# Nason Creek Lower White Pine Alcove Properties

April 2011 photo taken from Nason Alcove footbridge, looking upstream

## Stewardship Plan
## August 2014

Chelan-Douglas Land Trust
P. O. Box 4461
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Notes for updates between electronic revisions should go here:

CHELAN~DOUGLAS
LAND TRUST
Our Land, Our Water, Our Future

The primary management goals for the Nason Creek Lower White Pine Alcove Properties are to protect fish habitat and an unconstrained functional floodplain, and to provide opportunities for low-impact, non-motorized public recreation.

# Nason Creek Lower White Pine Alcove Properties
# Stewardship Plan

## Contents

## Summary of Acquisitions

| Property | Date Acquired | Acquired From | Tax Parcel | Acres | River Footage | Percent Floodplain | Land Costs | Funding *Source |
|---|---|---|---|---|---|---|---|---|
| Parker (P) | 7/30/2013 | Stone Parker | 261603420000 Portion of S ½ Sec.03, T 26 N, R 16 E | 6.56 | ~1900 feet (P&C combined) | ~80 | $138,000 | Salmon Recovery Funding Board (SRFB) + Chelan PUD HCP Tributary Committee |
| Click (C) | 7/30/2103 | James and Cathy Click | 261604320060 Portion of S ½ Sec.03, T 26 N, R 16 E | 8.43 | ~1900 feet (P&C combined) | ~80 | $181,000 | SRFB + Chelan PUD HCP Tributary Committee |
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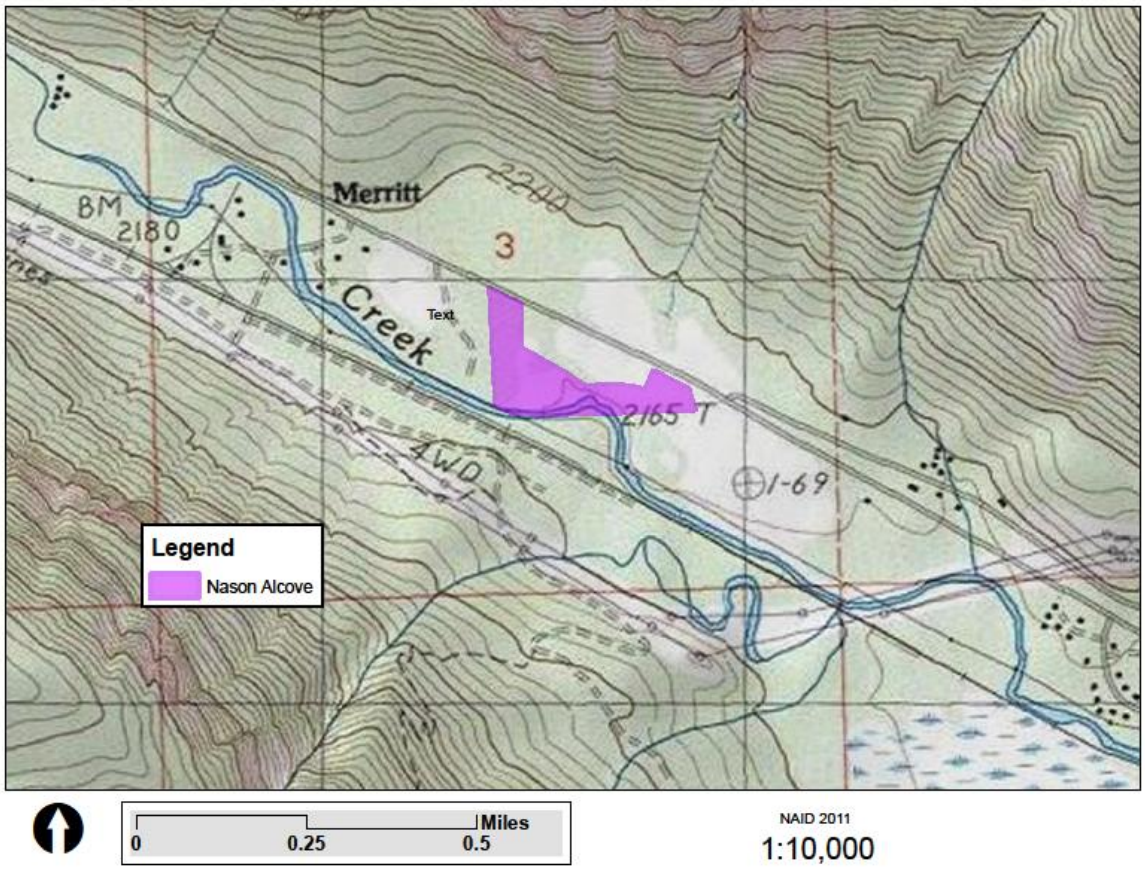
* Grant PUD Priest Rapid HCP Coordinating Committee also provided funding to assist project development.

# I. Introduction

The Chelan-Douglas Land Trust (CDLT) began conserving lands along Nason Creek in 2013 with the purchase of the Click/Parker/WsDOT Property (aka Nason Lower White Pine Alcove) near river mile 11.3. These properties, totaling approximately 15 acres and 1900 feet of riverbank, permanently protect functional floodplain, critically important habitat for resident and anadromous fish, wildlife habitat, diverse plant communities, open space, scenic views, and opportunities for education, scientific research, and low-impact public recreation. The Summary of Acquisitions on the preceding page provides an abbreviated history of CDLT's fee simple acquisitions along Nason Creek. Appendix 1 has more details about each acquisition.

Figure 1. Map of Nason Creek Properties and Vicinity




The highest stewardship and management priority for the properties is to protect river and floodplain connectivity, healthy riparian and upland vegetation, and productive salmonid habitat. Other uses such as public access and non-motorized recreation will be managed to minimize conflicts with ecological resources and may be restricted as needed to protect priority ecological

values. This Stewardship Plan sets priorities and parameters for achieving those goals and lists activities that will be permitted and restricted. It does not provide details for complex and specific projects such as riparian and fish habitat restoration. Plans for such activities will be developed as needed to ensure that they are current and consistent with CDLT policies and procedures and are coordinated with project partners including adjacent landowners. Although this plan is intended to serve for many years, it will require periodic review and revision as ecological and social conditions change over time. If CDLT acquires new properties along Nason Creek, they will be managed under the guidelines of this plan if appropriate. It is anticipated that acquisitions with salmon recovery funding especially floodplain properties where fish habitat restoration work is likely will require regular updates to this document.

