



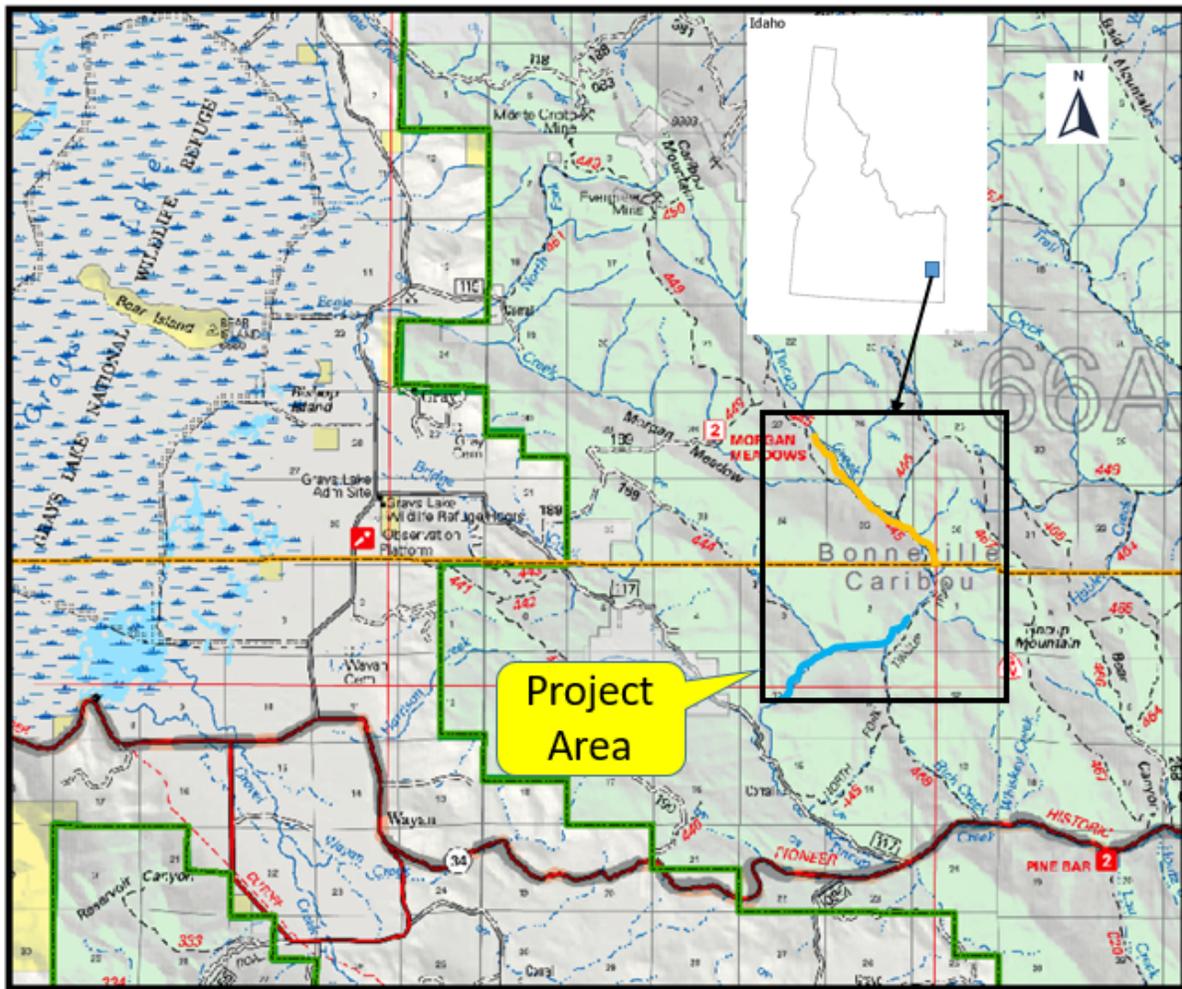
File Code: 1950

Date: February 12, 2020

Invitation for Comments North Fork Tincup creek Process Based Stream Restoration

Dear Interested Citizen,

The Caribou-Targhee National Forest (CTNF) is seeking comments on a proposal to improve 5.4 miles of Tincup Creek above the North Fork Bridge. Project is 11 miles due west of Freedom Wyoming (See Vicinity Map 1).



Map 1. Vicinity and Location Phase I in blue Phase II in orange

Background

Tincup Creek is home to three sensitive species the western toad, northern leatherside chubs, and Yellowstone cutthroat trout. Tincup Creek is one of three drainages on Forest where there are



known populations of northern leatherside chubs. The abundance and distribution of northern leatherside chub populations is tied to stable beaver dams with well-developed riparian vegetation. Sampling in 2015 documented leathersides primarily in the lower reaches near highway 34. Northern leathersides have not been sampled within the project area and Yellowstone cutthroat are lacking in abundance. Western toads are likely present.

