STARVATION FLATS
MOUNTAIN MEADOW
RESTORATION

River Restoration NW - 2019
DALLAS REED
Starvation Flats

Project Area

- 2,500 acre meadow complex
- Contributing Area to Dry Creek and Satus Creek
  - ESA Listed Steelhead
  - Supports highest amounts of Redds

Project Goals

- Improve quantity and quality of water downstream for ESA salmonids
- Restore meadow conditions to support culturally important plant foods that have declined as a result of meadow disturbance.
Land Use Impacts

- Starvation Flats –
  - Heavy Livestock Grazing since 1800’s
  - Predator Control
  - Road and trail development
Watershed Assessment

- YN teamed up with Inter-Fluve to complete a comprehensive meadow assessment
- Long-term Restoration Plan
- Identified priority areas
Past Grade Control Efforts -Check Dams-
Flanking and Failure

- Flanking
- Crest failure
- Dam failure
Historic Meadow Conditions

- Project area was historically a mesic seasonal meadow that supported diverse vegetation and game species
- Water remained on the surface of the meadow with minimal channel incision
- Conifers historically found only on perimeter of meadow
Pilot Meadow Project - 2017

Pre-Construction Conditions
Pre-Construction

May

September
Construction Design

and
Construction Plans

- Gradient
- Downstream Valley constrictions
- Pre-existing Fence to limit Grazing
Construction Phase

- Confined workspace
- Minimize Impact to cultural and natural resources
Erosion Control Fabric
Valley-wide grade control
Constructed Riffle

2017 - Constructed Riffle Crest

2018 - Riffle with willow
Treatment Results

- Surface wetting
- Increased water retention
- Extended seasonal wetting
Post Construction

October 2018
Starvation (U2613) (6/27/2017 – 1/18/2019)

**Water Monitoring Data**

**Water Depth above sensor**

- **2017** = 23.7
- **2018** = 13.9

**Total Precip Jan – July**

- **2017** = 23.7
- **2018** = 13.9
Grazing Impacts
What’d we learn?

- Groundwater elevations increased
- Soil moisture increased
- We need a Solid Fencing Plan
- Grazing Plan
- Over-Build – Engineering Approach

Next Steps at Starvation Flats

- Improve Fencing and grazing strategy at the site
- Continue to implement long-term restoration strategies throughout the meadow complex