## II. Ecological Resources

The Nason Alcove properties are located at approximately 2100' elevation in the so-called Lower White Pine Reach of Nason Creek. This reach is described as relatively unconfined, meaning the river channel has greater opportunity to migrate laterally across the floodplain compared to other reaches more confined by the railroad, highway, and other infrastructure. (All reaches of Nason Creek below White Pine are confined to some extent.) The valley bottom is U-shaped and the gradient is less than 3 percent. The Rosgen (1996) stream type is generally B to C, the river channel is moderately incised and moderately sinuous, the dominant substrate is gravel, and the bedform is predominantly riffle and run (BOR 2009a, BOR 2009b).

Nason Creek is a snowmelt dominated system, meaning the majority of its annual discharge occurs in late spring. However, brief spikes in flow are not uncommon during fall and winter, often due to rain falling on accumulated snow high in the watershed. In recent years, high flow typically occurs in May and June, peaking between 2000 and 3000 cubic feet per second (cfs). In August through October flows drop below 100 and sometimes below 50 cfs (data from Ecology gage 45J070 located near mouth of Nason Cr). Large floods as high as 5000 and 6000 cfs, mostly due to rain on snow, occurred in 1948, 1959, 1980, 1990, 1995, and 2006 (BOR 2008). Because Nason Creek lacks glaciers and relies heavily on ephemeral snowmelt, it experiences low summer flows and elevated summer water temperatures (i.e.- exceeding state and Federal criteria with regard to salmonids), which is partially a natural condition and partially exacerbated by human developments such as surface and ground water withdrawal and stream side vegetation removal. As such global warming will negatively influence Nason Creek more directly and immediately compared to other rivers fed by glaciers or possessing fully forested floodplains.

The dominant riparian plant association is black cottonwood/ red-osier dogwood (*Populus trichocarpa/Cornus stolonifera*), black cottonwood/common snowberry (*Populus trichocarpa/symphoricarpos albus*) and several other riparian vegetation associations (Kovalchik

and Clausnitzer 2004). Vine maple, and willow species are common trees in the riparian zone. Trees on upland sites include Ponderosa Pine, Douglas-fir, grand fir, and a few western redcedar.

The Nason Creek watershed is considered a major spawning and rearing area for spring chinook, steelhead, and bull trout (all species protected under the Endangered Species Act). It is a potential stronghold for coho, which were recently reintroduced, and were probably abundant in Nason Creek many years ago, due to historic habitat which likely included extensive side channels, beaver ponds, and wetlands, all of which are particularly important for juvenile coho. Nason Creek is rated as the highest priority in the Wentachee basin for protection and restoration, and specifically for Nason Creek the highest priority is protection of "transitional and peripheral habitat" meaning side channels and wetlands (RTT 2013). In any given year, depending on the time of year, some or all of these species would be expected at the Nason Alcove. Chinook redds have been observed nearby.

## A. Stewardship Objectives

1. Protect the ecological integrity, biodiversity, and health of the floodplain, fisheries habitat, riparian habitat, and upland forest.
2. Protect and maintain viable populations of species of special concern.

## B. Stewardship Strategies

Riparian and Aquatic Habitat

Nason Creek as a whole has widely varying floodplain and riparian conditions, and this is also true on or near the individual CDLT properties. For example, along the south side of the CDLT properties the railroad main line prevents the river from occupying large areas of the south valley where it once flowed. Much of this "disconnected floodplain" still includes wetlands and other important fish habitat, but it is no longer accessible. Low-impact strategies to protect and maintain the current levels of geomorphic, hydrologic, and biological function may include:

- Allowing natural processes such as flooding, snag creation, woody debris accumulation, and channel migration and formation to occur.
- Allowing native species to establish through natural processes into altered habitats such as old pastures and home sites.

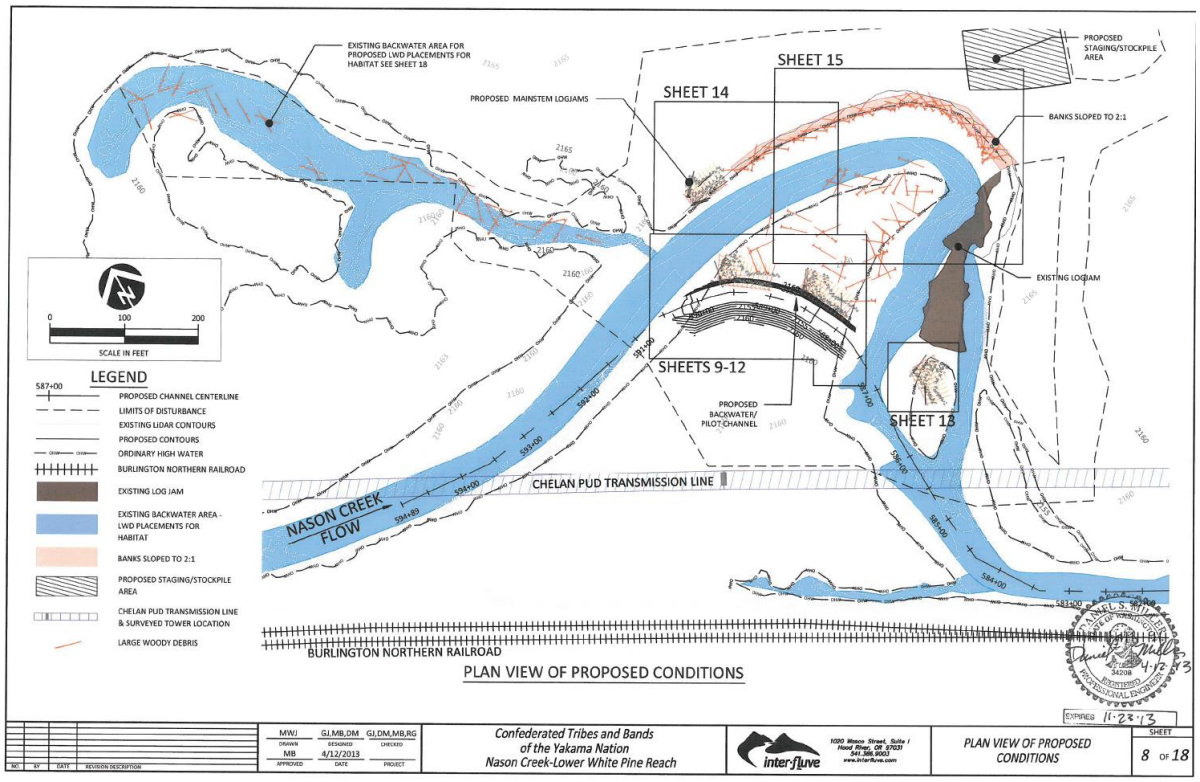
Targeted restoration projects may be undertaken if considered necessary and funds are available. CDLT will work with partner agencies and organizations to implement best management practices as prescribed in a detailed implementation plan[1]. These actions may include:

