

ENTIAT WATERSHED

Vol. III, 2013

ANNUAL REPORT

INSIDE

- 2 Summary Letter
- 3 Featured Landowner
- 4 Economic Benefits
- 5 Watershed Context
- 6 Hatchery Update
- 7 Species Spotlight
- 8 Featured Projects
- 10 Monitoring
- 11 Data Summary
- 12 Future Efforts
- 13 Regional Context
- 15 Resources



CASCADIA
CONSERVATION DISTRICT

FISHING THE ENTIAT

"With continued habitat work and favorable ocean conditions we expect fishing opportunities in the Entiat will only improve." ~ Bob Whitehall, landowner and fisherman

The smell of fresh caught trout sizzling in a pan, the sound of water rushing by the campsite, birdsong, all of these can be enjoyed far upstream on the Entiat River. Dip a pole into the river above Entiat Falls and a bonanza of trout can be found. Not only can they be found, but caught and kept as well. In fact, the Washington Department of Fish and Wildlife (WDFW) has upped the daily limit for the non-native brook trout to 10 per day and are encouraging anglers to keep their daily limit rather than catch and release.



By increasing daily limits and encouraging people to keep their maximum allowance, WDFW is hoping that the native West Slope cutthroat trout they've been stocking since 2009 will have less competition and a better chance to re-establish native runs.

Should an angler be looking for something with a little more substance, limited salmon and steelhead seasons have opened on the lower river from the Hwy 97A Bridge to 800' below the Entiat National Fish Hatchery, for at least a portion of the last five years.

"In 2011-12 an estimated 498 anglers fished 1,372 hours and caught a total of 218 steelhead, of which 66 were adipose absent, 92 were adipose present hatchery, and 60 were natural origin," provided Mike Tonseth, Washington Department of Fish & Wildlife. (See page 4 for more detail regarding the economic benefits of these numbers)

Many agencies and individuals have been working tirelessly to restore fishing to the Entiat River. As salmon populations increase and once again become sustainable, it may result in more opportunities to fish.



Dear Reader,

The Cascadia Conservation District, on behalf of the Entiat Watershed Planning Unit (EWPU), is proud to provide you with the 2012 Entiat Watershed Annual Report. This report touches on topics ranging from the spring Chinook salmon fishing season in the lower Entiat River to habitat restoration efforts that have recently taken place in the upper river. It includes just a few of the most recent projects in a long-term effort to address the water quantity, water quality and habitat issues in the watershed.

In addition to information on local items of interest, the report includes data about the economic benefits of restoration projects, the role of the fish hatchery in those efforts, general fish population trends in the river, and a regional perspective of how these local efforts are complemented by others in nearby watersheds. A tremendous amount of work has been accomplished and coordinated with partners doing similar work in adjacent watersheds. These achievements are due in large part to the grass roots support of local landowners and agency representatives working toward common goals: Improving and restoring fish habitat, and maintaining water supply for people and fish in the Entiat River as well as other local watersheds. This grass roots effort first began nearly 20 years ago and continues to be a successful model for other parts of Washington State. Extensive monitoring is in place to track the results of this hard work.

I encourage you, as you read this report and become familiar with what is happening in our area, to consider joining your neighbors and become actively involved in this or other conservation efforts. It is only through the extensive support and participation of many landowners and partners that this work can be accomplished. We hope this Annual Report will increase your awareness of the effort and inspire you to join the growing group of landowner partners.

On behalf of the Conservation District, I feel a deep sense of obligation to ensure that landowner rights and wishes are included in the planning and completion of work to fulfill the various plans that have been developed, also with landowner involvement. These plans do not sit on a shelf collecting dust, but serve as a road map for restoration efforts that reflect the direction of local landowners and stakeholders.

This last year marked the fifth year of continuing support provided by the Bonneville Environmental Foundation to produce this report, helping to ensure landowners and other stakeholders are involved in the restoration planning, project implementation and feedback loop. We want to provide information on the work we are conducting as well as to seek feedback from you. We'd like to hear your thoughts in order to help direct future efforts. Through this partnership we will also continue to use additional methods of providing updates on the accomplishments of the Entiat Watershed Planning Unit and partners.

Please contact me to learn more about the process and how you can be involved, or if you have any comments, concerns or questions.

Respectfully,

A handwritten signature in black ink that reads "Mike".

Michael J. Rickel,
Program Manager
Cascadia Conservation District



Conard Petersen

Born and raised in the Entiat valley, Conard Petersen has committed almost 80 years of hard work and dedication to the area. Conard’s paternal grandparents settled in the Entiat in 1919 and his maternal grandparents in 1929, so he has a rich family history in the valley. Conard is a former apple and pear orchardist and also spent 30 years in the logging industry. It was during his logging days that he became fascinated with wildlife and plant life in the Entiat. He began buying books on taxonomy and spending any free time he had in the woods researching. Conard is also an avid stamp collector, member of the American Revenue Association, and a former mountain climber.

Getting involved in the Entiat community is important to Conard. He is a member of the Entiat Friends Church, member of the Knapp Wham irrigation district, active member of the Entiat Watershed Planning Unit (EWPU), and chaired the Cascadia Conservation District Board of Supervisors for nine years, where he still serves as an Associate Member. Conard got involved in the watershed planning effort to help find a more practical approach to saving our natural resources. He explained that in the 1960’s the abundance of environmental laws being passed put the Entiat locals and government officials at odds.

“In the ‘60’s if someone from the government came out to the Entiat they better bring backup,” said Conard.

He recalled that the last straw was when residents began losing their water rights due to the new Water Rights Validation being passed.

“About half a dozen of us said ‘that’s enough!’ and decided we were going to have to do something about all this,” explained Conard.

That small group went to the Entiat Chamber to see what they needed to do to get the ball rolling. They began working with the Chelan County Conservation District (now Cascadia Conservation District) to develop a watershed plan as required by the government. At first many of their ideas for the plan were shot down, but eventually they were able to come up with something both sides could live with. Conard noted that he is grateful they were able to make it this far without much conflict.

