

## Gordon Creek Enhancement Project

**PRIMARY RESTORATION OBJECTIVE:** POST-FIRE RECOVERY

**STRUCTURE TYPE & COUNT:** 16 ± 4 BEAVER DAM ANALOGUES (BDAS)

**OTHER RESTORATION ACTIONS:** RIPARIAN PLANTING

**STREAM LENGTH:** ~2000 M

### **CURRENT CONDITION:**

Most vegetation along the stream reach burned in the 2021 Lytton Creek Fire Complex. There is some regeneration of herbaceous species. Sections along the stream reach are in the early stages of channel incision and may become disconnected from their floodplains. The fire has contributed to a flashy stream system, with a greater frequency and magnitude of high flow events, and more severe summer low flow periods.

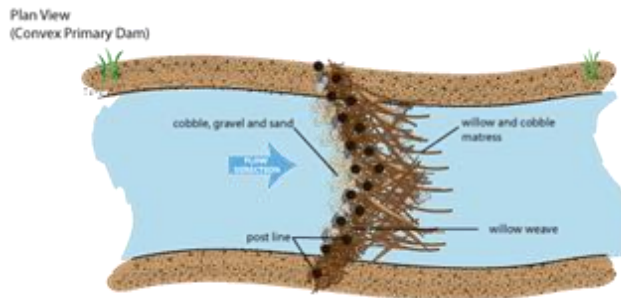
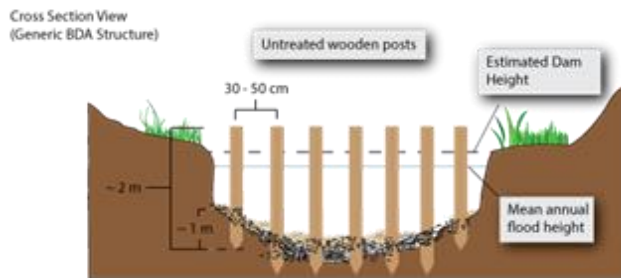
### **ANTICIPATED CONDITION:**

The project uses BDAs to slow water velocity, promoting sediment aggradation and limiting the potential for channel incision to worsen. BDAs will also increase water residence time, supplementing flows during summertime lows. Planting of deciduous species along the riparian corridor will supplement natural tree regeneration, increase soil and streambank stability, and potentially act as a food source encouraging future beaver establishment.



## BEAVER DAM ANALOGUES

Beaver dam analogues (BDAs) are human-made structures designed to mimic the form and function of natural beaver dams. They can be constructed by hand, using a hydraulic post-pounder, or with heavy machinery. Untreated wooden posts are driven into the streambed and locally sourced vegetation is then woven through these posts, creating a lattice. Like how beavers build their dams in the wild, BDAs typically have sediment and cobbles packed on the upstream face of the dam, and a mattress made of branches parallel to the direction of flow on the downstream side of the dam to protect the structure from scouring. The design, construction techniques, and fill materials for BDAs can all be adapted based on site conditions and restoration objectives.



Schematic for a BDA (left, Wheaton et al. 2019). BDA construction using a post-pounder and a vegetation weave (right, Koenigsberg 2018).



A completed BDA (US Fish and Wildlife Service 2023).

## ADDITIONAL SITE PHOTOS



Sections of the stream reach have good herbaceous regeneration post-fire. However, limited instream complexity and summer low flow deficits impact aquatic habitat value.



Signs of incision is evident in the downstream reach, with steep vertical stream banks (*left*). Aerial image of the restoration area (*right*).