

# Re-wetting the Sponge: Meadow restoration in the Upper Gunnison River Basin

*A Collaborative Project of the  
Gunnison Climate Working Group*

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Sustaining Watersheds Conference

Avon, CO

October 10, 2018





# Thanks to Partners & Supporters!



Ranchers  
Terra Foundation



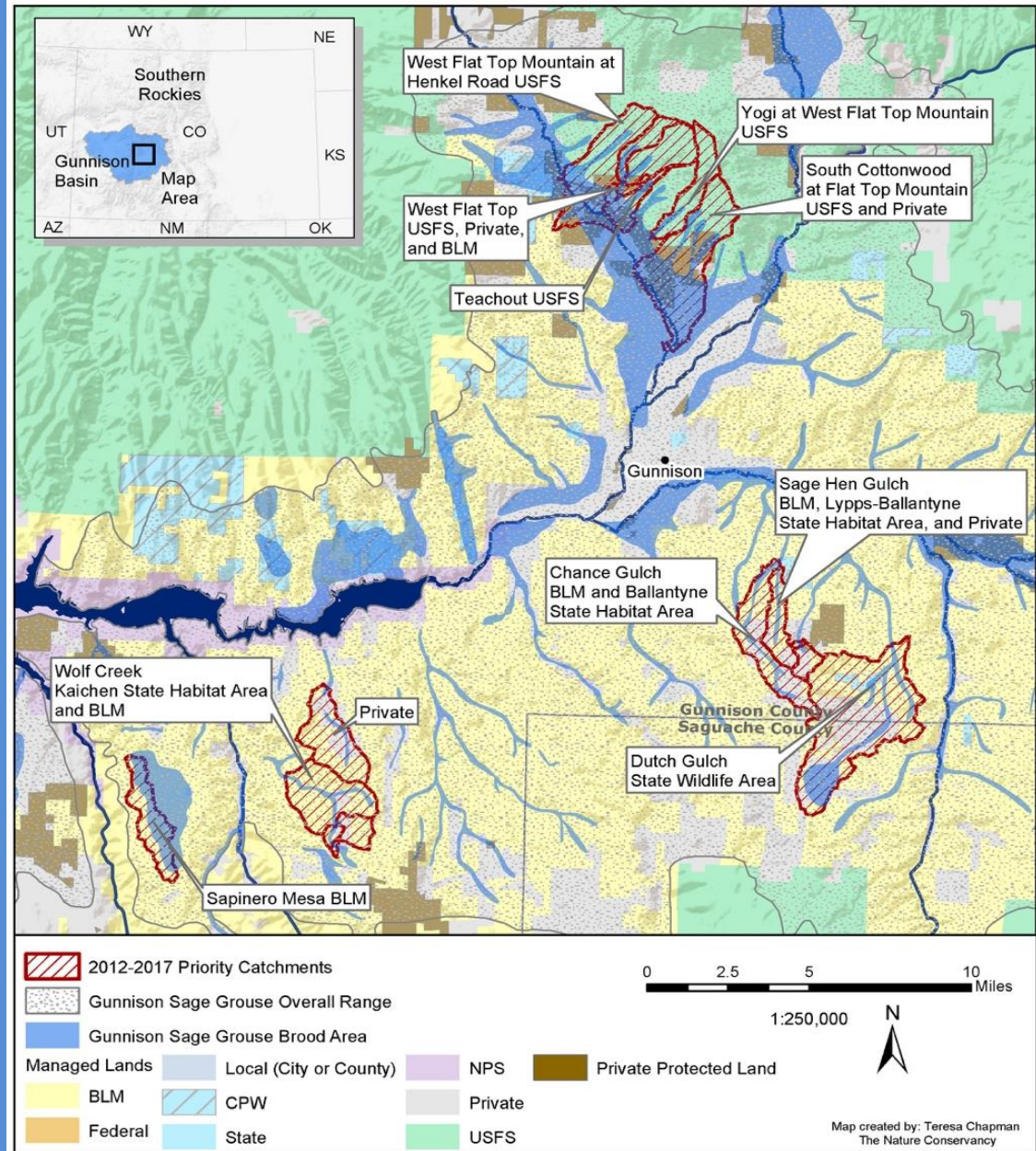


# Outline

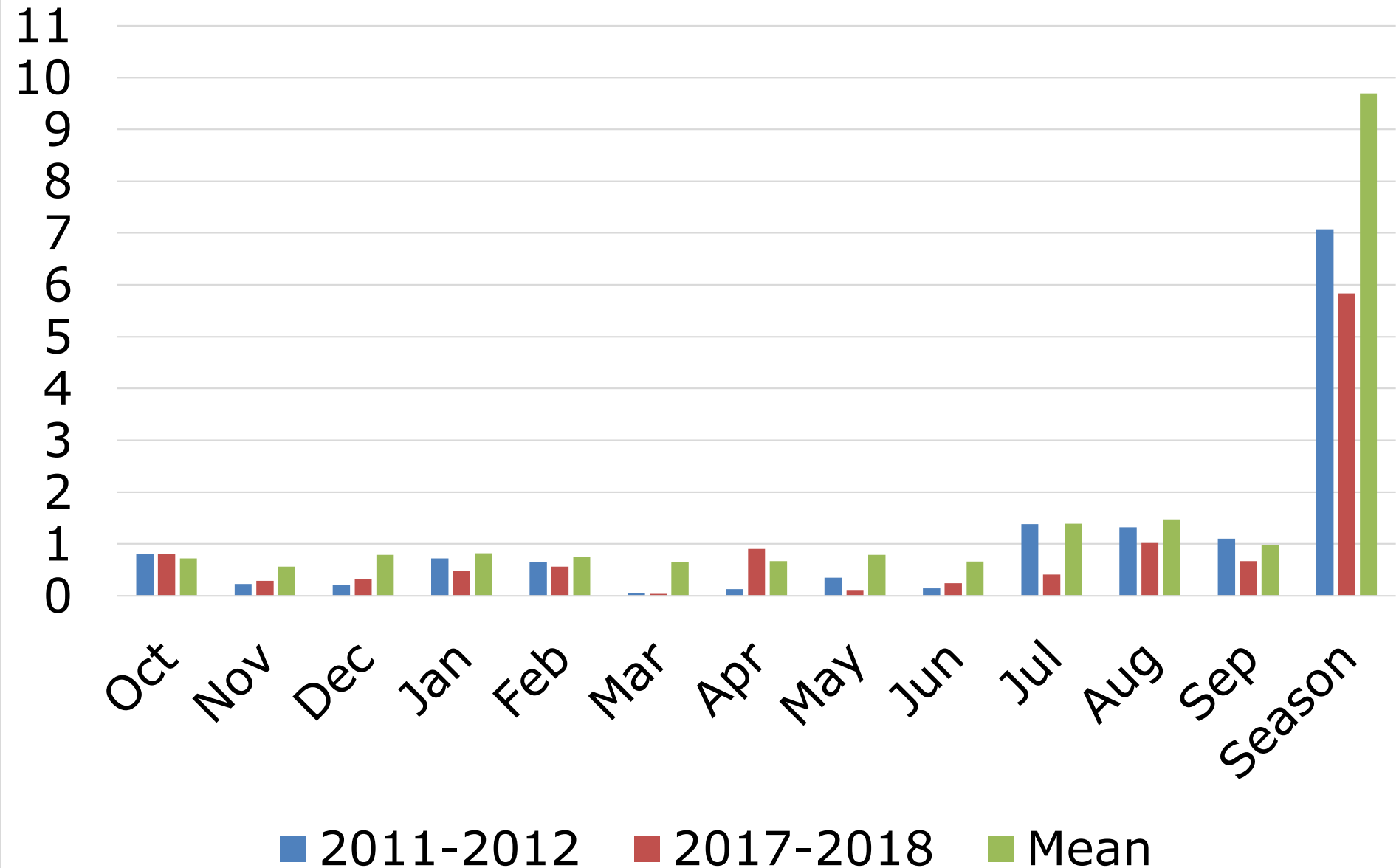
1. Background & Goal
2. Why?
3. Techniques
4. Monitoring & Response
5. Questions