The Forest Service, Trout Unlimited, and other partners from 2017-2020 restored 5 stream miles of Tincup Creek from Highway 34 to the North Fork Bridge. This new project is located one valley mile upstream of the North Fork Bridge within the Idaho Inventoried Roadless Area where road construction or reconstruction is allowed (Map 2.). And more specifically under Caribou City Backcountry Restoration where direction is given to improve threatened, endangered, proposed, or sensitive species habitat; and to maintain or restore the characteristics of ecosystem composition, structure, and processes (USDA 2008). The uplands fall within forest prescription 6.2(b) rangeland vegetation management and the bottoms within 300 feet of the stream channel is within prescription 2.8.3 aquatic influence zone.

This project will also improve water quality. Presently the Tincup Creek assessment unit (ID17040105SK003_02) is 303(d) listed as impaired and noted as not supporting for sedimentation/siltation for which a total maximum daily load (TMDL) has not been approved (IDEQ 2018)

The existing stream channel is single thread, overwidened, with vertical eroding banks 2-4 feet in height (Photos 1-4). The stream due to the high banks and being overwidened is lacking in overhead cover and instream structure. There is a severe lack of fish and habitat. The floodplain terraces which should be willow dominated are shifting towards drier upland species such as sage brush.

There is evidence of beaver activity at two distinct sites within the phase 1 project area. Dams in this area peak in numbers in the fall and in the spring time are frequently removed by high flows. When channels are incised and dams no longer reach the terrace or floodplain elevation spring flows have tendency to wash out the dams. This is also more likely in areas where the main dam building materials are small like willows vs. sites with large aspen. Tincup is overwidened and moderately incised with only willows readily available as a building material.

Purpose and Need

The primary purpose of this project is to capture sediment generated in the North Fork of Tincup Creek to improve water quality, habitat and floodplain connection. This will be done by providing beaver with post anchored log structures which will withstand high flows and assist in reconnecting the stream to its floodplain. Excess sediment can then be stored in beaver ponds and deposited upon the floodplain. Wood in the form of imported large trees will also be placed to form habitat and debris jams. Other complexes of logs will be anchored to the stream bed to increase scour above beaver ponds. The intent is to capture scoured sediment in beaver ponds, sealing the dams, and raising the streambed connecting it to the floodplain. Resulting in

rewetting of the floodplain to encourage willow growth again on the valley floor and creating multiple channels to improve fish and wildlife habitat (Photo 6).

Secondary benefit is to protect the 2017-2020 downstream restoration.

There is a need to implement projects across the Forest that improve riparian habitat, both to meet Forest Plan direction for the restoration of riparian areas and from a larger scale perspective, to improve habitat for sensitive species. The 2003 Revised Forest Plan for the Caribou National Forest states that management emphasis is to restore and maintain the health of these riparian areas. This project would be designed to help meet the Forest Plan goals and guidelines for aquatic influence zones (2003 RFP pp. 4:47-53).

Proposed Action

The action being proposed is to improve up to 5.4 miles of North Tincup Creek beginning one valley mile above the North Fork Bridge. We propose to use natural processes including beaver, natural stream power and the import of large wood, anchored and unanchored, to store and scour sediment to re-connect the stream to its floodplain as well as provide habitat complexity. The goal is to recreate a willow dominated valley bottom where water is spread across the floodplain at high flows and in multiple channels across the floodplain at low flows as assisted by beavers (Photo 6). Thus creating an abundance of fish and wildlife habitat, where now such habitat is limited.

This project proposes to use the following 4 types of treatment to meet project objectives and goals:

- Channel spanning PALS (post assisted log structure), Fig. 1
- Mid channel PALS, Fig. 2
- Bank attached PALS, Fig. 3
- Single unanchored logs placed within the bank full zone.

The objectives of channel spanning post assisted log structures (PALS) is to provide a log reinforced structure that beaver can then build dams upon or over that will be capable of withstanding high flows as the beaver ponds once again distribute stream energy across the floodplain. These structures will be built where beaver have had dams in the past and will also store sediment to raise bed elevations. These structures are expected to be highly porous until beavers adopt them or they retain sediment from spring flooding. Construction will not include sodding or mudding in to seal them.

The mid-channel and bank attached PALS objectives are to provide diversity of habitat and increase scour of bank material to fill in beaver dams making them more stable longer term and also raising bed elevation improving floodplain connectivity. These structures may also be utilized by beavers as base structures of their dams.