“It was definitely stormy at first, but when we realized we had to work together both sides backed off some and we finally started getting things accomplished,” explained Conard.

The EWPU has taken that plan and refined it. The group is confident in the plan and hopeful about the results that will come from it.

“I’m getting older and hope to leave something valuable behind when I go. We need to do what we can to protect resources, but in a practical way,” said Conard.

According to Conard, some important things to keep in mind for future efforts include: having an end product in mind, setting more goals, and working toward completing one goal at a time. He also suggested that we need better education of the general public on restoration efforts, especially for new landowners who don’t know anything about the history of the valley.

“People see Entiat as an idyllic, pastoral, pristine, laid back environment, but we have real world problems here too. We can’t get away from the laws and realities that everyone else faces,” explained Conard. “We need to be willing to protect natural resources so they can be used for the good of all mankind.”

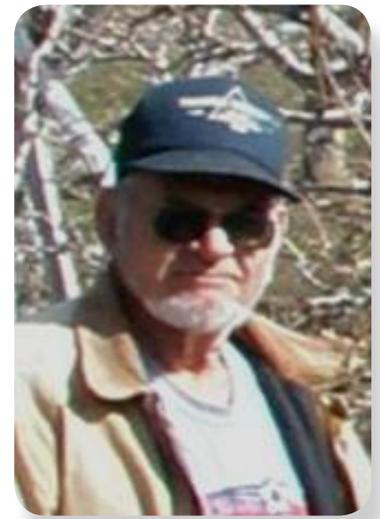


Photo by Cascadia Conservation District

“I’m getting older and hope to leave something valuable behind when I go. We need to do what we can to protect resources, but in a practical way.”

Economic Benefits Of Restoration



Habitat Restoration

Over the past decade more than \$3.7 million have been spent on fish habitat restoration projects in the Entiat watershed. Based on a study done by the University of Oregon in 2010, this has likely resulted in 58 jobs and \$8.4 million in economic activity in the area. This represents a significant return on the investments made to improve fish habitat. These benefits are the result of supporting and hiring local contractors and agencies to design, engineer, and build restoration projects. This also includes the sale of materials, equipment, and other services needed to construct projects. For example, with an instream wood project, an environmental consultant and design firm will be paid to engineer the project, loggers and equipment operators will be contracted with to gather and place large woody material, and a planting crew will be hired to revegetate the stream bank and remove invasive weeds. The project may also require the purchase of nursery plants, building materials, landscaping supplies, equipment rental for specialized equipment, repair and maintenance services for tools and equipment, and fuel for travel to the work site and equipment operation.

The 2012 restoration investment in the Entiat was even greater than in the past and although the final amounts are not yet available, the economic impacts were likely significant. These types of benefits to local economies are especially important in rural communities like the Entiat, which have suffered from the loss of other natural resource investments such as timber harvest.

Local economic benefits can also result when people who are employed by or benefit from the projects spend their incomes on goods and services in the local area.

Olin Excavation, referring to an American Recovery & Reinvestment Act (ARRA) funded, \$80,000 piping contract to connect four irrigation wells to the existing irrigation system on a 40-acre lower Entiat River pear orchard in 2011, had this comment:

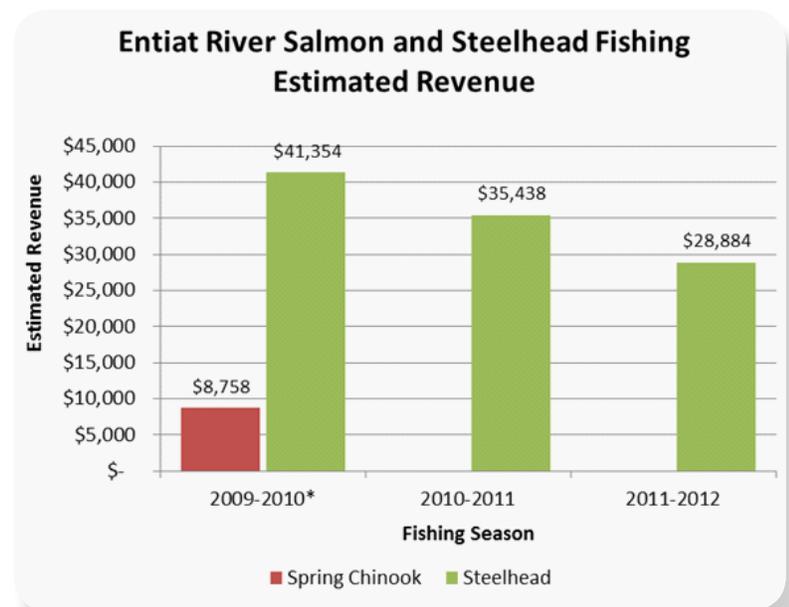
“This was one of two publicly funded jobs in 2011 that allowed us to grow our business by building capital and acquiring new equipment. This laid the groundwork for bidding on larger jobs and potentially hiring employees from the local community. We also hired several small local subcontractors, helping to sustain their businesses.”

Across the Upper Columbia a total of \$34 million have been spent, resulting in 526 jobs and over \$77 million in economic activity.

Fishing

“The dollars generated by fishermen to this area are a huge boost to our sustainability,” says Bob Whitehall, avid fisherman and local landowner, **“The Entiat community has invested a lot of time and energy working toward solutions to local watershed management issues and Entiat businesses could greatly benefit from the impact of a fall and winter steelhead season, which has really helped the Methow River communities.”**

Although exact dollar amounts are hard to determine, the graph to the right provides an estimation of how much money is generated by fishing. Additional seasons have the potential to significantly increase the benefits.



Estimated local revenue generated by Chinook salmon fisheries from 2009 to 2012. Information based on Washington Dept. of Fish and Wildlife data.



