Twisp River Project Wood Amendment

Project Proponent Information

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Project Summary

The objective of the Twisp River Project Wood Amendment project is to use streamside felling to increase cover and instream complexity and encourage formation of pools in 8 miles of Poorman and Little Bridge creeks in the Twisp River watershed. USFS aquatic habitat surveys identified that small to large sized wood levels are below desired amounts in reaches where spawning and rearing occurs. Currently, steelhead spawn and rear in Little Bridge Creek and and resident rainbow spawn and rear in both Little Bridge and Poorman Creeks. Past riparian harvest limited potential for natural wood recruitment and the USFS identified the need to add wood to increase pool habitat, fish cover, and spawning gravel in the Mission Project. This project will fell a total of 128 streamside trees directly into 6.5 miles of stream between the two basins. Wood will increase cover and instream complexity and encourage the development of pools and the aggradation of spawning gravels in reaches used for both spawning and rearing of ESA-listed fish.

The wood amendment project would take place in Little Bridge Creek and Poorman Creek, tributaries to the Twisp River (Table 1, Figure 1-3). Both basins have experienced many decades of timber harvest, fire suppression, livestock grazing, firewood cutting, recreation impacts, and road construction. Through the Twisp Aquatic Restoration Project, the Methow Ranger District identified, developed, and completed NEPA for aquatic restoration projects in these tributaries. This proposal covers a subset of the instream wood addition work identified through the Project. The proposed treatment is to fell dead and live trees into key locations in stream reaches. All wood would be individually identified for use and directionally felled by chainsaw in locations to interact with the channels. Tree species include Douglas fir, spruce, and ponderosa pine.

Table 1. Location, size, and number of trees for felling.

Site	Specific location	mi	# trees	Size	Description
Little Bridge Creek	2.8mi - 6.8mi	4	80	S-L	up to 80 trees 6-20" dbh
Poorman	1.7mi - 4.2mi	2.5	80	S-L	up to 80 trees 6-20" dbh

Impacted Species

The lower roughly five miles of Little Bridge Creek is designated critical habitat for summer steelhead, while the lower 0.2 miles of Poorman Creek is designated critical habitat for spring Chinook salmon.

Current Situation

Restoration goals for the Twisp River Aquatic Restoration Project were identified using an assessment of limiting factors from several sources, including the Upper Columbia Biological Strategy (RTT 2014), the Upper Columbia River Spring Chinook Salmon and Steelhead Recovery Plan (UCSRB 2007), and the Salmon, Steelhead, and Bull Trout Habitat Limiting Factors report (Andonaegui 2000) as well as data from the Okanogan-Wenatchee Watershed Condition Framework update, Level II stream surveys, and field observations. The relevant limiting factor identified during this assessment is Stream Channel Complexity – past riparian harvest has reduced natural wood recruitment and instream coarse woody debris levels are low in multiple fish streams.

Past riparian harvest in these basins has limited potential for natural wood recruitment, and wood was likely removed from the creeks after timber harvest and after the 1948 flooding (Andonaegui 2000). USFS aquatic habitat surveys in 2010 and 2011 identified that small to large sized wood levels are below desired amounts in reaches where spawning and rearing occur. The USFS identified Poorman and Little Bridge Creeks as reaches with wood below desired levels and recommended adding wood to increase pool habitat, fish cover, and spawning gravel accumulation.

Proposed Action

This project will address the lack of instream complexity by felling trees directly into stream channels. We anticipate this action will increase pool frequency, cover, instream complexity, and spawning gravel aggradation, filling a gap in natural tree recruitment while forests regrow following a history of harvest (Figure 4).

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The desired amount of large wood for project area streams was set from the Okanogan Forest Plan (USDA Forest Service 1989) and from a report by Fox and Bolton (2007). From these data sources, and considering similar streams on the District in un-managed or wilderness areas, the desired density of wood greater than 6" dbh is in the range of 90 to 240 pieces per mile. Desired large, key wood pieces is a range of about 5-30 pieces per mile. Key piece sized wood for these streams is 18-20" dbh trees. Proposed quantities of small to large wood are detailed in the table below.