The objective of the unattached logs is to provide for natural recruitment of large woody debris to the floodplain or at flood elevations on beaver dams, or to form debris jams on the mid channel and bank attached PALS. These logs will allow the system to determine how they are

used. The thought is we cannot build the spanning log structures high enough to access the floodplain but during high flows the creek will be able to deposit these logs upon top of the other structures increasing their height, and increasing floodplain flow.

Much of the literature indicates that multiple treatments or follow-up is needed to ensure success with this type of process based restoration (Wheaton 2019). By placing un-anchored large wood in the system it is our hope that the stream will deposit this wood on top of structures in ways that will improve the floodplain connection and that beaver can incorporate it into more stable structures and decrease the likelihood of follow-up treatments.

The goal of these four treatment types is re-establish the beginning of a multiple channel system within 4 years that will improve in complexity over time.

If monitoring shows that flows are still not accessing the floodplain but beaver dams are now more stable, additional woody input may be needed to raise the beaver dams.

Phase 1 is designed to treat approximately 2.1 miles of stream length using about 470 trees configured into 113 structures and left as single unattached logs (Photos 1-4). Phase 2 has not been conceptually designed but will use the same methods as phase 1 and may treat up to 3.0 miles of stream (Photo 5).

- Trees used on this project will be 6-10" diameter standing green trees that will be cut the previous year to dry or will be dead and down, dead and standing snags will be avoided
- Trees will be skidded into place using draft horses.
- Trees that are incorporated into structures will be pinned into place using 3-4 inch diameter posts harvested on site and driven over logs at opposite angles.
- Posts will be driven using a small hydraulic gas powered pump and a hand help hydraulic post pounder.
- No sodding or mudding in of the structures is planned, high spring flows and beaver activity will be responsible for the stream response to the added wood.
- Little immediate backing of water is expected due to the large logs being placed.
- Base flows will be measured at a site above the North Fork Bridge pre and post project, with a site upstream of the project also to be located and measured.
- Anticipated time for construction is 14-22 team days or 2-4 weeks.
- Trees would be felled in 2021 and placed in 2022.

Beaver are recognized across the Forest as being a key species in willow dominated bottoms in maintaining stream stability and habitat. Efforts are under way Forest wide to increase beaver on the landscape and to use their ability to reconnect channels to their floodplains.

These efforts are also being applied in this drainage at a large scale as active restoration using heavy equipment is not an option and may not be as cost effective. This project will allow us to compare active restoration results on Lower Tincup where heavy equipment was used to rebuild the stream vs these process based restoration techniques.

Implementation Timing

Project is in the stage of undergoing environmental review and comment as well as design, and permitting. Project will meet and follow new guidance as directed by Idaho Water Resources regarding PAL structures. Once these phases are complete the next steps will be to secure funding and begin project construction. We anticipate that construction would not begin before June of 2021 but may occur any time thereafter. Project may be phased in during separate years. Phase 2 could be five or more years in the future, giving us time to assess and adjust phase 1 efforts.

Categorical Exclusion

The Council of Environmental Quality (CEQ) regulations provide for categorical exclusions (CE) to allow Federal agencies to exclude from documentation in an environmental assessment (EA) or environmental impact statement (EIS) certain categories of actions that do not individually or cumulatively have a significant effect on the human environment. Due to the minimal amount of disturbance associated with this proposed project, along with the improvements to wildlife habitat the Forest Service is considering analyzing this proposed project under a CE.

This proposal is consistent with the types of actions described within the Forest Service's National Environmental Policy Act Handbook (FSH 1909.15 Chapter 30) contained in Sec. 32.2 category 6 wildlife habitat improvement activities that do not include the use of herbicides or more than a mile of low standard road (36 CFR 220.6(e)(6)). Forest Service resource specialists have reviewed the proposed action and do not anticipate the proposed project to lead to any significant impacts or extraordinary circumstances, as described by Forest Service NEPA procedures at 36 CFR 220.6(b)(i-vii).

The Soda Springs District Ranger will be the deciding officer on this project.

If this project is analyzed under a CE, pursuant to the Consolidated Appropriations Act of 2014 (Pub. L. No. 113-76) and the Agricultural Act of 2014 (Farm Bill) (Pub. L. No. 113-79), this project is not subject to pre-decisional administrative review or administrative appeal. Further, it is not subject to legal notice and comment under the pre-decisional administrative review process (36 CFR 218.23).