Fire in the Entiat

There are a number of simple things landowners can do to reduce the vulnerability of their home and landscape to wildfire. The following are areas where landowner can take action to reduce risks from fire:

- Reducing flammable materials from around the home and outbuildings creates a defensible space and reduces the chances they will be ignited by a wildfire. A 30-200 foot buffer is recommended depending on the steepness of slope and dominant vegetation types.
- Manage vegetative fuels in defensible spaces by removing diseased, dead, and downed trees and brush; remove tree limbs within 12'-15' of the ground; break up continuous, dense vegetation; and keep dead leaves, pine needles and other debris raked.



Before



After

- Use Class A roofing materials such as metal, tile, and asphalt composite which are able to withstand the most severe exposure to heat, flames and firebrands.
- Make sure firefighters and other emergency responders can find and safely access your property.
- Ideally, your driveway should be clearly marked, wide enough for two vehicles to safely pass and include an area to turn around.



Photo by Mike Cushman

Create a Disaster Plan

- Keep detailed lists and photos of your property and belongings to file with an insurance claim should you need to. Keep copies somewhere other than your home.
- Keep all valuables in a safe and waterproof place.
- Purchase insurance that covers flood damage.
- Assemble a disaster kit containing first aid supplies, flashlights and extra batteries, enough food and water for 72 hours and any necessary medications.
- Have your family make an emergency evacuation plan that everyone understands and that you practice occasionally.

Be prepared and reduce your risk of fire damage!



Entiat National Fish Hatchery Update



Photo by Cascadia Conservation District
Entiat River Appreciation Day, August 2011

The Entiat National Fish Hatchery (ENFH) is located 6 miles up the Entiat River and is part of a mitigation program for the Grand Coulee Dam built on the Columbia River in the 1930s. Construction of the dam blocked salmon migration to 1,140 miles of the upper Columbia River. Funded by the Bureau of Reclamation (BOR) and managed by the U.S. Fish & Wildlife Service (USFWS), the hatchery is currently one of three in the Leavenworth Fisheries Complex. Salmon production at the hatchery began in 1941.

During 2012, the hatchery released over 170,000 summer Chinook salmon smolts. This was the second year that smolts from the new summer Chinook program were released. Most adult summer Chinook are expected to return to the Entiat River starting in the summer of 2014. Eventually up to 400,000 smolts will be reared and released each year.

Prior to their summer Chinook program, the hatchery reared and released spring Chinook salmon, however, in 2005 the federal agency responsible for salmon recovery and a hatchery review team found that the Entiat NFH spring Chinook salmon posed an unnecessary risk to the native spring Chinook stocks. At the same time, this hatchery stock provided little benefit to sport fishing anglers in the local Entiat River area. To eliminate the risk to listed spring Chinook salmon stocks, the Entiat NFH spring Chinook salmon program was phased out.

The primary goal of the summer Chinook program is to provide more fish for ocean and Columbia River mainstem fisheries. Assuming enough fish return in the coming years, there is potential for a localized fishery on hatchery summer Chinook adults in the lower Entiat River.

Other activities hosted or sponsored by the hatchery include: an Annual Kid's Fishing Day the second Saturday in June for children under 12, and the Kids in the Creek program each spring when high school kids come out to learn about stream ecology. Hatchery staff also put on a Salmon in the Classroom program in local schools and are helping out with Entiat High School's Natural Resource class this year. The hatchery has also implemented several restoration projects on their grounds and hopes to continue enhancing their wetland, floodplain, and riparian areas. They are also working with local youth from the high school to improve the Red Willow Trail along the Entiat River.

To find out more about the hatchery visit <http://www.fws.gov/entiatnfh/index.cfm> or call hatchery manager Craig Chisam at (509) 784-1131. Tours are available Monday-Friday between 8am and 4pm.



Photo by Cascadia Conservation District
Kids in the Creek field day, May 2012

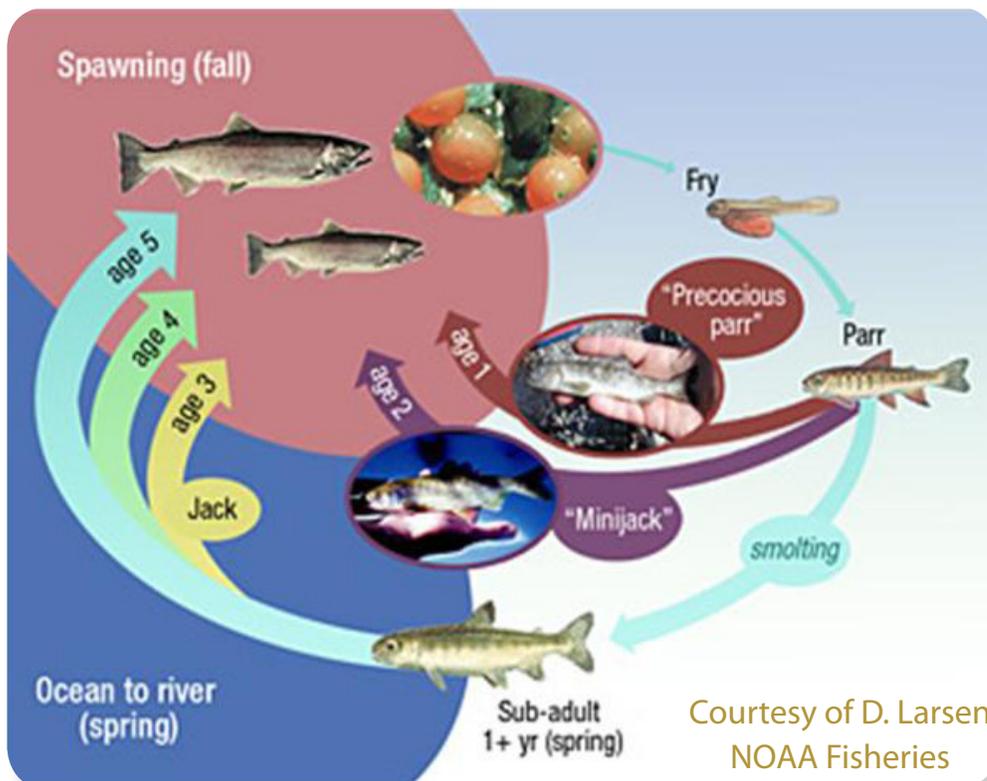
Spring Chinook

King, Quinnot, Tye; by whatever name you choose, *Oncorhynchus tshawytscha*, or Chinook as it is commonly called, stands out among salmon. The Chinook is the largest of the salmon species and adult fish normally range

in size from 24 to 36 inches and can range from 10 to 50 pounds. There are records, however, of fish as long as 58 inches long weighing up to 100 pounds!

