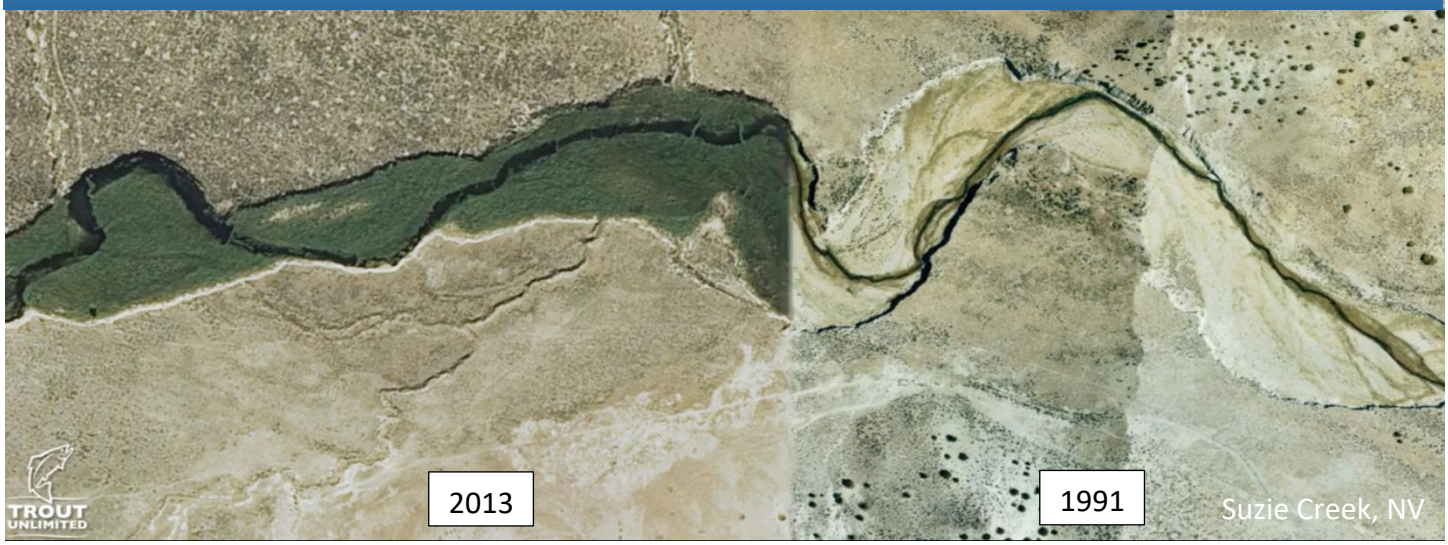
Low-Tech Process-Based Restoration (LTPBR):

Horseshoe - Round Meadow Restoration Pilot Project

A demonstration area for the:

Kern Plateau Meadow Restoration Project

Trout Unlimited and Partners

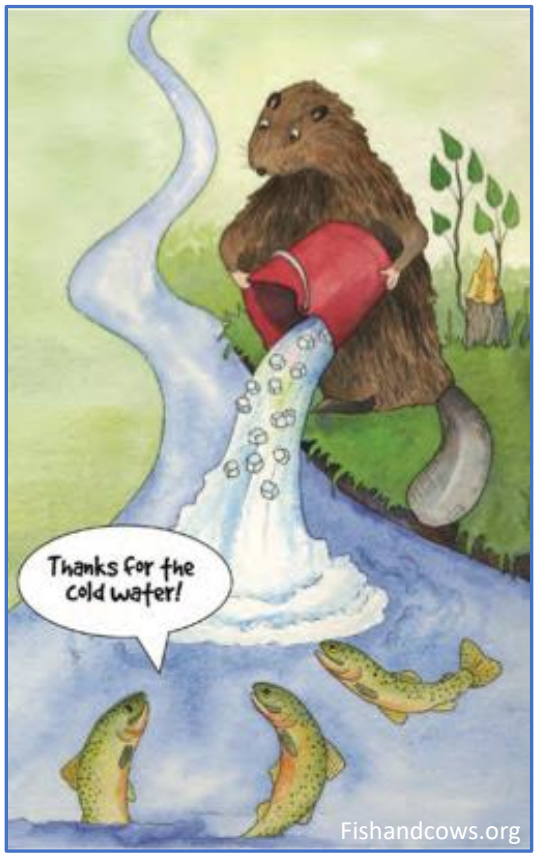


LTPBR BASICS

- "Let the Water Do the Work"
- Simple, low-cost, and hand-built (wilderness friendly)
- Re-introduces wood and other structures that mimic beaver dams
- Uses locally sourced vegetation (conifer, sagebrush, willow)