A similar project was undertaken by the USFS and Cascade Fisheries in Libby Creek and Buttermilk Creek in 2022, providing experience with project planning and expected outcomes. In total, 128 trees were felled along eight miles between the two basins (Figures 5-7).

References

Andonaegui, C. 2000. Salmon, Steelhead and Bull Trout Habitat Limiting Factors - Water Resource Inventory Area 48. Final Report, Washington State Conservation Commission.

Fox, M., and Bolton, S. 2007. A Regional and Geomorphic Reference for Quantities and Volumes of Instream Wood in Unmanaged Forested Basins of Washington State. North American Journal of Fisheries Management **27**: 342–359. doi:10.1577/M05-024.1.

RTT (Regional Technical Team). 2014. A biological strategy to protect and restore salmonid habitat in the Upper Columbia Region. A report to the Upper Columbia Salmon Recovery Board.

UCSRB (Upper Columbia Salmon Recovery Board). 2007. Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan.

USDA Forest Service. 1989. Final Environmental Impact Statement, Land and Resource Management Plan. USDA Forest Service, Pacific Northwest Region, Okanogan National Forest. Available from http://www.fs.fed.us/r6/wenatchee/projects/plans.shtml.

Figures

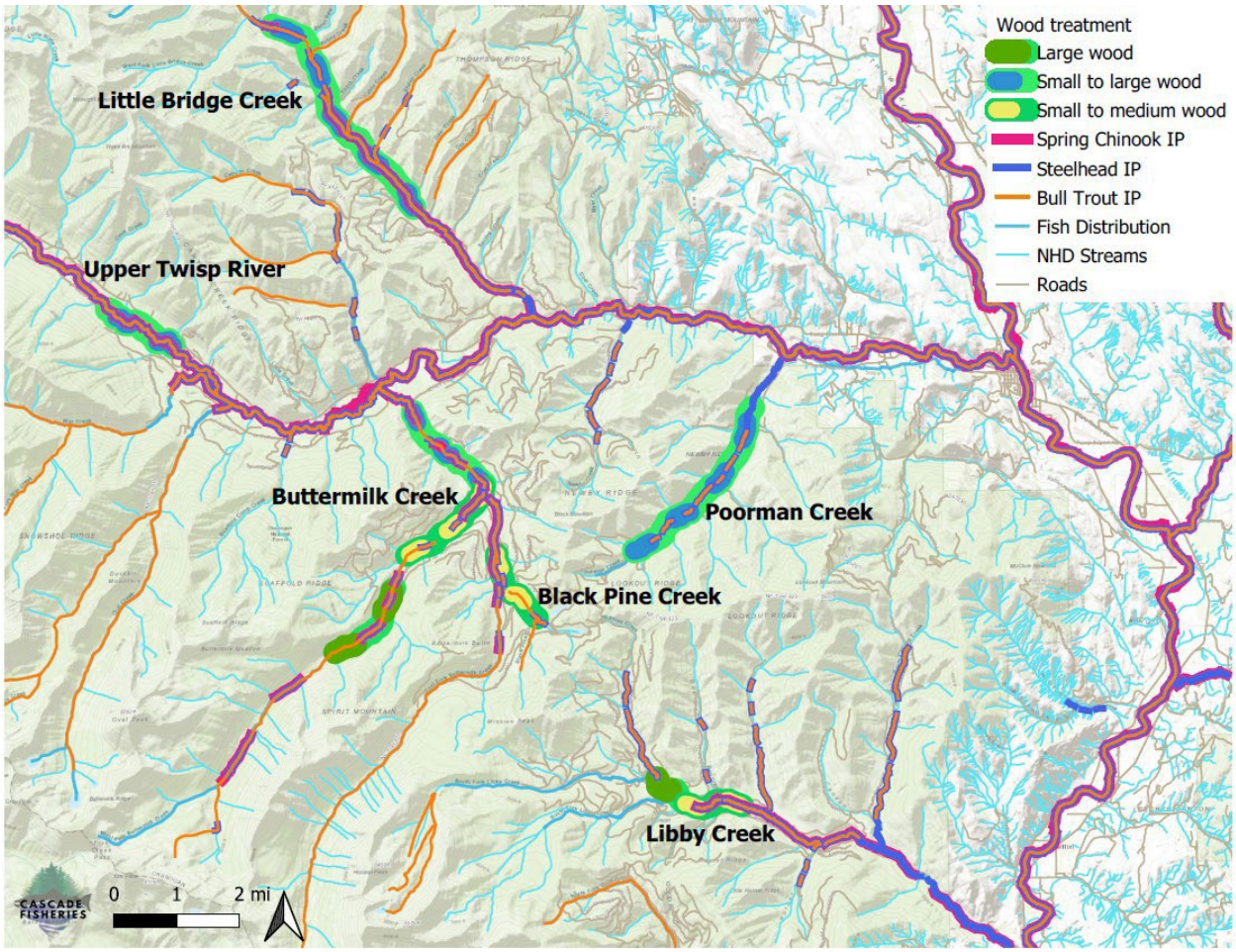


Figure 1. Overview Map. This funding request covers identified wood project areas on Little Bridge and Poorman Creeks. CF is currently working with the USFS to implement similar work in the Buttermilk and Libby Creek basin, which were identified as aquatic restoration projects in the USFS Mission Project.