The Chinook is blue-green, red or purple on its back and top of the head with silvery sides and white abdomen. It also has black spots on its tail and the upper half of its body. One of its most distinguishing characteristics is its black gums and gum line.

Spring Chinook spend their early days in larger and deeper waters and generally travel farther upstream to spawn than other salmon. They can be found on their spawning redds (nests) primarily in September and October. After laying her eggs, the female guards the redd from 4 to 25 days before dying while the males pursue other mates before they, too, die after spawning. Chinook salmon eggs hatch 90 to 150 days after being deposited depending upon water temperature. In order to successfully reproduce and increase in numbers, Chinook need adequate habitat.



Courtesy of D. Larsen
NOAA Fisheries

Clean, cool, oxygenated, sediment-free fresh water is essential for egg development. Riparian vegetation and woody debris help juvenile salmon by providing cover and maintaining low water temperatures.

Fry and parr (young fish) usually stay in fresh water 12 to 18 months before traveling downstream to estuaries before heading out to the ocean, where they spend one to five years in the ocean before returning to their home rivers to spawn. Some Chinook, primarily males, return to the fresh water one or two years earlier than their counterparts, and are referred to as "jack" salmon.



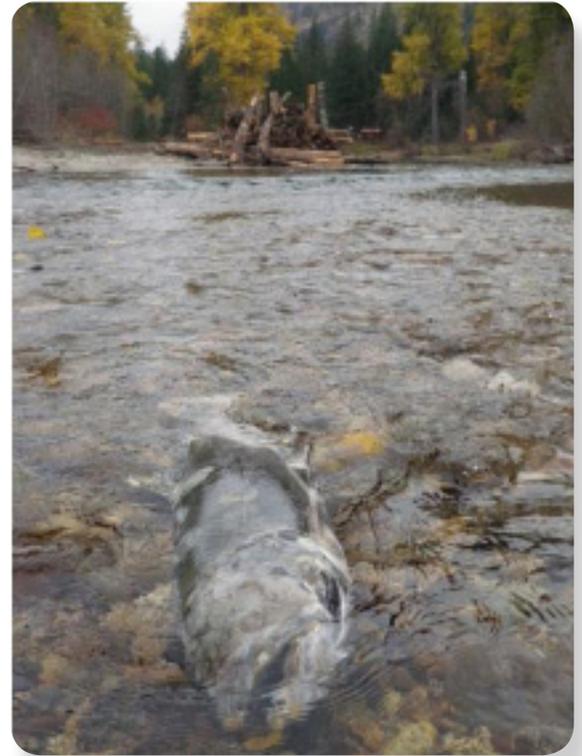
STILLWATER PROJECTS

July of 2012 ushered in a new era of watershed and salmon habitat restoration in the Entiat Valley. On July 8 a large, double-rotored CH-46 Sea Knight helicopter began transporting and staging logs which would eventually become newly constructed salmon habitat at three separate construction sites. These projects are on a size and scale not previously seen in the Entiat. Paid for by the Bonneville Power Administration, the Bureau of Reclamation and other salmon recovery funding sources, they represent a long term commitment to the improvement of the natural environment. In past years, projects tended to be small and relatively isolated from one another. Because of this, it was difficult to determine whether they were having the desired impacts.

Today, efforts are focused on large projects in defined geographic regions in order to create an impact big enough to be able to measure their effect.



Tyee Ranch - Photo by Cascadia Conservation District
Fall Glory with Large Wood and Scour Pool



Dillwater Project - Photo by U.S. Fish and Wildlife Service
Spawned out Chinook salmon with Large Wood in Background

Chelan County, in partnership with the US Fish and Wildlife Service, sponsored construction of the Dillwater project, which is located primarily on property owned by the Chelan-Douglas Land Trust. The site is located upstream of the Kelsey Lane bridge. Over 100 logs were carefully and precisely placed building five separate structures, which will provide hiding places for young fish and places for adult fish to rest on their way upstream.

The Tyee Ranch project, the second of the three projects, was sponsored by Cascadia Conservation District. At this site, 573 logs were used to construct 9 large wood structures; 2 new side channels were excavated and an existing backchannel area was improved. Habitat logs were placed in the new side channels to provide immediate cover for fish. In addition, one of the levees on site was breached in two locations, partially removed at its southern end, and riprap on the facing of the levee was removed.

The Yakama Nation sponsored the third restoration project constructed in 2012. A total of 7 log structures were constructed throughout the site in areas that would have naturally accumulated wood.

In addition to the installation of wood, five areas were enhanced for backwater rearing habitats for juvenile salmon.



3D Project - Photo by Yakama Nation Fisheries
Refuge-Side Channel with Wood

Another element of the project took advantage of Brennegan Creek. At this site, an old channel was excavated to increase total habitat area, allowing Brennegan Creek to feed water through the new habitat to the mainstem Entiat River.

The journey to these exciting and innovative conservation projects has been in the making since the early 1990's when a group of Entiat landowners got together to address natural resource concerns in the watershed. Entiat Watershed Planning Unit (EWPU) coordinator Susan Dretke explained that it is certainly gratifying to see the results of all their hard work.