[1] Cascade Columbia Fisheries Enhancement Group, Cascadia Conservation District, Chelan County Natural Resources Department, Colville Confederated Tribes, Upper Columbia Regional Technical Team, U.S. Bureau of Reclamation, U.S. Forest Service, U. S. Fish and Wildlife Service, U.S. National Marine Fisheries Service, Trout Unlimited/ Washington Water Project, Washington Department of Fish and Wildlife, Yakama Indian Nation, and others involved in fish conservation and habitat protection.

- Planting native vegetation into old pastures and other altered lands to restore riparian function.
- Installing fish habitat features that further enhance existing conditions.
- Facilitating fish access into areas currently inaccessible to fish due to berms, culverts, dikes, etc.

In late 2013 the Yakama Nation (YN) Fisheries Program built a bank protection and fish habitat restoration project at Nason Alcove, referred to by the YN as the "First Bend" project). This project involved excavation of a side channel across a gravel bar, installation of hundreds of pieces of large wood and cable in the new channel and along the existing eroding bank in the main channel, and revegetation of the stream banks and upland. See Figure 2. There are no current proposals for other work.

Figure 2. First Bend Design Drawing



Non-native Vegetation

The Nason Creek properties have a number of noxious weeds along with exotic grasses and common weeds. The noxious weeds include diffuse knapweed, spotted knapweed, common tansy, St. Johnswort, common mullein, and sulfur cinquefoil. Controlling noxious weeds is required in Chelan County.

Practices may include:

- Preventing or minimizing the size of soil disturbance and if necessary, quickly replanting with native species.
- Using integrated control methods in consultation with the Chelan County Noxious Weed Control Board and W.S.U. Cooperative Extension. These may include targeted application of selective herbicide, hand pulling, mowing, and release of biocontrol organisms.
- The Yakama Nation hired contractors to restore ground disturbed by fish habitat installation using grass, forbs, and trees native to the area. Preliminary success of the plantings appears variable; woody riparian species survival seems good but survival of grass seedlings is unclear. The contractor will replant areas where plant survival is poor.

**C. Monitoring Ecological Resources**

High priority ecological features will be monitored to measure the effectiveness of stewardship practices. Possible strategies include:

- Identifying and mapping distinct habitat types and features where data are absent, inaccurate or inadequate.
- Using survey and monitoring data collected by other agencies and organizations; e.g. restoration effectiveness monitoring, spawning surveys, aquatic habitat surveys, bird surveys.
- Establishing photo monitoring stations in priority areas to provide a visual record of trends in habitat structure and composition over time.
- Using aerial photographs and satellite images (e.g. National Agriculture Imagery Program; Google Earth) to track river channel migration and habitat expansion and/or contraction over time.

## III. Management Issues

This property has four primary concerns described in detail in Appendix A. They are 1) First Bend project bank erosion and re-vegetation concerns, 2) dilapidated bridge(s), 3) motorized access, and 4) weeds.

## IV. Cultural Resources

The YN First Bend project on Nason Alcove began before CDLT owned the land. It is unknown whether YN conducted a cultural resources survey beforehand.

## V. Public Access

The properties are open to compatible non-motorized recreation, scientific study, education, and nature viewing. Proximity to US 2 makes it possible in theory to reach these areas easily, but there are some complications described below. Canoeing and kayaking on Nason Creek occurs summer and fall, probably rarely. There are no known commercial trips along Nason Creek.

Nason Creek Lower White Pine Alcove

There is a narrow vehicle access point off US 2 about 150 meters west of the Click's driveway, nearly hidden in the trees, leading to a forested parking area and hiking trail. An inconspicuous sign points to a trail to the river, and later crosses the alcove via a footbridge leading to the Clicks' residence. The bridge is on CDLT property but the boundary with Click is only a few meters beyond the north side of the bridge, in an area of thick willows. By continuing up the trail one would suddenly reach the Clicks' backyard, and from there it would be possible to return to the parking area via a narrow road which passes their home and shop building, thereby making a loop trail. CDLT needs to install a sign telling people to turn around at the bridge. Because the vehicle access is hard to find, visitation is unlikely except by locals.

CDLT will pursue more convenient access arrangements with the Clicks, and also the neighbors to the east, Foltz, Deal, and Squadroni, regarding use of the driveway from US 2. The driveway enters on the Squadroni property, crosses the north eastern corner of the CDLT property via an access easement, then has spurs terminating at the Deal and Foltz properties. It does not presently provide legal access for CDLT at that location (see email B). This access was used by YN when they built First Bend, and would be useful in the future for CDLT to assess vegetation in the meadow area, which includes many weeds. Since this driveway has a mailbox and looks like an ordinary private road, it does not appear to be a likely place for visitors to wander in without signage.

### A. Stewardship Objective

- Allow non-motorized recreation, scientific study, and educational use compatible with conserving ecological resources.
- Maintain a level of use that is compatible with conservation objectives.