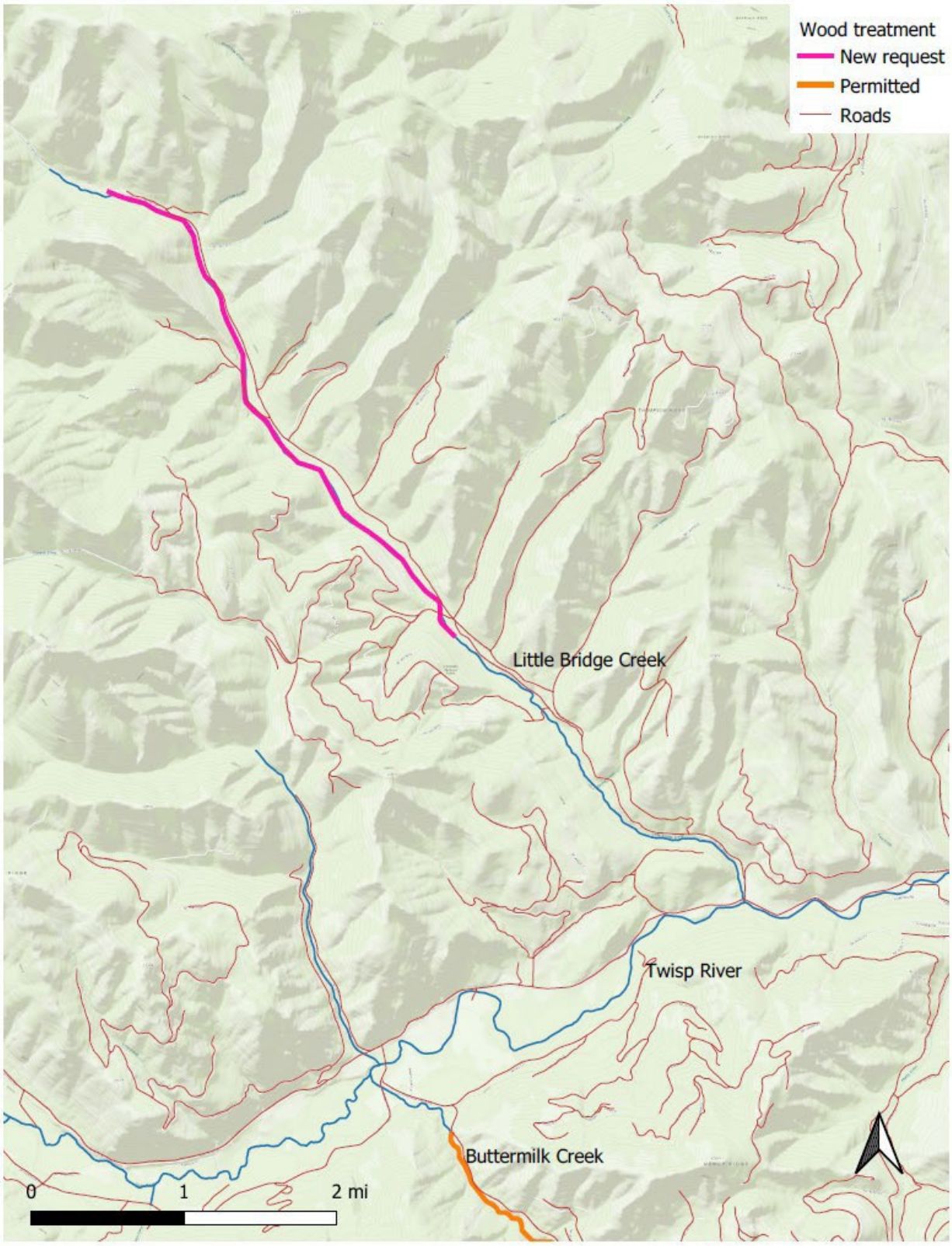


Figure 2. Project Area Map – Little Bridge Creek wood treatment would place 80 trees sized 6-20” dbh into 4 miles of stream.