# Headwaters of the Gunnison River and Colorado River



# Gunnison, CO Monthly Precipitation (inches)



# Goal

Build resilience by restoring hydrologic function of wet meadows to help the Gunnison sage-grouse, other species & ranchers adapt to a changing climate

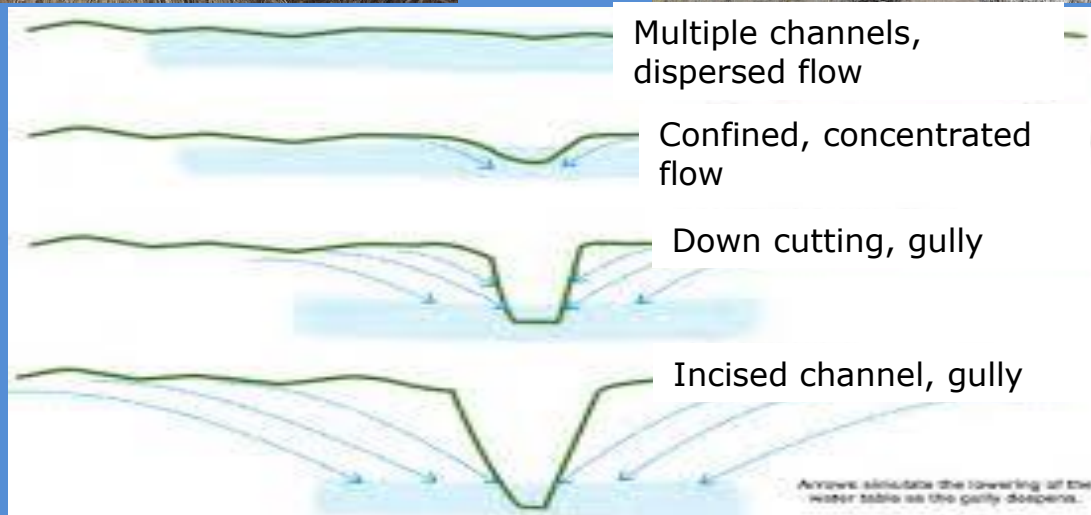




*Meadows are sponges, absorbing water as snowpack melts and holding that water like an underground water tower. They also capture, store, and slowly release water from monsoonal precipitation.*

- Provide clean water for wildlife and healthy habitat for aquatic animals.
- Provide an important breeding ground for invertebrates that form one base of the food web.
- Provide food and habitat structure for small mammals, elk, deer, neo-tropical migratory birds, Gunnison sage-grouse, and forage for livestock.
- Recharge shallow aquifers.

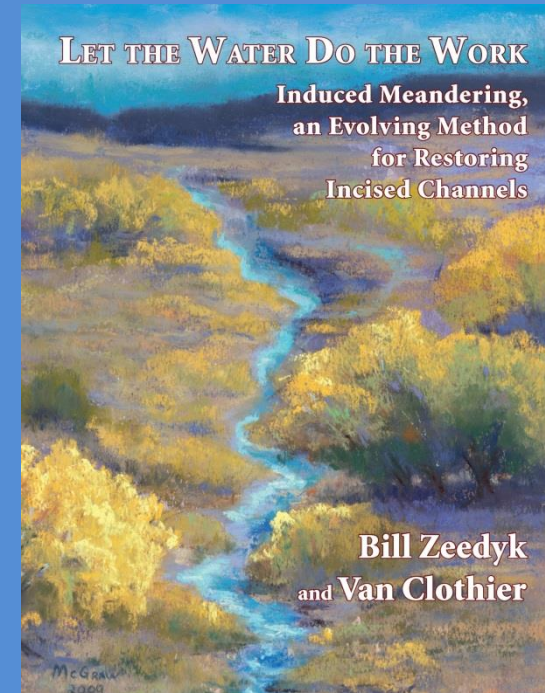
# Problem?