### B. Stewardship Strategies

Strategies may include:

- Installing informational signs where appropriate that list the history of the property, its conservation values, and organizations that helped acquire the property. On June 26, 2014 one CDLT/ SRFB sign was installed near Hwy 2, and two no motorized signs were added in other locations; see email C
- Installing CDLT property signs to mark the boundaries of the property.
- If necessary, posting signs that list rules and restrictions. This list may include:

- No motor vehicles (done)
- No camping
- No fires
- No firewood cutting
- Pack out garbage
- CDLT permission required for educational events, restoration activities, and scientific studies

If recreational and educational trails are desired in the future, CDLT will develop a site-specific trail plan following CDLT's Trail Guidelines & Standards (CDLT 2011).

**C. Monitoring Public Access**

Monitoring the effects of public use on the natural resources and its impact to neighbors is essential for the conservation of the property. Monitoring strategies may include:

- Recruiting and support volunteer Site Stewards who will routinely monitor and report visitor use, maintain signs and trails, and educate users.
- Maintaining good communications with neighbors and responding in a timely manner to their concerns about use and management. It seems likely that the Clicks would call CDLT if there are issues. The same goes for Stone Parker, former owner of part of the property, who lives on the opposite side of Hwy. 2 and still visits the trail area.
- Utilizing volunteers to monitor wildlife and habitats and mark and maintain trails, if any are designated or built.
- Establishing photo-point stations to record changes in resources over time.

## VI. Stewardship Funding

Stewardship of property is the foremost responsibility of the CDLT. Stewardship costs include property taxes, liability insurance, legal defense insurance, outreach, staff salary, administration, travel, and stewardship services and materials. CDLT has a policy to secure stewardship funding for new land acquisitions at or prior to closing or, if funding is not in-hand, to have a plan to secure the funds (Policy 12.2 Funding Fee Land Stewardship). Funds may come from many sources, including sellers who are asked to contribute to the perpetual management of their conservation property. Additional funding comes directly from CDLT member donations, in-kind contributions from members and partners, grants and services performed by cooperating agencies and organizations, and special fund raising campaigns. CDLT received stewardship contributions to the permanent Stewardship Fund from the Parkers ($8,000) and Clicks ($12,000).

## VII. Accomplishments

- Nason Alcove 2014: Bridge removed 6/26
- Nason Alcove 2014: Signage installed 6/26
- Nason Alcove 2104: Alerted YN to weeds and erosion; see App
- Nason Alcove 2014: Began measuring bank profile June 26

## VIII. Implementation Schedule

- Nason Alcove: get details from YN re: their First Bend monitoring (bank and reveg); I assume there is one b/c they sent me the one for 3-D; we agreed to this during June, 26 2014 meeting; see email D
- Nason Alcove: winter 2015- look for and remove the other old bridge Jim Click says is lost in alcove area; if extant, it's probably treated wood, which is toxic to aquatic organisms
- Nason Alcove: snorkel alcove to look for fish; measure water temps and compare to river channel; snorkel along the First Bend structures and look for fish; do these during low flow conditions in late summer 2014 to (hopefully) document fish survival while they are trapped in the alcove
- Nason Alcove: discuss with Clicks and others re: the ROW from Squadroni; section V; summer 2014
- Nason Alcove: one more sign needed near footbridge indicating private property ahead; section V; summer 2014

## IX. References

BOR (Bureau of Reclamation). 2008. Nason Creek Tributary Assessment.

BOR (Bureau of Reclamation). 2009a. Upper White Pine Reach Assessment.

BOR (Bureau of Reclamation). 2009b. Lower White Pine Reach Assessment.

CDLT. 2011. Trail guidelines and standards. Unpublished report. Chelan-Douglas Land Trust, Wenatchee, WA. 6 p.

Kovalchik, Bernard L,. Clausnitzer, Rodrick R. 2004. Classification and management of aquatic, riparian, and wetland sites on the national forests of eastern Washington: series description. Gen. Tech. Rep. PNW-GTR-593. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 354 p. In cooperation with: Pacific Northwest Region, Colville, Okanogan, and Wenatchee National Forests.

Rosgen, Dave. 1996. Applied river geomorphology. Pagosa Springs, CO. Wildland Hydrology 352 p

RTT 2103. A biological strategy to protect and restore salmonid habitat in the Upper Columbia Region. Available from the Upper Columbia Salmon Recovery Board, Chelan, Washington.

## Appendix 1. Nason Creek Lower White Pine Alcove Property History

| | |
|---|---|
| Date Acquired: | July 30, 2013 |
| Location: | North of Nason Creek approximately 1 mile W of Merritt and between RM 11.2 and 11.4 |
| Site Address: | Hwy U.S. 2, Leavenworth, WA98826 |
| Acquired From: | Click and Parker |
| Tax Parcel: | 261603420060 (river parcel to the East; former Click); 261603420000 (alcove parcel to the West; former Parker) |
| Abbreviated Legal: | Portion of the South half of Section 3, Township 26 North, Range 16 East of the Willamette Meridian, Chelan County, Washington. |
| Total Acreage: | 14.99 Acres |
| Funding Sources: | Salmon Recovery Funding Board, Chelan PUD Habitat Conservation Plan Rocky Reach Tributary Committee |

The state holds a Deed of Right on this land to Use Land for Salmon Recovery. Land must be used for salmon recovery and is open to public access subject to restrictions allowed under the agreement, by written agreement with the State, or under state law.

CDLT holds title to two adjacent parcels. This was preceded by a combination of boundary line adjustments and separate transaction between Parker and Washington Department of Transportation. Many maps on file at CDLT show previous boundaries.

The CDLT properties include approximately 1900 feet of riverbank, mostly on the north side, or "river left" in boating parlance. CDLT also owns the south bank located on the point bar opposite the former Click property. These properties are nearly surrounded several parcels of private land, the exception being a Chelan County ROW to the West, and, possibly, a small area of U.S. Forest Service (USFS) property to the South near the tracks, the precise boundary of which near CDLT is uncertain.