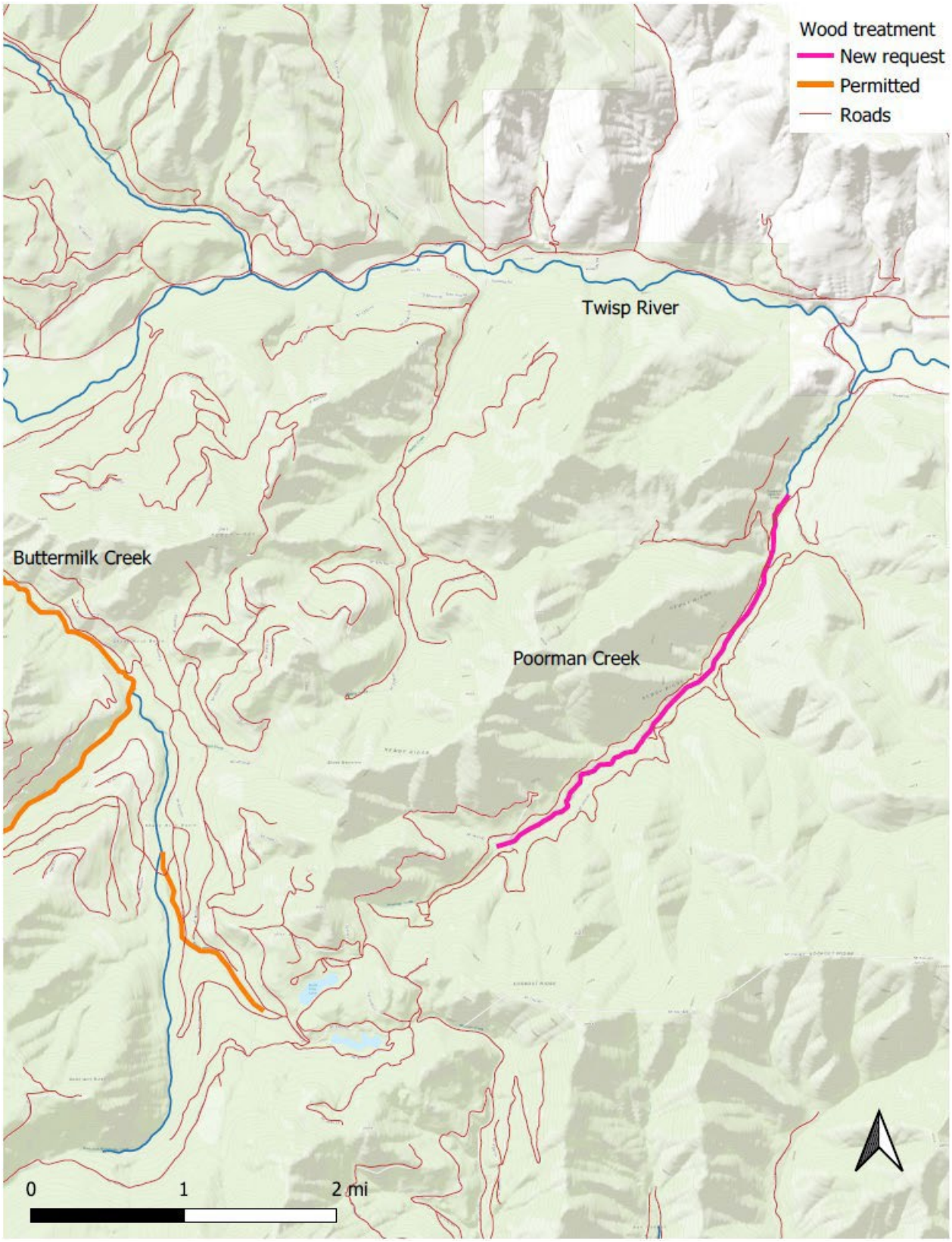


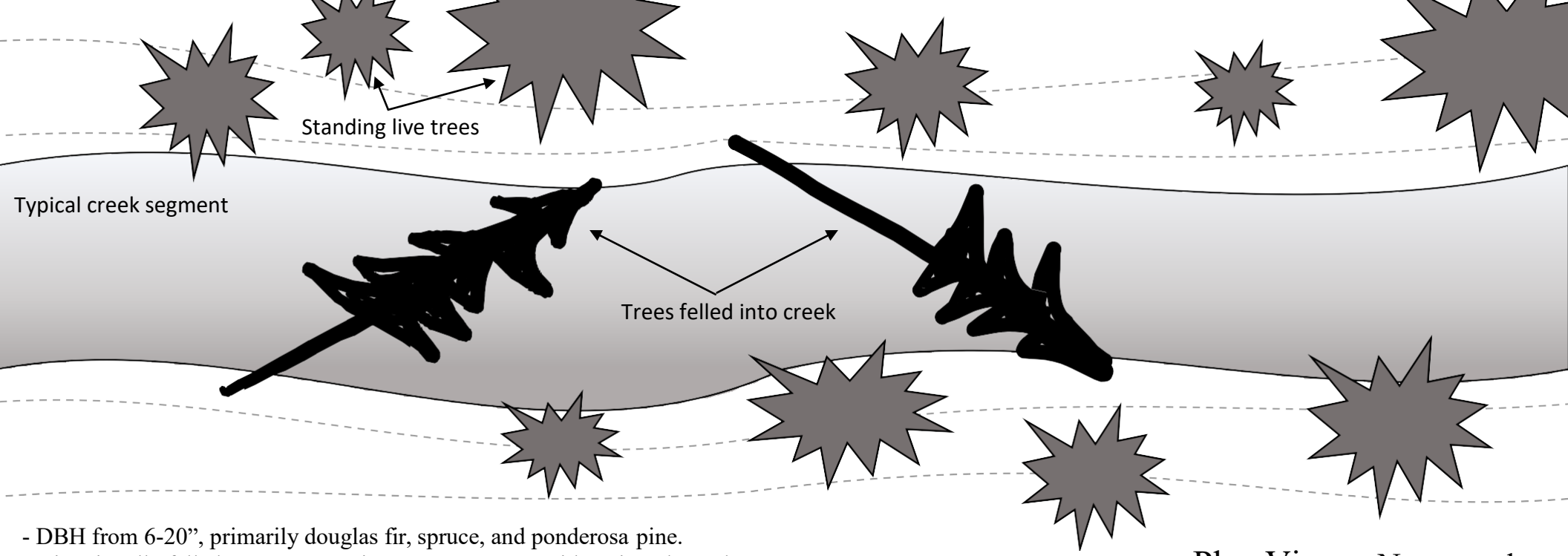
Figure 3. Project Area Map – Poorman Creek wood treatment would place 80 trees sized 6-20” dbh into 2.5 miles of stream.

