soldotna Creek Tributary BDA Project

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Wetland violation on private lands resulted in an opportunity to pilot a series of BDA's and restore salmon rearing habitat.

Kyle Graham

USFWS

[Kyle\\_graham@fws.gov](mailto:Kyle_graham@fws.gov)



Located near Soldotna, Alaska. Project located on a tributary stream to the Kenai River.

# Weber Riparian Buffer & Bio-Engineer

~12 acre & 6700 streambank ft riparian buffer & bio-engineer project. 3 BDAs and ~900 ft bank protection.

Drew Schuldt

[drews@palousecd.org](mailto:drews@palousecd.org)

509-553-1853

Palouse Conservation District



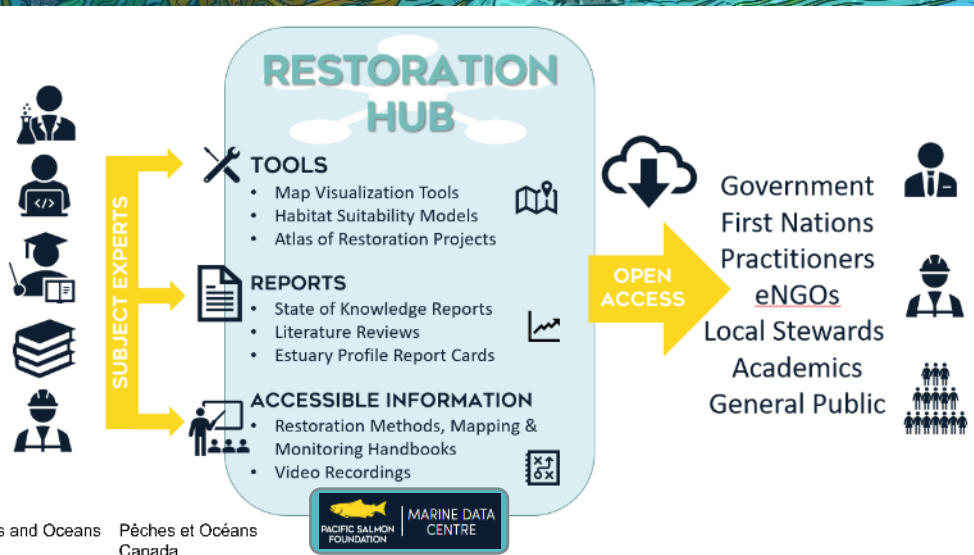
South Fork Palouse River – Middle South Fork Palouse River Watershed 170601080205 & Lower Fourmile Creek Watershed 170601080208 – WRIA 34

# Greening the Salish Sea: Decision Support Tools for Successful Pacific Salmon Habitat Recovery

The success of nearshore restoration projects may be hampered by a lack of knowledge on optimal site selection, a lack of collated and open-access information on the efficacy of methodologies available and appropriate approaches under worsening climate change scenarios, and a lack of guidance on priority areas for restoration.

With funding under DFO's Aquatic Ecosystem Research Fund, PSF's Marine Science Program is creating a Restoration Resource Hub of open-access informative resources and decision-support tools to guide and help co-ordinate adaptive nearshore habitat restoration approaches and strategies.

Key products include State of Knowledge and practitioner guidebooks for kelp, salt marsh, and eelgrass, habitat suitability maps and more to foster better informed restoration.



**First products are now available:**



Nicole Christiansen, Project Manager  
Pacific Salmon Foundation  
nchristiansen@psf.ca