Approximately 50% of the property is mapped as wetland (freshwater forested/shrub & freshwater emergent) by the U.S. Fish and Wildlife Service National Wetlands Inventory. Approximately 95% lies within the 100-yr flood plain, as depicted by Map Book map 38 (BOR 2008). This includes an open water alcove which fluctuates in size depending on river level. During low flow it is approximately 1 acre with a perimeter of about 2000 feet.

Not including the river channel, most of the eastern portion of Nason Alcove is an open field on a high bank occupied by grasses and shrubs. This area must have been cleared of trees decades ago for haying. A portion of the irrigation pipe can still be seen behind the Click's outhouse. Several years ago Jim removed sections of the pipe that had been exposed by bank erosion. Most of the high surface on the western portion of Nason Alcove is mature moist conifer forest or, in the lower elevations closer to the river, a combination of a gravel bar occupied by younger deciduous riparian trees and shrubs as well as an open water alcove.

This alcove is a remnant of the old main river channel, which flowed through this area in 1962 and 1975, according to Map Book map 28 (BOR 2008). At those times, the land that is now open field east of the alcove would have extended about 200 feet south, across the gravel point bar which now exists across the river, to the approximate location of the channel excavated by the YN First Bend project in 2013, which is basically where the river was in 1962 and 1975. It should be noted that prior to development of the highway and the railroad in many areas the river channel probably moved from valley wall to valley wall. In this particular area there are indications that the river was north of Hwy 2, probably only a few decades ago.

It is unknown when the channel moved, but it was before the Clicks bought the property in 1991. In the years between, the area experienced unusually large winter floods in 1980 and 1990, which could have forced rapid channel realignment away from the alcove. The presence of the railroad riprap on the opposite side of the river probably contributed by accelerating the flow velocity where it entered the alcove, encouraging the river to straighten its path instead of making a tight turn at the old river bend into the alcove area. Once that happened, the area immediately downstream, especially on the opposite bank, would have been subjected suddenly to much greater erosive forces. With the trees and roots gone, that bank would have immediately started its steady retreat to the north.

The alcove outlet is currently occupied by a low beaver dam which appears to have existed for many years. In the alcove itself, on the nearby gravel bar, and across the river there are other signs of recent beaver activity. The water surface elevation in the alcove is likely controlled by local groundwater most of the time. Due to the dam, it is not usually "connected" to the river at the surface. During the relatively mild 2014 freshet the dam at the alcove outlet probably overtopped, but just barely and briefly. David observed a handful of unknown juvenile fish in late May 2014, by which time the river had dropped and the outlet was disconnected, suggesting they recently had access over the dam. There is usually no other surface connection. Jim Click says that during very high flows the entire gravel bar and alcove area are submerged by the river.

**Management Issues- Nason Alcove**

Post-project Erosion and Revegetation Concerns

This particular stretch of Nason Creek has experienced significant channel changes in the last few decades. In late 2013 the Yakama Nation Fisheries Program built the First Bend bank protection and fish habitat restoration project on the property. This took place while CDLT was in the process of closing the real estate transaction. CDLT has not seen documentation of the project's objectives. Treatments involved excavation of a side channel across a gravel bar, installation of hundreds of pieces of large wood and cable in the new channel and along the

existing eroding vertical bank, contouring the vertical bank to a stable slope, and revegetation of the stream banks and upland.

In the spring of 2014 CDLT site visits indicated new bank erosion on both ends of the engineered wood structure along the main channel, and that post-project site rehabilitation in the uplands is not yet adequate. The bank erosion is a concern particularly on the upstream end of the project area because scour could develop behind the engineered logs along the face of the bank and accelerate quickly if left untreated. CDLT brought this to YN's attention in March. CDLT also told YN that the uplands are a concern because plantings are sparse, the meadow is dry and sun-exposed, and conditions appear favorable for weeds, especially knapweed and mullein, both of which were present. YN had not been to the site since 2013. (Note: Only the upstream end is on CDLT and Click property. The lower end is on adjoining Foltz property, where there is a second area of eroding bank adjacent to the treated area.) In a conversation YN told CDLT that WDFW disallowed them to install wood along the downstream end because of concerns about impacts to live trees at the top of the bank, and that their consulting engineer told them during design development, that the project would not cause erosion on the upstream CDLT end.

CDLT staff met with YN June 16, 2014 to discuss both issues. YN indicated they are not concerned about the bank, although they acknowledged 1' or 2' of erosion had occurred in the area of concern. But the explanation and details about their monitoring efforts were vague, so CDLT reviewed the final design drawings (4-12-13 date stamp) and began to measure the bank profile in the affected area beginning June 26, 2014 and will monitor (see email C). Every time there is a high flow event for the next few years it would be advisable to repeat these measurements.

The design drawings depict what appears to be a buried log revetment on the upstream end of the project (shown as site D in the drawings) immediately downstream of the currently eroding bank. There is no narrative in the drawings. It is called a log jam. But it is shown in a location mostly above the high water line, with substantial numbers of logs, piles, and large rock ballast, mostly buried in the near-vertical bank. When viewed in person, most of this area is below ground. Therefore it appears to be intended to prevent scour from "getting behind" the rest of treated area downstream, as if it was expected that bank erosion could occur in this area and thus expose what is now buried, and that material would then armor the top end of the treated bank. Perhaps this is a precautionary measure. If this is correct, and if it functions effectively, then rapid erosion behind the rest of the treated bank would be unlikely. However, by deflecting river energy away from the YN project area, it would likely accelerate bank erosion immediately upstream under a pair of large pines near the alcove inlet.

Regarding the re-vegetation, YN agreed the grass re-seeding is not meeting their expectations. YN suggested they would have Wildlands, Inc., their vegetation contractor, re-do this work. CDLT, YN, and Wildlands met on site June 26, 2014 to discuss (see email C).

Note: David was never on the property before spring 2014. Pre-project photos in CDLT files are inconclusive regarding bank erosion; none zoomed in on the right area. Photos of the upland taken in April 2011 show a carpet of dormant grasses. YN says the bank was eroding in places

up to 5 feet annually. David compared the oldest (1998) Google Earth aerial photo to the most recent (2013), which was taken while the YN project was underway. The newer image shows that upstream end of the riverbank hadn't changed noticeably, but the downstream end had eroded substantially near the CDLT/ Foltz property line.