# Science/Techniques

- Grade Control/Old Paradigm
  - Hardened Low Water Crossing
  - Lay Back
  - Log and Fabric Step Falls
  - One Rock Dams (ORD)
  - Rock Run Down/Rock Mulch Rundown
  - Zuni Bowl
- Reconnection /New Paradigm
  - Filter Dam
  - Hardened Low Water Crossing
  - Media Luna
  - ORD
  - Plug and Spread
  - Sod Dams
  - Worm Ditch
- Drift Fences/Behavioral Change





# Filter Dam-Chance Gulch

**Post Construction 2016**



**May 2017**



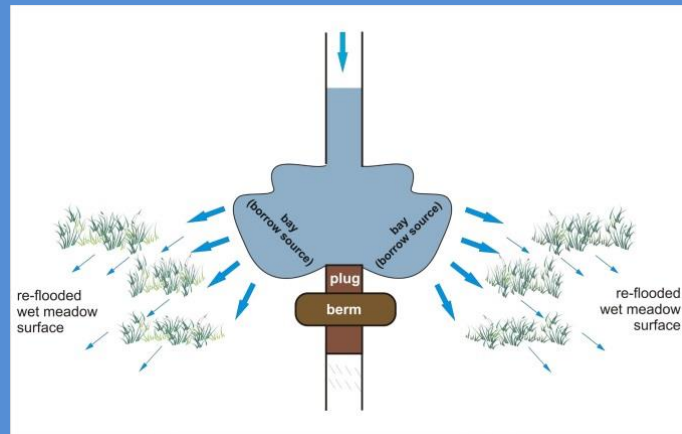