Photo by USFWS

Adult taking refuge in new wood structures

“Entiat Valley landowners can be very proud of being a part of something so special, which they can share with their children and grandchildren in the years to come”

- Susan Dretke,
EWPU & Cascadia
Conservation District

Quick Facts

PURPOSE AND OBJECTIVE

- ▶ Reconnect the river with its floodplain
- ▶ Create new and enhance existing side channels
- ▶ Create and restore new habitat for fish
- ▶ Re-vegetation with native plants
- ▶ Streambank stabilization

ACTIONS

- ▶ Side channel excavation and enhancement
- ▶ Levee breaching and partial removal
- ▶ Riprap removal
- ▶ Installation of large wood structures
- ▶ Riparian and floodplain re-vegetation

EXPECTED BENEFITS

- ▶ Streambank erosion rates reduced
- ▶ New and enhanced habitat for endangered fish species
- ▶ Reduction in water temperatures over time
- ▶ Re-establishment of native vegetation

PARTNERS INCLUDE

- ▶ Private landowners
- ▶ Cascadia Conservation District
- ▶ Chelan County Natural Resources Department
- ▶ US Fish and Wildlife Service
- ▶ Yakama Nation

PROJECT COSTS

- ▶ Dillwater \$372,000
- ▶ Tyee Ranch \$1.3 million
- ▶ 3D \$1.9 million

Monitoring



Annual Data Gathering

Several factors, including abundance, are considered when analyzing whether a fish should be put on or removed from the threatened and endangered species list. Because fish abundance varies widely from year to year, trends are generally tracked using a kind of average of each year's abundance. In addition to abundance, other measures of population health include the number of offspring produced per parent, DNA and behavioral diversity, and how widely fish are distributed throughout their range. Each of these factors is considered by the National Oceanic and Atmospheric Administration (NOAA) when they assess the health of Endangered Species Act (ESA) listed populations for which they are responsible for recovery.



Crew using electro shocker to catch fish for study

The Entiat River is perhaps the most intensively studied river in the area for the above listed factors. Data gathered and analyzed in the Entiat on a yearly basis includes:

Habitat Monitoring-Studying the physical characteristics of the river (i.e. pools, cover, types of stream bed, and any changes) to determine whether fish can survive.

Water Temperature-Salmon and steelhead need cool water in the summer and above-freezing water in the winter.

Fine Sediment-Too much sediment can harm egg development and affect a fish's ability to catch prey.

Adult Returns-Counting the number of adults who return to spawn gives an idea of how the population is doing.

Redd Surveys-Counting the number of "nests" deposited by a spawning female helps estimate egg and fry production, and also helps calculate the number of adult fish returning to spawn.

Juvenile Abundance and Growth-Another key indicator of how a fish population is doing; the more juveniles who survive and the better they grow, the better their chances of making it to the ocean and back.

Side Channels-Young fish need a safe resting place during high water. Scientists count the numbers of fish using side channel habitat on the Entiat.

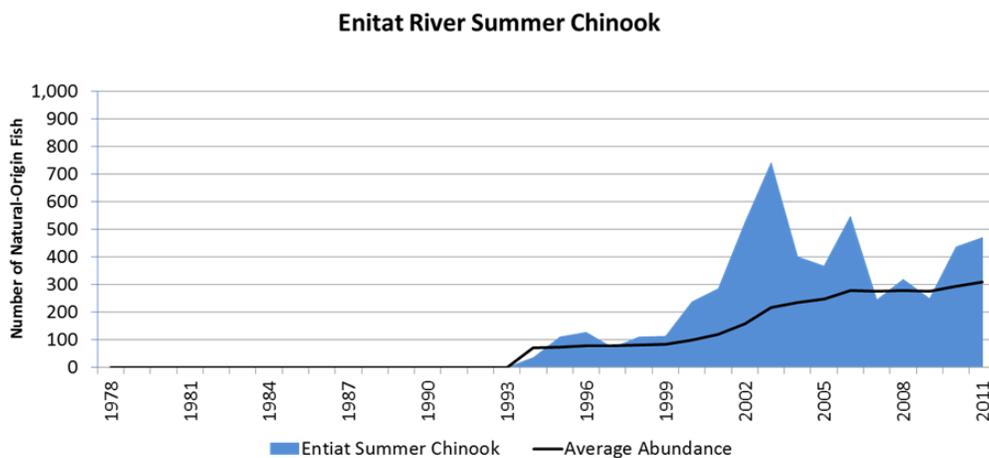
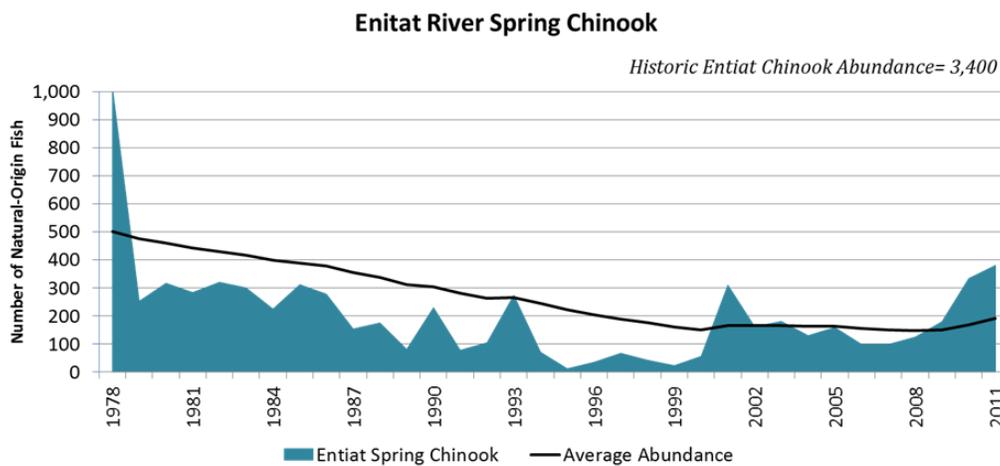
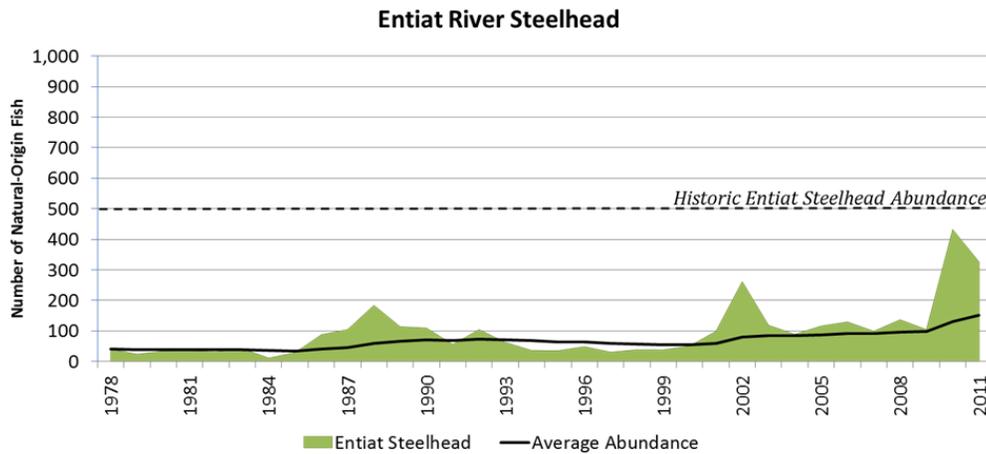
Production-Measures the number of juveniles emigrating out of the watershed.