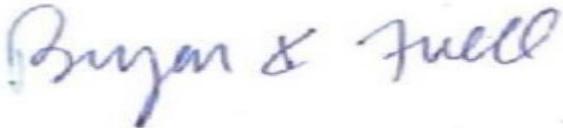
We are interested in your comments on this proposed action. Please mail, email, or fax your comments to:

Lee Mabey, Project Lead
1405 Hollipark Drive
Idaho Falls, 83401

email: lee.mabey@usda.gov
phone: 208-557-5784
fax: 208-557-5826

Please feel free to pass this notice on to others you think may have an interest or concern with this project. Comments would be most useful if received by March 16, 2020.

Sincerely,



BRYAN K.FUELL
District Ranger

References

US Department of Agriculture, 2008, 36 CFR part 294 Special Areas; Roadless Area Conservation; Applicability to the National Forests in Idaho; Final Rule.

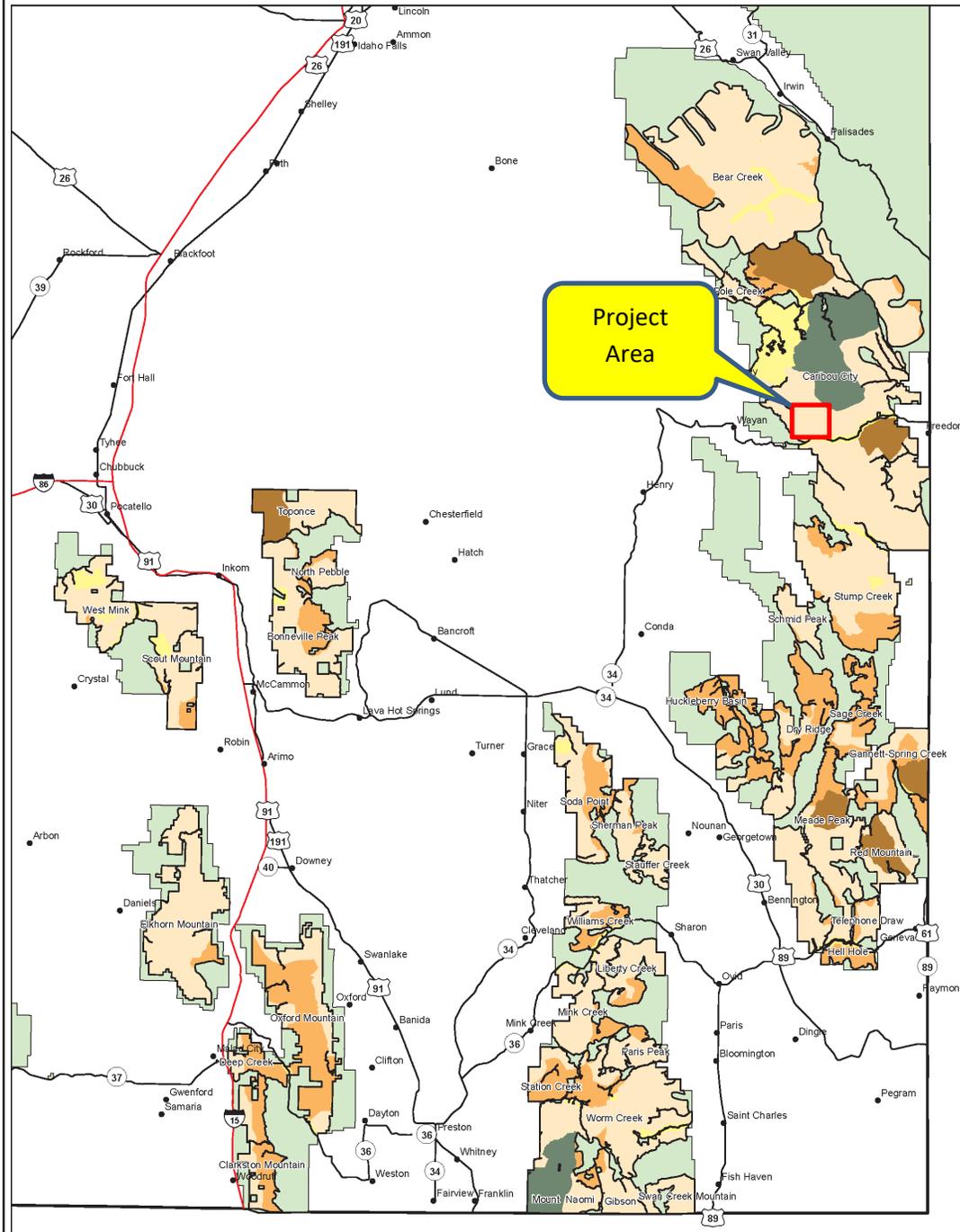
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5053193.pdf