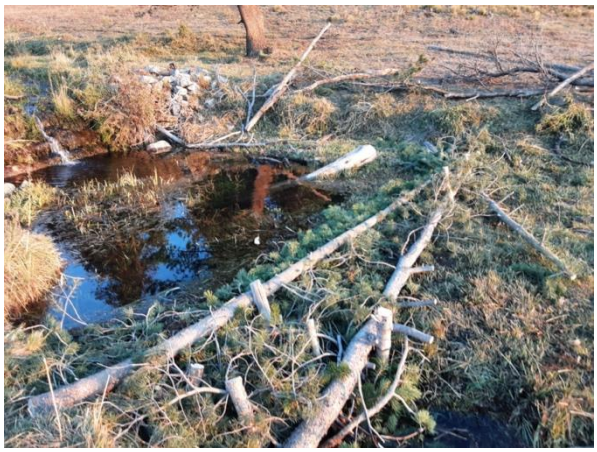
LRPBR BENEFITS

- Structures can store 7-22% of spring runoff, increasing late season water availability
- Reduce erosion and stream incision
- Increase resilience: Protects the meadows from fire and drought
- Improved instream and riparian habitat for fish and wildlife (water is life!)
- Cooler stream temperatures for CA golden trout
- 10-40% increase in floodplain vegetation productivity

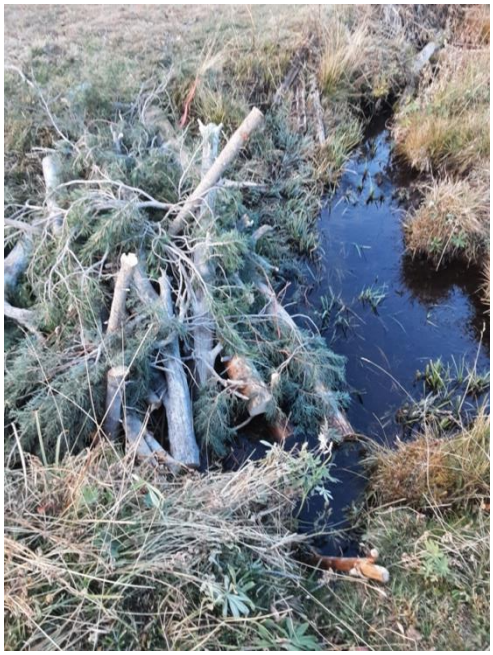


Meadow streams are fed during floods and spring snowmelt, which wash down the dirt, rocks, and wood that they need to stay healthy. These natural elements slow down the stream's flow, spreading water across the meadow floodplain where it can be stored later in the year as groundwater. This keeps our meadows green, and streams wet.

HORSESHOE-ROUND MEADOW PILOT PROJECT



- Located on parcel owned by Los Angeles Dept of Water and Power within Golden Trout Wilderness, INF
- Restoration structures, including Beaver Dam Analogs (BDA's), Post-Assisted Log Structures (PALS), and sedge plugs, will be implemented as "complexes"
- Each "complex" has it's defined purpose:
  - Sediment Recruitment: occurs in confined valley settings with steeper channel gradients, PALS force channel widening and create a local source of sediment to deliver to downstream reaches and force channel aggradation.



  - Aggradation: BDAs and PALS are intended to capture sediment and raise the channel bed elevation. Aggrading the channel leads to reconnecting the channel to the meadow floodplain (below).
  - Lateral Connectivity and Pond Habitat: In areas where the original floodplain remains accessible, or has an inset floodplain, we rely on channel-spanning PAL's and BDA's to force connectivity to adjacent surfaces. Depending on the current channel bank height, lateral connectivity may be achieved at baseflow conditions, or only during high flow conditions. The use of channel-spanning structures also forces the creation of inundated aquatic habitat (i.e., ponds and shallow backwaters) benefiting fish and other aquatic species.
  - Headcut Mitigation: Where flow is already channelized before reaching a headcut, we plan on using BDAS to disperse flows before they reach the headcut. In areas where flows to a headcut are characterized by sheetflow and where it is channelized below, we plan on 1) adding cobble at the base of the headcut to prevent scour and 2) building a BDA within the downstream channel to back water up to headcut to further dissipate plunging flows and 3) using multiple BDAs/PALS to capture sediment and aggrade the channel further downstream.