**April 2018**



**August 2018**







# Sapinero Mesa-September 2018

## Plug and Spread





# Redden-Plug and Spread October 2016



# Chance Gulch-Plug and Spread

**Construction (10/16)**

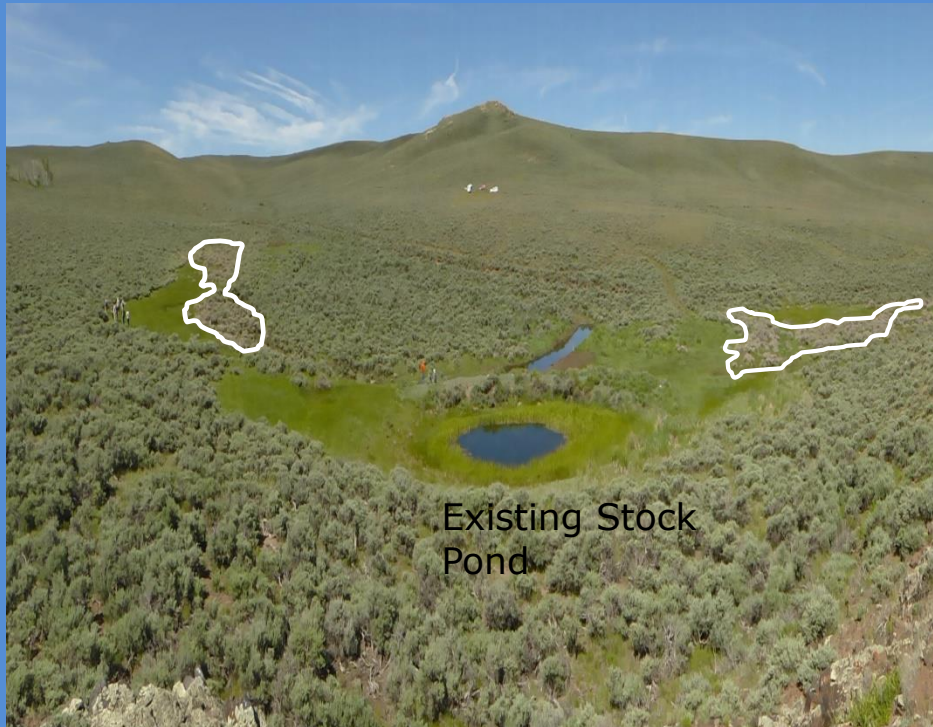


**Contour Swale (06/17)**



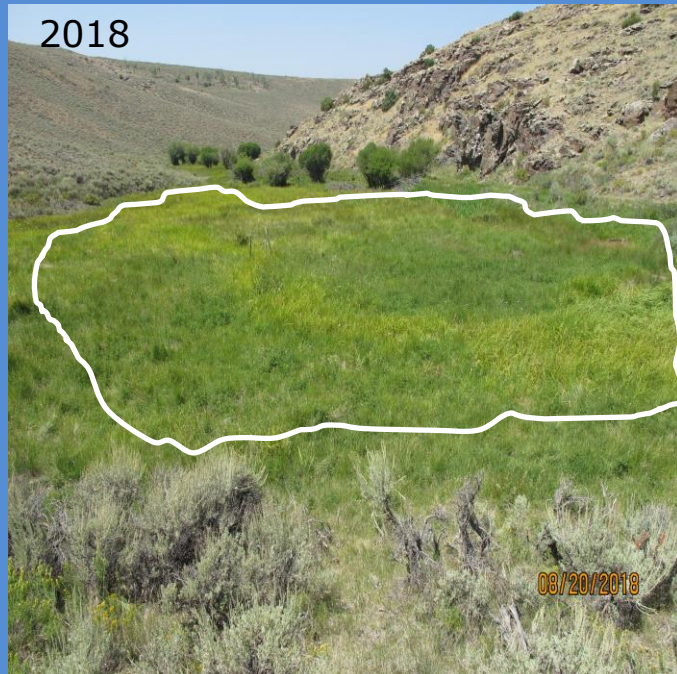
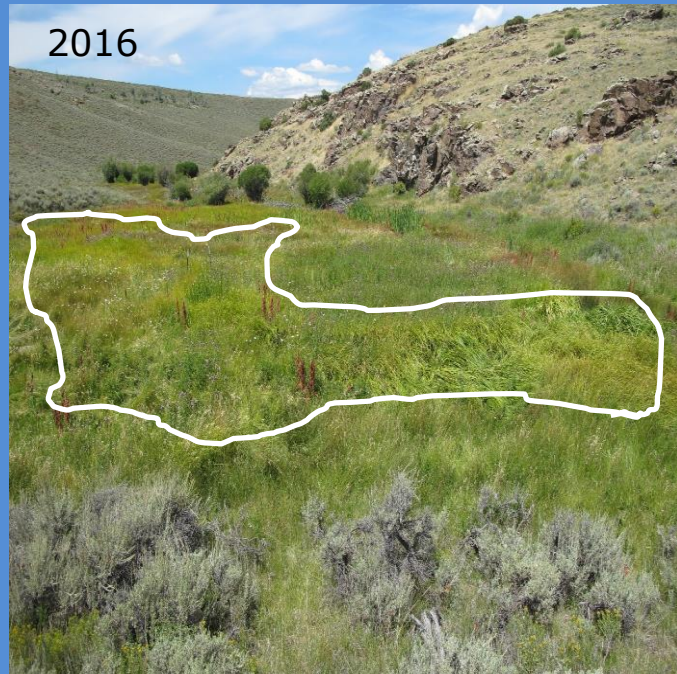


# Re-Connect Paradigm Plug and Spread



The sagebrush had invaded the former wetland due to down cutting. The plug and spreads were built in the fall of 2016 and by June, 2017, the wetness had increased enough to kill sagebrush.