Idaho Department of Environmental Quality, 2018, Idaho's 2016 Integrated Report Final.

https://mapcase.deq.idaho.gov/wq2016/scripts/adb2016.aspx?WBIDSEGID=ID17040105SK003_02

Wheaton J.M., Bennett S.N., Bouwes, N., Maestas J.D. and Shahverdian S.M. (Editors). 2019. Low-Tech Process-Based Restoration of Riverscapes: Design Manual. Version 1.0. Utah State University Restoration Consortium. Logan, UT. Available at: <http://lowtechpbr.restoration.usu.edu/manual>

Caribou Idaho Modified Roadless Rule Management Themes



The USDA Forest Service uses the most current and complete data available. GIS Data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify, or replace GIS products without notification.



Management Themes Applied to Idaho Roadless Areas

	Wild Land Recreation
	Primitive
	Backcountry/Restoration
	General Forest, Rangeland, or Grassland
	Forest Plan Special Area
	Wilderness
	National Forest System Lands (Other ownership is not displayed)

Map 2. Caribou-Targhee Inventoried Roadless Area

Channel Spanning PALS

Start with key pieces oriented stream-wise and face butt end or root wed upstream to maximize width that will create divergent flow paths around it.

FLOW

PROFILE VIEW

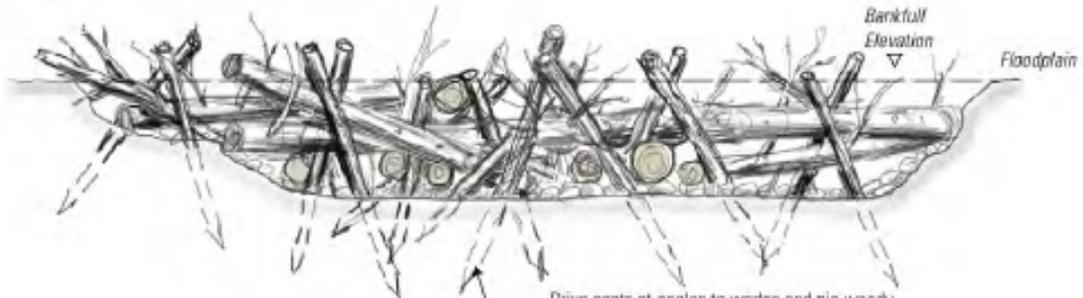


Drive posts in to bed angled inwards to wedge wood pieces and prevent them from rafting up and floating away in high flows.

Use a mix of sizes of wood and tangle together with branches.

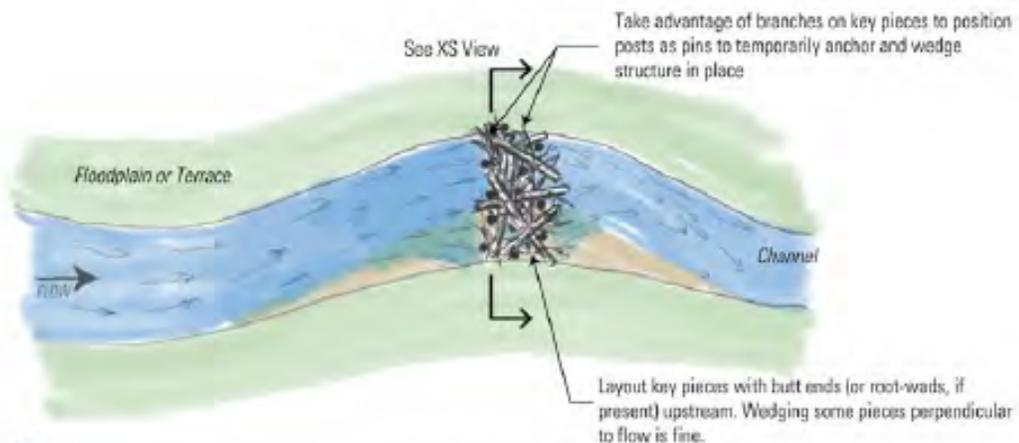
X-SECTION VIEW

Design height for channel-spanning structures is important. If it is intended Structure can protrude above typical high flow stages.



Drive posts at angles to wedge and pin woody debris together. Attempt to drive at least 1/4 to 1/3 of finished length of post into bed.

PLANFORM VIEW



Take advantage of branches on key pieces to position posts as pins to temporarily anchor and wedge structure in place

Layout key pieces with butt ends (or root-wads, if present) upstream. Wedging some pieces perpendicular to flow is fine.