Project-Scale Monitoring-Looks at fish use around man-made habitat features to determine if recovery work is making a difference.



Brook trout bring measured, weighed, and pit tagged

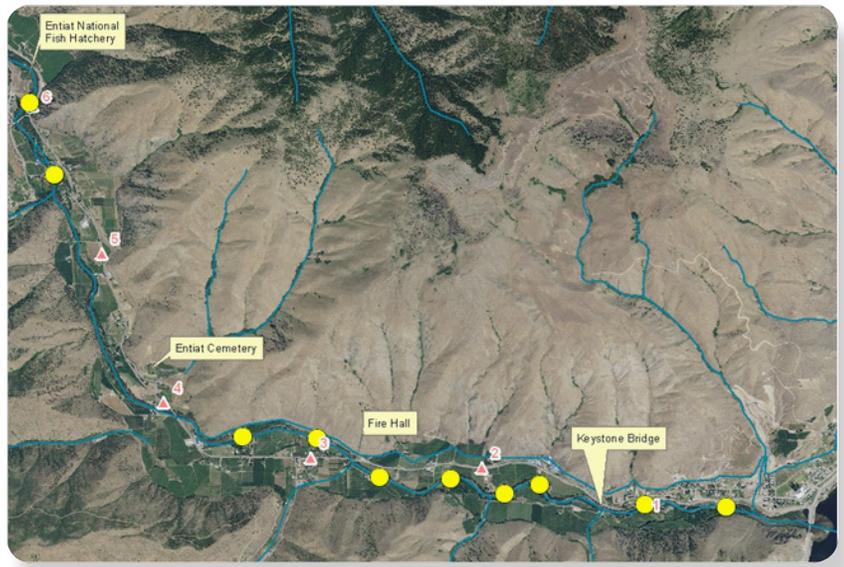
The following graphs show the number of natural-origin (non hatchery) adults returning to the Entiat watershed between 1978 and 2011. Data Source: Washington Department of Fish and Wildlife. Figure courtesy of Upper Columbia Salmon Recovery Board.





Summer 2014 Restoration Projects

The next round of salmon recovery projects in the Entiat is scheduled for the summer of 2014. The projects will be located between the Entiat National Fish Hatchery and the mouth of the river. The potential types and location of projects were identified through a collaborative effort between the Bureau of Reclamation, the Upper Columbia Salmon Recovery Board's Regional Technical Team (RTT), the US Fish and Wildlife Service, Yakama Nation, Chelan County Natural Resources Department and Cascadia Conservation District, among others. The sponsors and types of potential projects are listed below:



● = Proposed Project Location

Cascadia Conservation District (Contact: Mike Cushman 664-9387)

- Placement of large boulders or boulder clusters in over-widened reaches
- Backwater habitat creation/enhancement
- Side channel reconnection/ enhancement
- Culvert replacement/ fish passage barrier removal
- Entiat PUD Canal system conversion project
- Placement of logs at head of island(s)
- Placement of habitat logs along stream banks

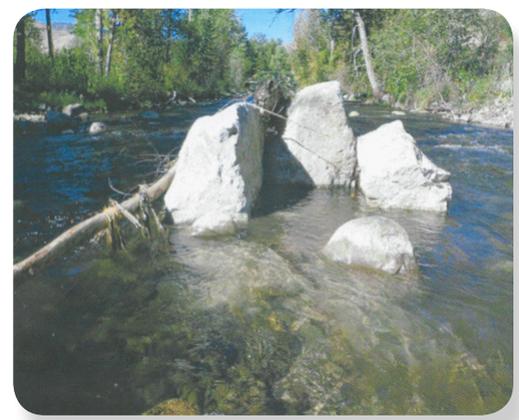


Photo by Yakama Nation
Typical Boulder Cluster

Chelan County Natural Resources Department (Contact: Mike Kane 664-6467)

- Placement of large boulders or boulder clusters in over-widened reaches
- Riprap removal from existing levee
- Remove or strategically breach levee above Harrison side channel
- Remove or strategically breach levees on river right (RM 1.9 and 2.5)
- Side channel creation/enhancement
- Log structure at inlet of enhanced side channels