Fisheries and Oceans Canada  
Pêches et Océans Canada



# Eagle Creek Floodplain Restoration

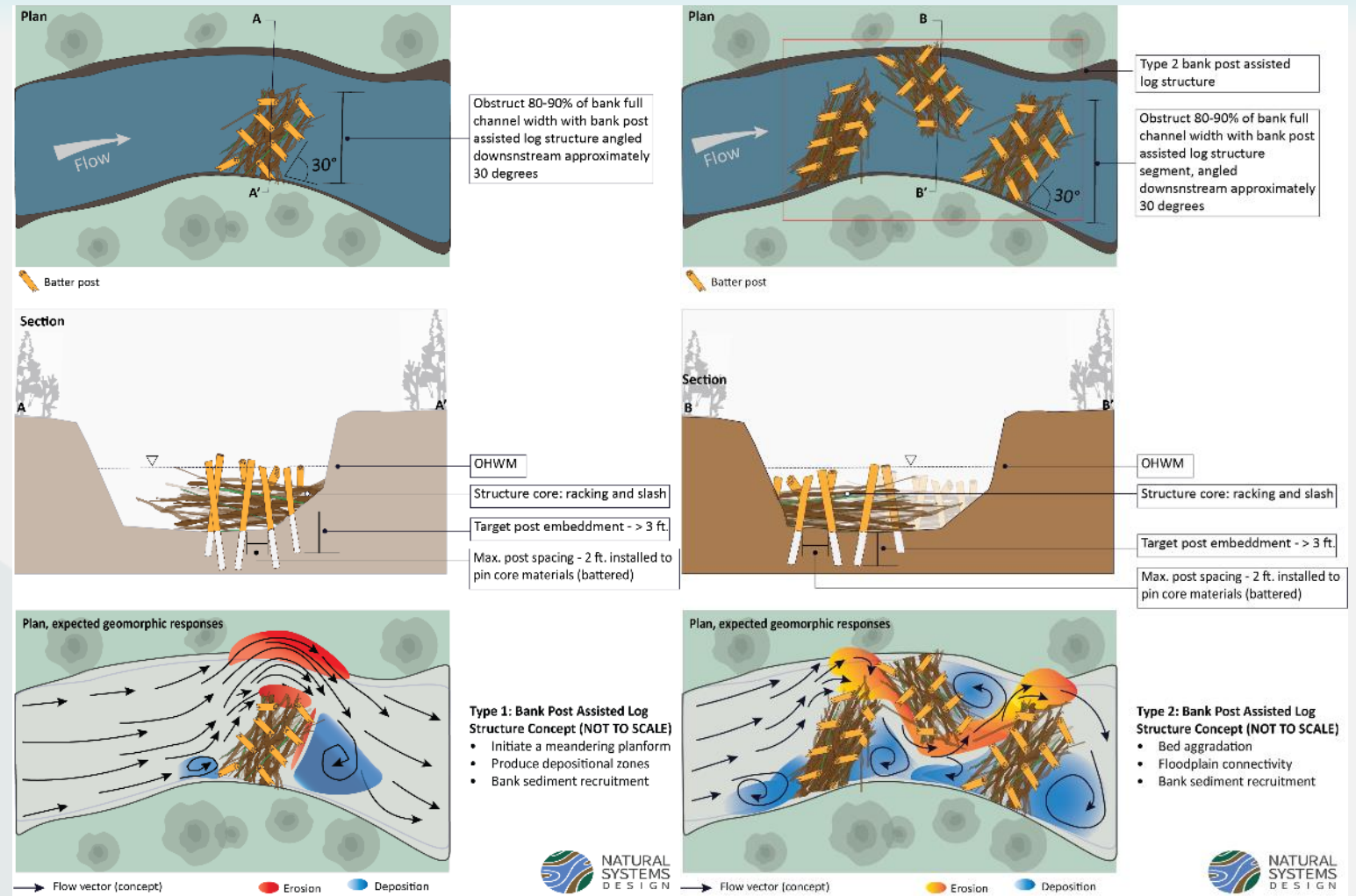
Project design is currently under development for our client- Chelan County Natural Resources. Project goals include slowing flows and promoting bed aggradation in incised reaches of Eagle Creek, while ensuring unimpeded fish passage. Additional goals include riparian enhancement, groundwater storage, and enhancement of ESA-listed steelhead habitat.

Ryan DeKnicker

Consulting Scientist

[ryan@naturaldes.com](mailto:ryan@naturaldes.com)

[Natural Systems Design](http://Natural Systems Design)



Chumstick Watershed | Leavenworth, WA

# Reds Meadow Valley Restoration Project

John Muir Wilderness Trail Conservancy

The enhancement of two meadow systems and the adjacent riparian corridor of the Middle Fork San Joaquin River, within the Inyo National Forest, California.

To minimize impacts to existing habitats and sensitive species, a LTPBR design approach is being developed to restore and enhance the ecological function of the meadows and riparian system.

**Nick Southall, Senior Geomorphologist**

[nick.southall@wra-ca.com](mailto:nick.southall@wra-ca.com)



<https://wra-ca.com/>



Reds Meadow Valley, Middle Fork San Joaquin River, Mammoth Lakes, California

# BLM Upper Salmon River Landscape

The BLM Challis & Salmon Field Offices in partnership with TNC have been busy implementing LTPBR projects throughout the Upper Salmon River basin. With ~4 miles already installed, we plan to install an additional 10+ miles over the next 3 years.

Hannah Branz  
Natural Resource Specialist  
Bureau of Land Management Idaho  
Challis & Salmon Field Offices  
hbranz@blm.gov



BLM lands situated in the Upper Salmon River Watershed in central Idaho.



**Adopt-a-Downspout creates cleaner waterways for healthier salmon.** In order to properly drain rainwater and create safe driving conditions, bridges have vertical pipes that function like downspouts from a house's roof gutters. The Adopt-a-Downspout (AAD) program installs aboveground stormwater biofiltration planter boxes at the bottom of the downspout.

Each box, also referred to as a **Box of Rain**, filters pollutants from the runoff before it flows into storm sewers or the water below, functioning much like a natural forest to filter rainwater. This filtering process significantly removes pollutants including 6PPDQ from the runoff resulting in cleaner waterways for all.

# Rose Creek/WSU Riparian Buffer & Bio- Engineer

9.03 acre / 3,622 streambank feet  
riparian buffer & bio-engineer project  
on WSU Hudson Biological Reserve. ~200  
feet bank protection, ~10-12 BDAs, 4  
PALS

Drew Schuldt

[drews@palousecd.org](mailto:drews@palousecd.org)

509-553-1853

Palouse Conservation District



Pullman, WA – Rose Creek - Lower Fourmile Creek Watershed 170601080208 – WRIA  
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# Eyes on the River Tsolum River, BC

A dedicated group of volunteers is working to improve habitat for salmon in the Tsolum River. Extreme low-flow and warm-water conditions each summer result in high salmon mortality. Work includes monitoring to identify “thermal sanctuaries”, educating recreational groups, fish translocations, and regular fish surveys.

Allan Chamberlain and Stuart Carwithen

Tsolum River Restoration Society’s ‘Eyes on the River’ program

[stuart.bluerim@gmail.com](mailto:stuart.bluerim@gmail.com)



Tsolum River Watershed, Vancouver Island, BC

# Wasson Creek Watershed Restoration

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From ridgetop-to-estuary this restoration project restores degraded lands to stage zero wetland-stream complex using Geomorphic Grade Line (GGL) methods and beaver dam analogs (BDA).

Alice Yeates

South Slough National Estuarine Research Reserve; Oregon Department of State Lands

[Alice.yeates@dsl.Oregon.gov](mailto:Alice.yeates@dsl.Oregon.gov)



South Slough watershed in the Coos Watershed; Charleston, Oregon