Figure 1. Design of Channel Spanning PALS, [Credit](#) Wheaton 2019.

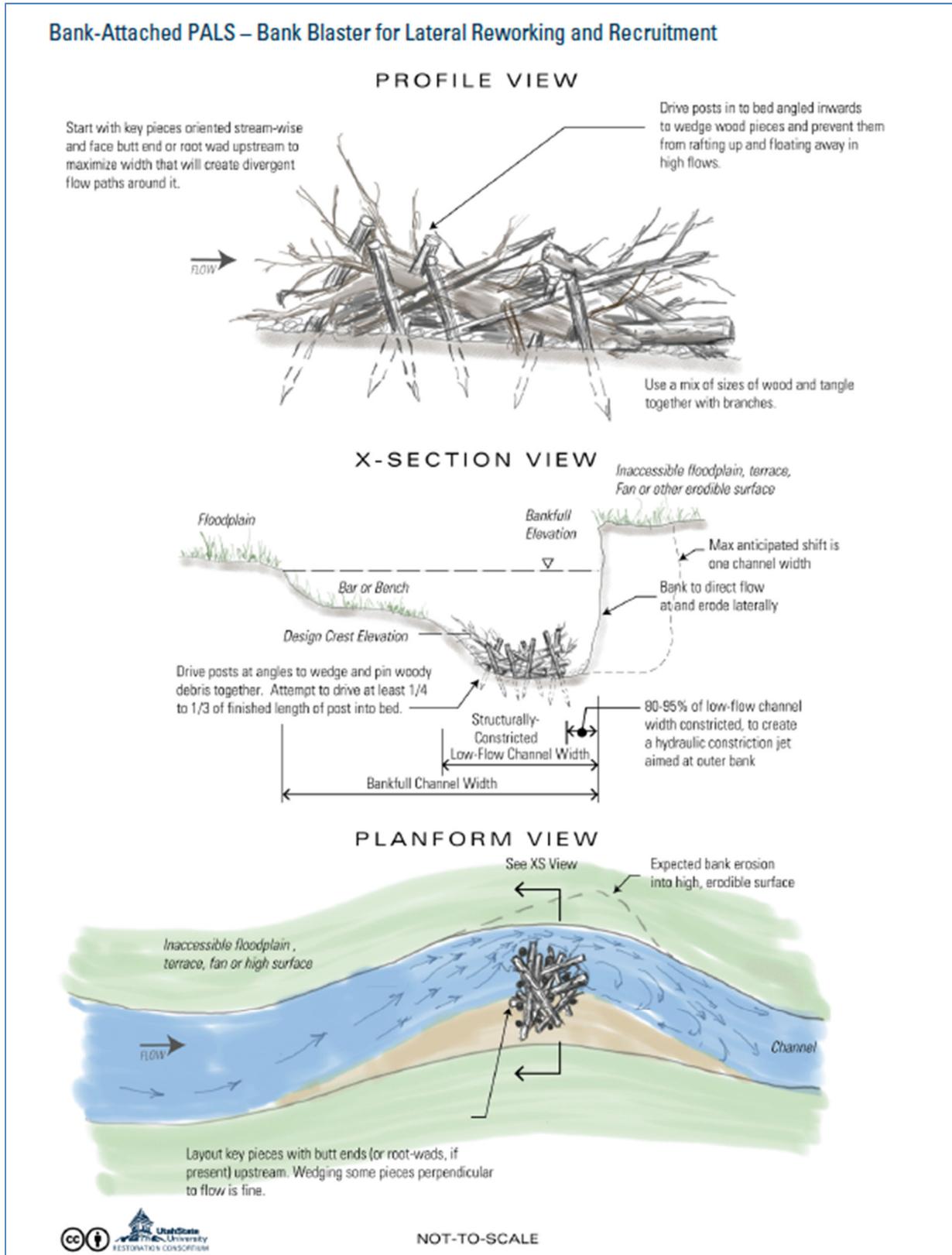


Figure 2. Design of Bank-Attached PALS, [Credit](#) Wheaton 2019.