Photo by Yakama Nation
Typical Habitat Log Placement

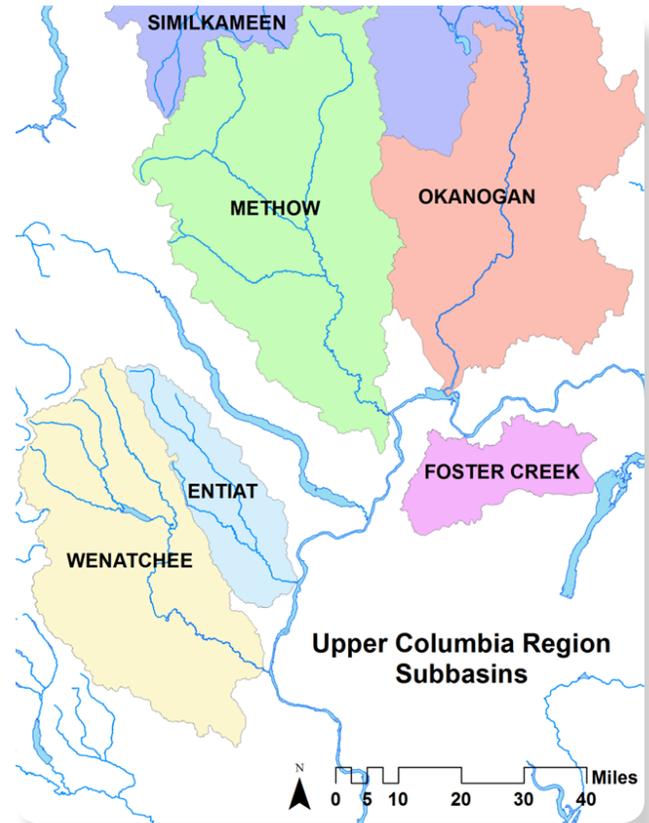
Yakama Nation (Contact: Chris Clemmons 881-5746)

- Placement of habitat logs along channel margins
- Placement of large boulders or boulder clusters in over-widened reaches

One purpose of these actions is to create an environment for juvenile fish so that they will have the best chance for survival and growth to prepare them for their journey to the ocean. The bigger and stronger they are, the more successful young fish will be in reaching their destination and surviving to make the return trip.

Restoration across the Region

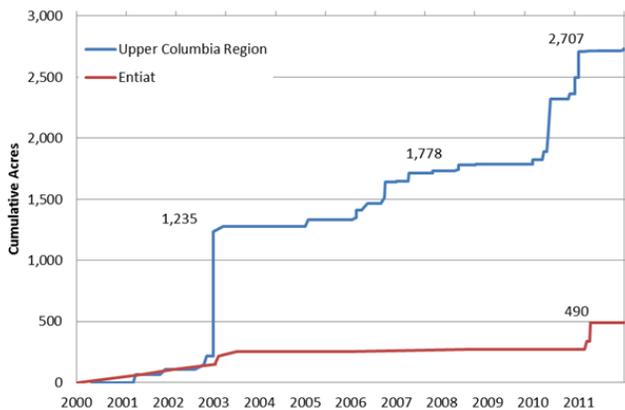
The recovery of Endangered Species Act (ESA)-listed salmon and steelhead in the Upper Columbia Region is dependent in part on habitat restoration and protection actions across the region. Project selection is based on priority recovery actions and reaches. The Entiat River is one of many priority areas for restoration. Within these priority areas, the focus is first on maintaining the best remaining areas of good habitat and diversity. Restoration efforts are focused on repairing and enhancing habitat where possible. Based on current information from the Habitat Work Schedule database, more than 300 restoration and protection projects have been put in place over the last decade in the Upper Columbia region and almost 50 have been in the Entiat. These efforts have resulted in 500 acres of habitat protected; 16 acres of upland and riparian habitat planted with native trees, shrubs, and grasses; and over 7 miles of stream restored in the Entiat alone.



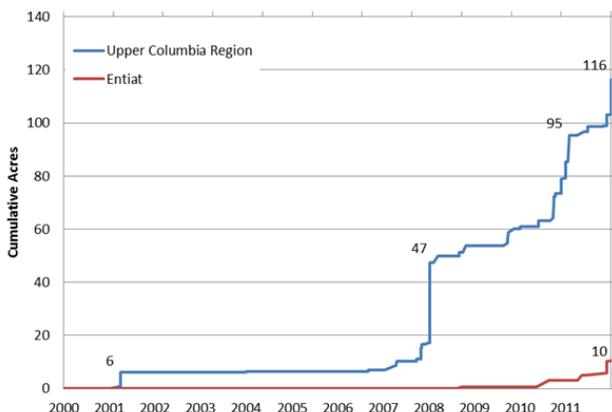
Graphic by Upper Columbia Salmon Recovery Board

The Upper Columbia Region and the four priority subbasins for restoration and protection of fish habitat.

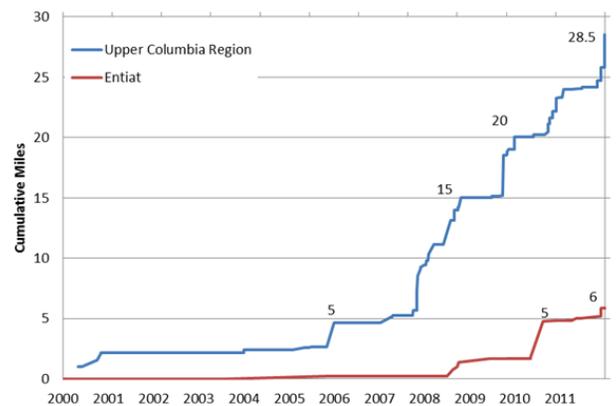
Acres Protected



Acres Treated



Stream Miles Improved



The graphs to the left and above are based on current information from the Habitat Work Schedule (HWS) database. Visit HWS at: <http://hws.ekosystem.us/> for additional information.



The Stillwater group of projects (see pages 8-9) are one example of the type of large-scale restoration efforts that are being implemented. Below are other examples from the Methow, Wenatchee, and Okanogan watersheds. Some of these projects are similar to those in Entiat but also illustrate the range of restoration tools that are being used across the region to recover salmon and steelhead.

Middle Methow (M2) Restoration Projects

Starting in 2010, the Methow Salmon Recovery Foundation (MSRF), the Bureau of Reclamation, and the Yakama Nation partnered to undertake a large-scale restoration effort on the Methow River. The M2 Project, as it is called, is located on the Methow River between Twisp and Winthrop. When it is completed, the project will result in as much as eight miles of restored habitat. In 2012 major construction took place at three sites along the river (Whitefish Island, WDFW Floodplain Area, and Eagle Rock). Like the Entiat Stillwater projects, these are designed to improve habitat for young salmon and steelhead. The goal is that more juvenile fish will survive their first year in the river and be larger and stronger for their migration downstream to the ocean. The hope is that more fish will survive and return later as adults. To date, MSRF and the Yakama Nation have installed 34 structures and restored approximately 1 mile of mainstem and side-channel habitat in the Middle Methow.