Dilapidated Bridge(s)

On May 30, 2014 CDLT and Chelan County Natural Resources Department removed a dilapidated footbridge from the alcove. According to Jim Click (763-3094; 670-0450; wife: Cathy) it was dislodged during an unusually large flood in the mid-90s and floated downstream into the lower alcove where it remained partly submerged. We re-floated the bridge then cut it up and placed the pieces on a high gravel bar just south of the existing footbridge. During normal high runoff this area is high and dry, but during very high flows it becomes inundated. This debris included decking, nails, and a power pole. On June 9 and 26, 2014 CDLT removed two small truckloads of debris (treated wood pole, plywood decking, nails). According to Jim Click there is an older dilapidated bridge hidden somewhere in the willows, but CDLT has not yet seen any sign of it.

Motorized Access

CDLT has observed motor bike tracks on the gravel bar which appear to come from the west via the Chelan PUD (CPUD) power line corridor, which extends to Merritt and beyond. Typically the PUD periodically mows the larger trees in these corridors to protect the power lines. A portion of this corridor has been mowed even more, so that it is a grassy field. According to Jim Click, Gary Richards, the neighbor to the west, mows this area. It appears to CDLT that the mowed area extends onto CDLT property. On June 10, 2014 CDLT hired a surveyor to locate the property line. Although the willows on CDLT property will soon be thick enough to preclude easy access to the gravel bar beyond the grassy area, due to the proximity to Merritt, and the anticipated regular mowing from CPUD, this may be an on-going issue. CDLT installed signs in the area June 26, 2014.

Running between CDLT and the Richards property there exists a Chelan County right-of-way (ROW) for Cedar St, as shown on the original plat of Merritt. This straight, thin strip is thickly forested, and it is not useable as a road or path. (Richards apparently accesses the power line corridor via a wider drivable path located to the west.) According to Mitch Johnson, Chelan Co Public Works' GIS and Road Log Manager (phone call June 12, 2014; 667-6512) this 30' ROW is still valid. Randy and Gary Richards say they don't believe this (see email C).

Weeds

CDLT volunteers began pulling and spraying noxious weeds in June 2014. Herbicides Milestone (aminopyralid) and Tordon 22K (picloram) were applied with equal success. Periodic flooding will continue to distribute new weed seeds though the area requiring regular treatments.

Email B

June 3 2014

David,

Thank you for your good question about access to the CDLT property at the east end off Hwy 2. After further review, I believe the following: Click and Squadroni each granted a nonexclusive easement to Walter Donald Matthes to cross parts of their property for access. Matthew sold to Frazier who sold to Foltz.

Deal (east of Foltz) has access by virtue of easements created in Short Plat 2092 (encumbrance on Click (now CDLT), for the benefit of Lot 1 SP. 1980 (now Deal).

CDLT does not have legal access across the Squadroni (or Foltz) properties. Accordingly, unless we want to (1) ask for such access, or (2) create new access off Hwy 2 (unlikely), our access is limited to the Parker parcel to the west.

As we discuss, we should talk with the Clicks about informal access across their property to get to the restoration site. I will draft a "new neighbor" letter to Squadroni and Foltz, and specifically ask Squadroni about occasional access. We should also ask the Yakama Nation at our meeting on the 16th whether they have any formal access agreement with the landowners.

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Lands Project Manager
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Email C

June 26 2014 visit to Nason Alcove
Ecy Nason Cr stream gage = ~800cfs
David and Hanne; Jason Breidert (YN); Ryan Watts (Wildlands, Inc.)
Objectives:
1. Discuss status of First Bend re-vegetation
2. Discuss bank erosion
3. Remove bridge debris
4. Install signs
5. Measure bank profile and install gages

Re-vegetation
Ryan described his 3 recent site visits and observations. Only the most recent visit revealed significant numbers of sprouts. The lateness of this came as a surprise. Perhaps the weather this spring has been unusual. He's disappointed with the results to date, but based on today's visit things are looking better and it's not time to panic. He doesn't have explicit targets like # sprouts/ sq ft (my question). He observed a range of densities from place to place, generally on the low end of what he'd consider acceptable (~3-5/ sq ft). He described the site prep and other steps taken to achieve success such as de-compaction, etc (my question) and it sounds like they did the right things. Between the very new grass growth just beginning to take hold and the need to give things a full growing season, he recommended that we convene again next year to re-assess. Going back in now would reset the site to 0. Next year, if grasses still aren't taking, we could consider adding more woody species to jump start succession (my suggestion), but this would not be his preference (probably more grass seed and better mulching). The woody plants looked good, with a few exceptions, and the wood chips did too. Jason confirmed YN hired Philysha Olin to follow up and make sure this keeps up, which could include watering; not much she can do about the grassy areas. He'll send me details of what she's required to do soon. We discussed weeds briefly. For the most part Ryan didn't think knapweed was going to rapidly spread into the bare areas (my concern). Nevertheless he agreed weed control would be a good idea, provided the applicator was experienced and documented the treatments. Note: the wheat wasn't part of the seed mix; it must've come in with the straw mulch. This is not my specialty, but **Ryan's take seemed reasonable to me and I'm comfortable with things for now.** He'll send me his write-up of our visit, discussions, observations, next steps.
Erosion
**While being careful not to contradict anything Brandon told us at our 6/16 meeting where he downplayed my concerns, Jason agreed this is something we need to keep an eye on.** When asked, he confirmed that there is a buried revetment landward of the eroding bank (something I only thought to ask after I recently saw the stamped plans for the first time). Whether this component was merely added precaution, or rather an indication they expect erosion, this is still unclear to me, as is specifically what the project was intended to do to the channel alignment. I will ask Jason to send me the info he gave to Brandon to bring 6/16 (when he was reading from what looked like an email but he didn't offer it). This should include more details about what they've measured so far. I'll also ask him to keep me

posted on future monitoring. I told him we were going to start doing our own bank monitoring later that day. Our discussion was an easy one and that came as a relief.