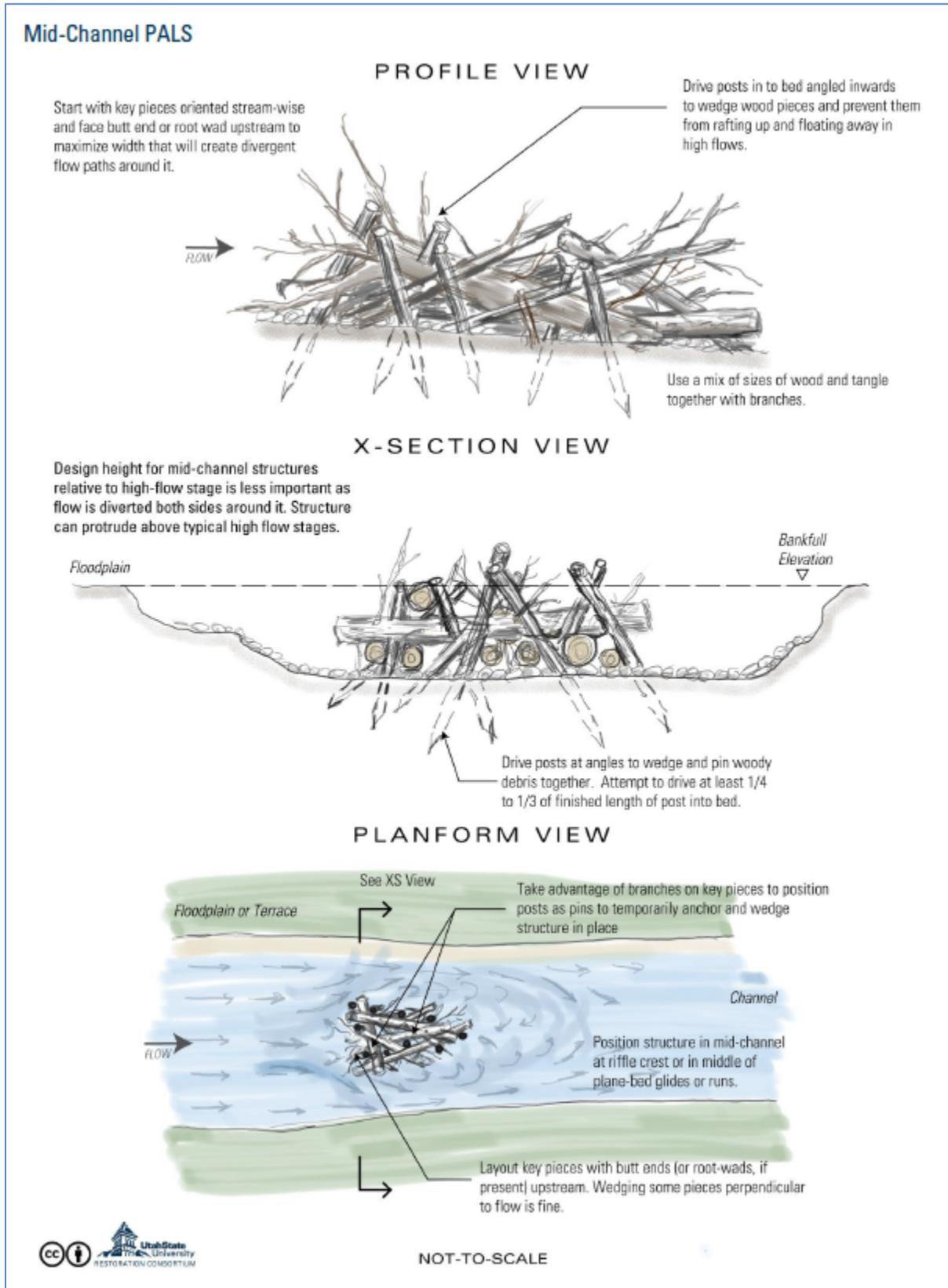


Figure 3. Design of Mid Channel PALS, [Credit](#) Wheaton 2019.