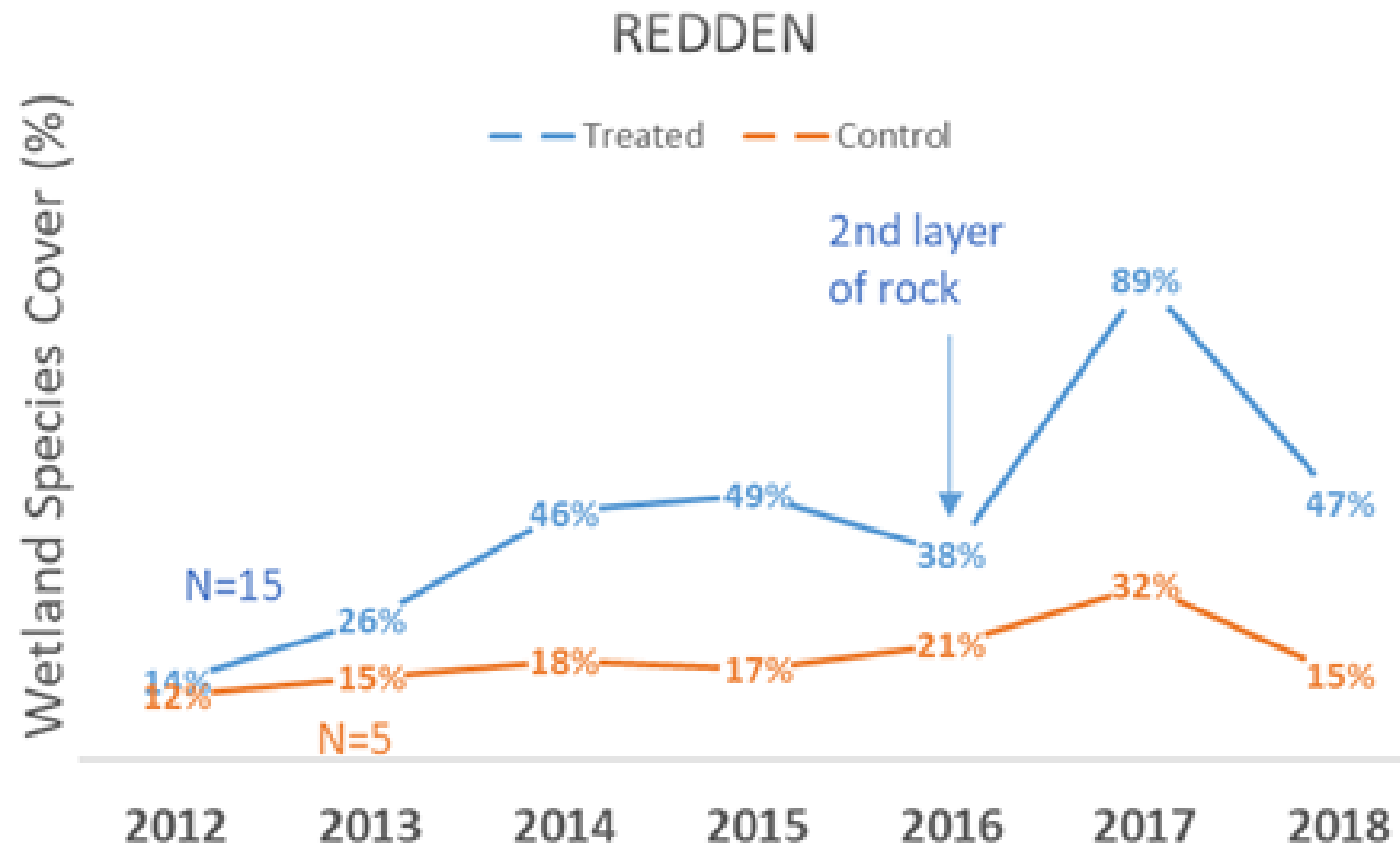




The white polygon represents the wetland area. In general the wetland area occupied approx. 25% of the floodplain in 2012 and around 95% in 2018.



# Redden-Private







THANKS TO OUR STONE MASONS,  
ROCK HAULERS, AND CREW LEADERS





# 2012-2017

## Accomplishments

- NRCS adopted these practices in their restoration handbook.
  - Range Technical Note No. 40
- Installed 1,350 projects (rock structures, earthen structures, and drift fences).
- Treated 41 stream miles.
- Treated 287 acres of mesic meadow and wetland habitats.
- Benefited 1067 acres of brood-rearing habitat for Gunnison sage-grouse.
- Monitoring: 218 line point intercept transects and 587 photo points at nine priority sites.
- Empowered hundreds of youth (16-25).

# Questions



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