Bridge debris

Removed and brought to Dryden TS. **Done.**

Signs

Installed **1 SRFB/ CDLT** sign on a tree ~20' from Hwy 2 along the semi-hidden drive-in entrance W of Click. Installed **2 "no motorized access" signs**: 1 on the old wooden "Trail ->" sign on former Parker property; 1 under the CPUD powerlines on what, as best we could tell, was the bdy between CDLT and Chelan Co ROW. We couldn't locate the survey cap (LS 9759) MF found 6/9. After 10 or 15 minutes we did find the **neighbors** Gary (father) and Randy Richards (son; listed as owner on Co website) who probably heard or saw us and came down on a tractor to investigate. Conversation began with a smirk and "if you're from the state I'm going to have to kill you" (Gary). He was unaware Parker had sold; became somewhat friendlier; rambled a bit about the Co ROW, his ownership extending half way across the river, BNSF doing whatever it wanted, his doing the mowing for CPUD with their blessing, not liking gov't, etc. I explained who were were, why we were there; said the Co confirmed the ROW as still valid (contrary to what he'd just said; something Jim Click had previously told me to expect), and that's why I was looking for the cap, so that we could measure 30' E and determine our bdy. Initially he was helpful, then said something about Weinert telling him his other bdy (to the W) was 430' over there and he could show us. This increased my suspicion that he knew more than he was letting on. I assume his property line is actually 400' here. I can only speculate that he may have removed the cap and that's why we called his son over to needlessly "help" clear brush in the vicinity of a larger wooden stake, a conspicuous marker with orange flagging, which is where he said the cap we were looking for was located. But Hanne and I had already been looking there and everywhere for 10 min and besides that location didn't fit with the 6/9 location. So I continued looking where I thought it should've been. Suddenly he got very agitated and yelled that we were trying to take 30' of his property. I explained again what we were doing and why. Just as suddenly he seemed glad to know CDLT was his neighbor, that he didn't like motorized activity either, and said it'd be fine to put up the sign where I'd suggested earlier (in the middle of the mowed lawn due N of the wooden stake, which is presumably 30' E of the cap we couldn't find). We shook hands and they left us to install the sign. I think he was putting on an act. Things were OK in the end but given the volatility a "next time" could be different. (Note: Jim Click told me previously that lately Randy was in poor health. He was mostly in the background and followed Gary's lead.)

Bank measurements

We hammered **four pieces of 4' rebar** horizontally into the bank so that the outer tips were flush with the bank. As the bank erodes, the distance they stick out can be measured. Three are arranged vertically underneath the YN 630 stake (located on the top of the bank) and also approximately in line with a separate vertical gage ("stick") we installed near the water's edge. The fourth pin was placed by itself in a location about 10' upstream in the deepest portion of the undercut bank which appeared to be eroding the most. See pictures. From the stick to the face of the undercut bank, in a straight line towards the YN 630 stake, **we measured several vertical transects**. Each distance below is the gap,

measured as close to horizontally as possible, between the corresponding mark on the stick and the same elevation on the bank.
1’ on stick: 59” (near top)
2’ on stick: 69”
3’ on stick: 77”
4’ on stick: 84”
5’ on stick: 53”
6’ on stick: 52”
7’ on stick: 23” (near bottom)
These distances reflect a concave area under the bank. It is this area, more than the top of the bank itself, where we need to measure. But it sounds like YN is only keeping track of how close the 630 stake is to the edge. (Jason says it’s 1 or 2‘ closer than it used to be. I’ll follow up and ask for a written description.)
Because of the possibility that the YN 630 stake will fall into the river, we pounded a pipe into the bank along the same line as the stick, only this line extends away from the riverbank so we will retain a monument even if we lose the stake. The pipe is 84” landward of the stake.
**Note**: As the pins erode from the bank, simple re-measurements will accurately reflect bank retreat. However, the other measurements between the stick and the bank should be interpreted as close but not precise. There is no clear line below the 630 pin down the face of the concavity where the tape measure could “connect to the stick”. This imaginary line was visually estimated. Upon re-measurement, which should be done periodically for at least the next couple of years whenever there is a high flow event (ex-> ~1000 cfs), **we should look for differences of at least of few inches before saying there’s been a change.**

David Morgan
Watershed Coordinator
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P.O. Box 4461
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Fax: 509-667-0719

Email D

Will do.

Ryan

Sent from my U.S. Cellular® Android phone
David Morgan wrote:
Thanks. As you visit from time to time, if you could shoot me updates I'd appreciate it.

David Morgan
Watershed Coordinator
Chelan-Douglas Land Trust
18 N. Wenatchee Ave.
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**From:** Ryan Watts [mailto:RWatts@wildlands-inc.com]
**Sent:** Monday, July 14, 2014 2:56 PM
**To:** David Morgan; Jason Breidert (brej@yakamafish-nsn.gov)
**Cc:** Hanne Beener; Neal Hedges; Mickey Fleming
**Subject:** RE: First Bend (aka Nason Alcove)- thanks for meeting

David,

I have a site visit tomorrow around Chelan, I am heading that way today. I am going to go via Nason Creek, I am going to stop and have a look around the site. FYI...

Thanks,

Ryan Watts

Wildlands, Inc.

Sent from my U.S. Cellular® Android phone
David Morgan wrote:
Ryan- thanks for following up. I agree; let's give it some time. Were you able to dig up the pre-project plant list?

Jason- pls send the other documents mentioned below.

Thanks again to both of you.

David Morgan
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**From:** Ryan Watts [mailto:RWatts@wildlands-inc.com]
**Sent:** Monday, July 14, 2014 9:42 AM
**To:** David Morgan; Jason Breidert (brej@yakamafish-nsn.gov)
**Cc:** Ryan Watts
**Subject:** RE: First Bend (aka Nason Alcove)- thanks for meeting

David,
Attached is our write-up regarding the Nason Creek First Bend Project. Let me know if you have any questions.
Thanks,
Ryan Watts
Wildlands, Inc.