Lower Wenatchee Restoration Projects

One of the issues in the lower Wenatchee is the lack of off-channel rearing and refuge habitat for migrating juvenile salmon and steelhead. In order to address this, restoration partners have come together on a number of projects aimed at creating and restoring side channel habitat and connecting rearing off-channel habitat to the Wenatchee River from Leavenworth to lower Sunnyslope.

The result has been a total of nine projects over the past eight years. These projects have restored and created over a mile of side channel habitat. This restoration work can be seen along the river on the drive between Wenatchee and Leavenworth. Many new side channels exist along the river and are being used by juvenile fish as they migrate downstream to the Columbia. Partners have also worked to fence livestock, plant vegetation along creeks, and screen irrigation diversions.

Okanogan Salmon Creek Restoration

Salmon Creek, a tributary to the Okanogan River, is considered one of the most significant opportunities to restore summer steelhead in the Okanogan Basin. The Colville Confederated Tribes along with their partners have been working to restore habitat in the lower 15 miles of Salmon Creek over the past decade. Projects have included fish passage improvements, land acquisition, flow improvements, riparian enhancement, and fine sediment reduction. One of the major issues in Salmon Creek has been that fish have been unable to swim past a five mile stretch which has historically gone dry at lower flows. As a result, fish had been unable to access 11 miles of pristine habitat in upper Salmon Creek for the past 80 years. By deepening the low-flow channel, removing cobble barriers, and improving flows, fish are now able to pass into the upper watershed to spawn.



Photo by the Bureau of Reclamation
Whitefish Island Project in
the Methow River's M2 Reach

HOW TO GET INVOLVED

WHAT	WHEN	WHO	WHERE	CONTACT
Native Plant Sale	Nov-Feb	All ages	Online/By Mail	Cascadia Conservation District
Entiat Earth Day	April	Entiat School	Entiat School	Entiat School
Earth Day Essay Contest	April	Entiat 6th-8th graders	Entiat School	Cascadia Conservation District
Swallow Fest	April	All ages	Ardenvoir	Cooper's Store
Arbor Day	April	All ages	City Hall	Entiat Tree Board
River Appreciation Logo Contest	May	Entiat 4th-5th graders	Entiat School	Cascadia Conservation District
SummerFest	June	All ages	Entiat City Park	Chamber of Commerce
Kitefest	July	All ages	Entiaqua Park	Chamber of Commerce
Entiat River Appreciation	First Saturday in August	All ages	Entiaqua Park	Cascadia Conservation District

FOR ADDITIONAL INFORMATION

ORGANIZATION/AGENCY	CONTACT INFORMATION
Bonneville Power Administration	http://efw.bpa.gov ~ (503) 230-5136
Cascade Columbia Fisheries Enhancement	www.ccfeg.org/ ~ (509) 888-7268
Cascadia Conservation District	www.cascadiacd.org ~ (509) 664-9370
Chelan County Natural Resources Department	http://www.co.chelan.wa.us/nr/ ~ (509) 667-6682
Chelan County Public Utility District	http://chelanpud.org ~ (509) 663-8121
Chelan County Public Works	www.co.chelan.wa.us/pw/default.asp ~ (509) 667-6415
Chelan Douglas Land Trust	www.cdlandtrust.org ~ (509) 667-9708
Trout Unlimited Washington Water Project	www.tu.org/conservation/western-water-project/washington ~ (509) 888-0970
U.S. Bureau of Reclamation	www.usbr.gov ~ (509) 667-8494
U.S. Fish and Wildlife Service	www.fws.gov ~ (509) 665-3508
U.S. Forest Service	www.fs.fed.us ~ (509) 664-9200
Upper Columbia Salmon Recovery Board	www.ucsrp.com ~ (509) 662.4707
Washington Department of Fish and Wildlife	wdfw.wa.gov ~ (509) 662-0452
Yakama Nation Fisheries	http://host119.yakama.com/ ~ (509) 423-6354



215 Melody Lane
Wenatchee, Washington 98801

Postal Customer

ENTIAT WATERSHED ANNUAL REPORT 2013

This report is intended to provide an update on the implementation of actions identified in the Entiat Watershed Plan.

The plan was created by the Entiat Watershed Planning Unit, whose mission is to voluntarily bring people together to improve communication, reduce conflicts, address problems, reach consensus, and implement actions to improve natural resource management on associated private and public lands in the Entiat River watershed.

PARTNERS

Bonneville Environmental Foundation
Bonneville Power Administration
Chelan Co. Fire District #8
Chelan County Natural Resources Department
Chelan County Public Utility District
Chelan-Douglas Land Trust
City of Entiat
Entiat Grange
Entiat Irrigation District
Entiat School
Entiat Valley Family Farmers
Entiat Valley Landowners
Entiat Valley Volunteers
Friends of the Entiat National Fish Hatchery
Integrated Status and Effectiveness Monitoring Program
National Oceanic and Atmospheric Administration - Fisheries

Priest Rapids Habitat Committee
Chelan Co. Rocky Reach HCP Tributary Committee
Salmon Recovery Funding Board
Trout Unlimited - WA Water Project
Upper Columbia Salmon Recovery Board
USDA - Forest Service, Entiat Ranger District
USDA - Forest Service, Pacific Northwest Research Station
USDA - Natural Resources Conservation Service
USDI - Bureau of Reclamation
USDI - Fish and Wildlife Service, Mid-Columbia Fishery Resource Office
Washington State Department of Ecology - Central Regional Office
Washington State Department of Fish and Wildlife - Region 2
Yakama Nation Fisheries

CONTACT

Mike Rickel, Program Manager
Susan Dretke, Resource Specialist II
Cascadia Conservation District
215 Melody Lane
Wenatchee, WA 98801
(509) 664-9370
www.cascadiacd.org