Phase 1 Conceptual Design, Three Complexes

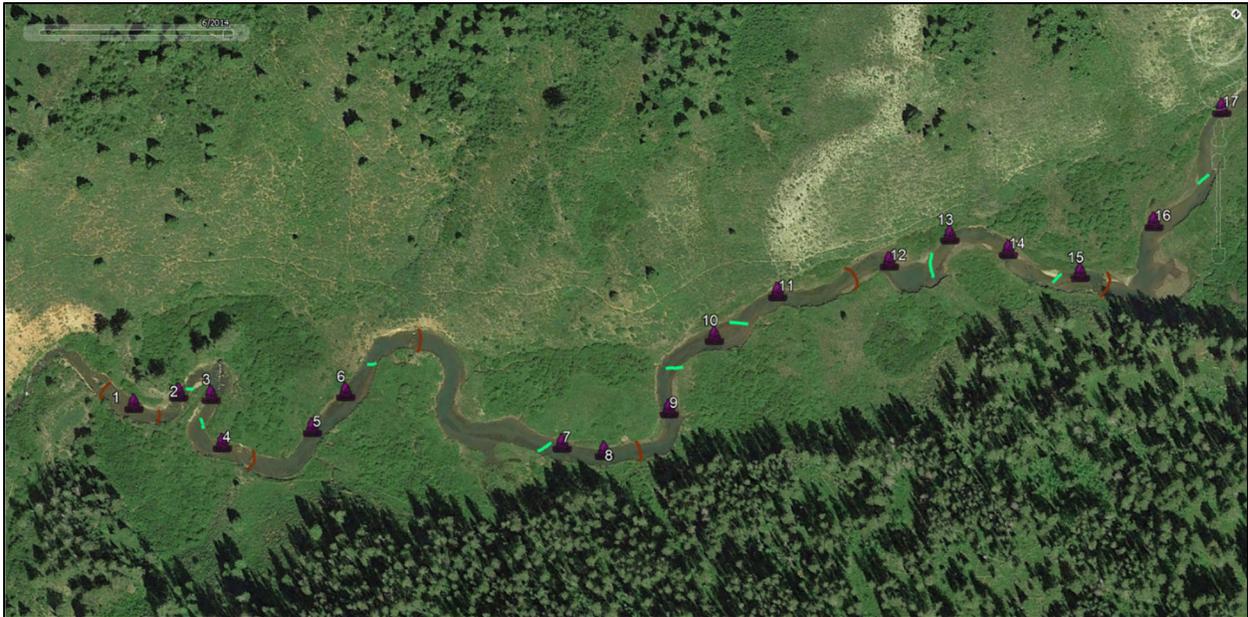


Photo 1. Phase 1, Complex 1a. **Brown=Channel Spanning PALS, Green=Bank attached PALS,  = Mid-channel PALS**



Photo 2. Phase 1, Complex 1b. **Brown=Channel Spanning PALS, Green=Bank attached PALS,  = Mid-channel ALS**



Photo 3. Phase 1, Complex 2. **Brown=Channel Spanning PALS, Green=Bank attached PALS,  = Mid-channel PALS**



Photo 4. Phase 1, Complex 3. **Brown=Channel Spanning PALS, Green=Bank attached PALS,**  **= Mid-channel PALS**

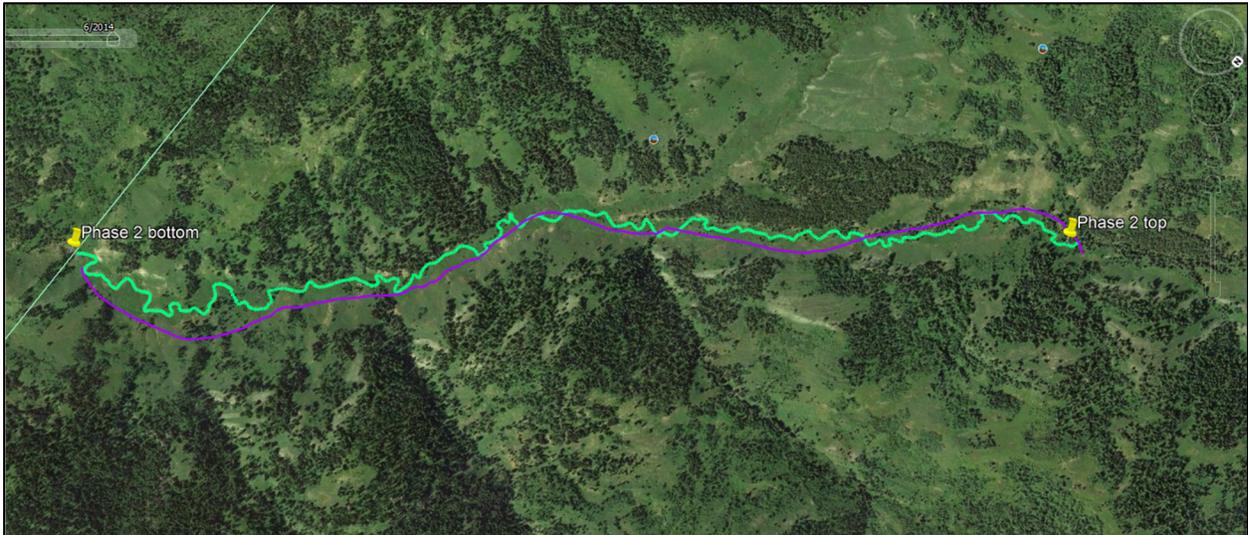


Photo 5. Phase 2 Begins above the Caribou County line in Bonneville County. Lines depict valley length vs. stream length.



Photo 6. Upper Tincup Creek, Shows the conditions that historically occurred over much of this drainage, Contrast with photos 1-4.