**From:** David Morgan [mailto:david@cdlandtrust.org]
**Sent:** Wednesday, July 09, 2014 11:15 AM
**To:** Ryan Watts; Jason Breidert (brej@yakamafish-nsn.gov)
**Subject:** RE: First Bend (aka Nason Alcove)- thanks for meeting

Ryan- Thanks for the update.

David Morgan
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**From:** Ryan Watts [mailto:RWatts@wildlands-inc.com]
**Sent:** Wednesday, July 09, 2014 11:08 AM
**To:** David Morgan; Jason Breidert (brej@yakamafish-nsn.gov)
**Subject:** RE: First Bend (aka Nason Alcove)- thanks for meeting

David,
I have not forgotten about you, I have a couple of proposals that are due this week. Once I have these out the door, I will get a write up to you. Thanks for your patience.
Ryan

**From:** David Morgan [mailto:david@cdlandtrust.org]
**Sent:** Wednesday, July 09, 2014 9:18 AM
**To:** Ryan Watts; Jason Breidert (brej@yakamafish-nsn.gov)
**Subject:** FW: First Bend (aka Nason Alcove)- thanks for meeting

David Morgan
Watershed Coordinator
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**From:** David Morgan
**Sent:** Monday, June 30, 2014 11:59 AM
**To:** 'rwatts@wildlands-inc.com'; Jason Breidert (brej@yakamafish-nsn.gov)
**Subject:** First Bend (aka Nason Alcove)- thanks for meeting

Thanks for a productive site visit.

Ryan- Please send your write-up when you can get to it. No rush. Looking forward to seeing how things look this time next year. Please also send the pre-project botanical inventory, if you can find it.

Jason- Please send the info about the bank measurements taken thus far. When formal monitoring write-ups are done (I assume these will be done similar to the ones Chris recently sent me for 3-D) please pass them along. Also- when you have info re: veg monitoring expectations with P Olin please forward.

Thanks again

David Morgan
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Wildlands' attachment:

**Nason Creek - First Bend, Lower White Pine Reach**
**Channel and Habitat Enhancement Project**

Following is a summary of observations made during site visits on May 30, June 13, and June 26, 2014, and recommendations for future actions based on those site visits.

**Attendees of Site Visits:**

David Morgan (CDLT)
Hanne Beener (CDLT)
Jason Breidert (YN)
Ryan Watts (WL)

Wildlands, Inc. (WL) was hired by the Yakama Nation (YN) to perform native plant revegetation for the above-mentioned in-stream restoration project performed by the YN. Task items in the revegetation plan included decompacting construction access routes and staging areas, and seeding native grasses at all sites disturbed by construction activities. WildLands completed decompaction and seeding activities in the fall of 2013. As of early spring 2014, germination of seeded grasses was minimal, and it is presently a concern of the landowner Chelan-Douglas Land Trust (CDLT) and the YN. Including the site visit of June 26, Wildlands, Inc. has performed 3 site visits in 2-week increments to monitor the progression of the site.

**First Site Visit – May 30, 2014:**

Upon our arrival at the Project site, it appeared as though little to none of the seed had germinated. With closer inspection, however, WL observed numerous newly germinated grass seedlings. These seedlings were very small, at the 1-2-leaf stage, and fine. We observed that the cobbles were acting as mulch, holding moisture for the new grasses. We also noticed varying densities of grass seedlings that appeared to coincide different soil types; the darker, loamy soils had a greater density of new grass seedlings than did the lighter, sandy silts. Numerous weed rosettes, including knapweed (*Centaurea* sp.*)* were observed and hand-pulled during our visit.

**Second Site Visit – June 13, 2014:**

Germinated grasses had a jump in growth between our first and second site visits. On June 13th, grasses were in the 3-4-leaf stage, and densities appeared significantly increased. Differences in soil types continued to be apparent, though grasses in lighter colored soils also appeared to have grown. Density of grass seedlings, and plants in general, remained higher in the dark-colored soils. More knapweed (*Centaurea* sp.*)* rosettes were observed, and hand-pulled.

**Third Site Visit – June 26, 2014:**

Grass seedling vigor and densities continued to increase between the second and third site visits, but at a reduced rate. Once again, grasses in the dark-colored soils appeared to be performing better. More knapweed (*Centaurea* sp.*)* rosettes and larger plants were observed, and we hand-pulled all apparent weeds.

**Conclusions:**

First and foremost, it is Wildlands' experience that this sort of non-irrigated native grass seed takes time to establish, so patience is key.

Second, through our site visits and observations, it appears that the site is affected by its own microclimate, which helps to explain the late germination, lack of growth and vigor shown by seeded grasses.

Finally, the difference soil types have definitely impacted the germination and growth rates of seeded grasses. In the lighter, fine sandy silts, the vegetation in general is smaller and sparser than in the dark, loamy soils that contain more organic matter.

**Recommendations:**

Wildlands, Inc. strongly suggests that the newly seeded grasses be given a minimum of one full growing season to establish on the site. The site should continue to be monitored, and if the grass stand should not meet the desires of the CDLT by this time next year, then discussions may take place regarding potential mitigating actions.

The spread of knapweed (*Centaurea* sp.*)* should also be monitored closely, along with grass seedling establishment. Should knapweeds persist on the site, control measures (either manual or chemical) should be implemented. Left alone, knapweed could spread quickly across the site, outcompeting both the seeded native grasses and the newly installed containerized native plants. If chemical treatment is deemed necessary or preferable, it is crucial that a licensed, qualified individual perform the chemical applications. If manual control is preferred, it is important that sufficient weed control visits are scheduled to prevent seed production and dispersal of weed seeds across the site.

As far as mitigation methods, Wildlands, Inc. suggests that, prior to any re-seeding efforts, soil samples be taken throughout the disturbed sites, and sent to a qualified lab for testing. It is our suspicion that a lack of available nutrients and moisture holding capacity in some areas of the site are a major contributing factor to the low vigor and slow germination of these seeded areas. Once soil analyses are reviewed, an informed mitigation plan may be developed. Incorporation of compost or organic fertilizer/soil builders are two options that we have employed on other projects, with successful results.