Figure 4. WF Buttermilk example jam, desired conditions

Figure 5. Example of wood felled on Buttermilk Creek.

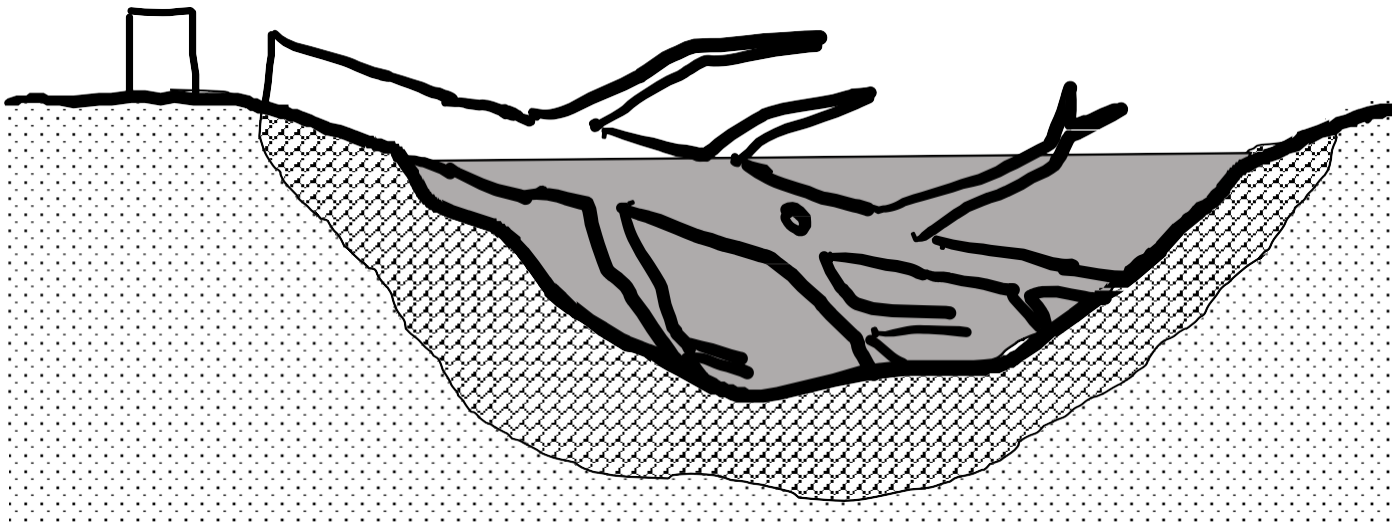
Figure 6. Example of wood felled on WF Buttermilk Creek.

Figure 7. Example of wood felled on Libby Creek.



- DBH from 6-20", primarily douglas fir, spruce, and ponderosa pine.
- Directionally felled to ensure maximum engagement with active channel.
- Location and direction of felling selected to promote pool formation, instream cover, accrual of gravel, and capture of mobile wood.

Plan View – Not to scale



Twisp River Wood Enhancement Project

Felled Streamside Tree Typical

Profile View – Not to scale