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Assessment of Riparian Ecosystem Structure in Restored Reaches of Ninemile Creek

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ECOSYSTEM SCIENCE & RESTORATION PROGRAM
W.A. FRANKE COLLEGE OF FORESTRY & CONSERVATION
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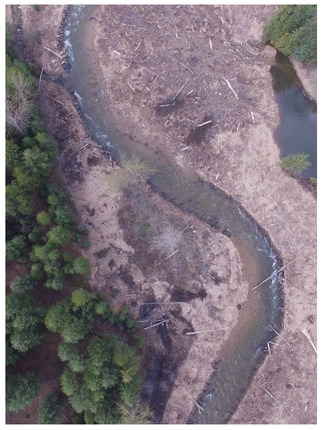
3rd Order Stream Ecosystems

- Spatially and temporally dynamic
- Characterized by seasonal overflow into the floodplain
- Structure heavily influenced by the biotic components
- Floodplain soil structure fundamental to overall function of the system

Trout Unlimited: Restoring the River Channel and Floodplain



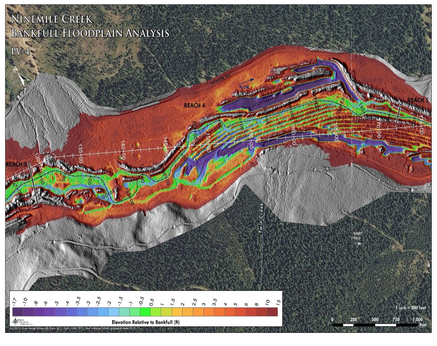
- Dredge piles removed
- Channel reconnected to the floodplain
- Banks stabilized
- Native seed mix applied
- Willows planted
- Meander reintroduced

Assessing Beaver Resettlement

- Record beaver structure coordinates along reference and restored reaches
- Create a map of structure locations

Legacy of Placer Mining on Ninemile Creek

- Dredge piles disconnected the main channel from the floodplain
- Increased velocity
- Degraded habitat



Objectives

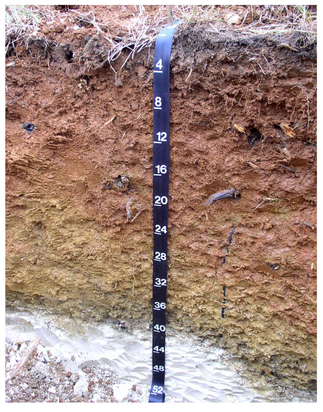
Produce a multi-variable monitoring plan and implement the first year of monitoring to assess how restoration efforts by TU are impacting the trajectory of Ninemile Creek.

The monitoring protocol will include:

- A vegetation survey
- Beaver dam and lodge mapping
- Examination of floodplain soil texture and organic matter

Assessing Floodplain Soils

- Obtain composite soil samples for each reach
- Determine soil aggregate stability
- Measure nutrient content
- Establish soil texture profile



How a Straightened Channel Impacts Ecosystem Structure:

- Loss of functional floodplain and channel sinuosity
- Impaired seasonal geomorphology
- Makes aquatic habitat unsuitable for coldwater fish

Assessing Riparian Vegetation

- Line Point Intercept
- Record plant growth form
- Record basal stem diameter of woody plants
- Measure willow stem diameter at breast height

Expected Benefits

- Inform Trout Unlimited on the efficacy of their restoration efforts on Ninemile Creek
- Provide usable data for the scientific community on riparian monitoring following restoration projects on degraded stream ecosystems