



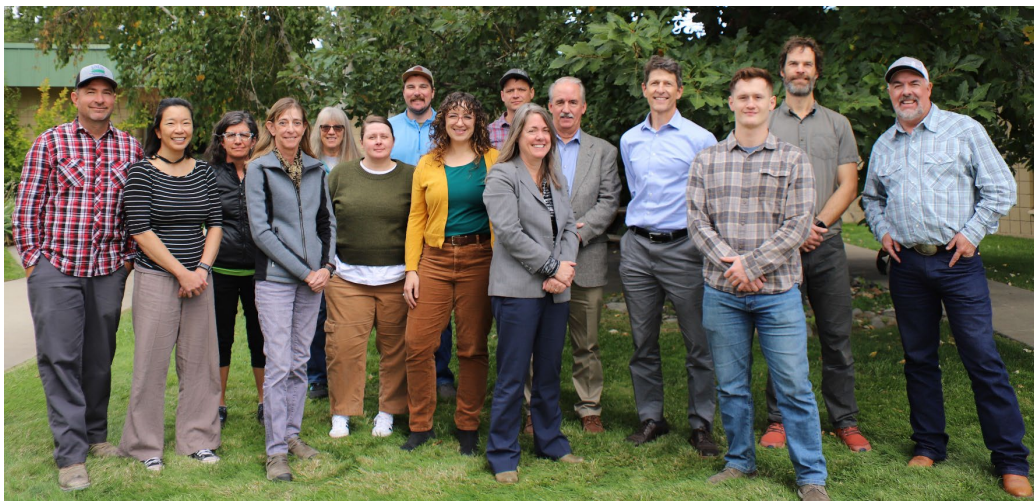
Agricultural  
Research Service  
Great Basin Rangelands  
Research Unit, Reno NV

# GBRRU NEWS

[www.ars.usda.gov/pacific-west-area/reno-nv/great-basin-rangelands-research/](http://www.ars.usda.gov/pacific-west-area/reno-nv/great-basin-rangelands-research/)

Volume 1  
Fall 2023

Meet the unit  
(left to right)



- Dan Harmon
- Sandra Li
- Dr. Beth Newingham
- Dr. Keirith Snyder
- Fay Allen
- Jill Daubert
- Jacob Phillips
- Ranae Sullivan
- Brian Howard
- Dr. Tara McHugh (Area Director)
- Dr. Fred Pierson (Area Assoc. Director)
- Dr. Peter Vadas (NPS Leader)
- Tyler Pelletier
- Kirk Tonkel
- Charlie Clements (Acting Research Leader)

GBRRU would like to thank Dr. Beth Newingham for her detail as acting Research Leader, thank you Beth! And welcomes Charlie Clements as he begins his appointment as acting Research Leader.

### Employee Highlights



Kirk Tonkel received his 15 years of service recognition and Fay Allen (above) received her 40 years of service award! Fay has been with GBRRU since 1983! Her favorite part of the job has been all the amazing people she has met along the way.

In September, our research unit was lucky enough to have a visit from our Area Office and our National Program Leadership. We visited some field sites where we discussed our ongoing research.

Dr. Keirith Snyder and Kirk Tonkel discuss their work with juniper management issues.



(Right above) Charlie Clements talks about his work with range improvement seeding research and the importance of choosing the right species for a site.



*Successful conversion from cheatgrass to perennial grass dominance.*

## SNOW MELT!

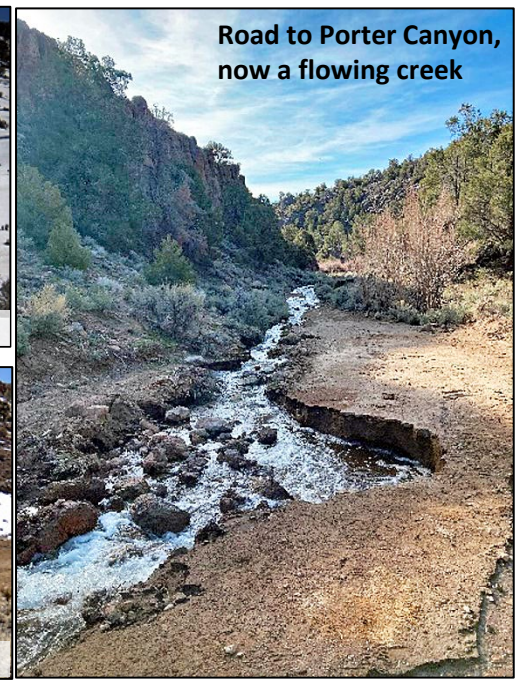
A very wet 2023 water year impacted many field sites where GBRRU researchers and collaborators conduct research. Porter Canyon Experimental Watershed was no exception. The snow melt runoff in early spring, recorded by a SNOTEL station, measured 29 inches of snowmelt in just 17 days. Our on site phenocams captured the rapid snow melt that occurred (photo right). The only road to the Porter study sites, through a narrow canyon at the mouth of the watershed, completely washed out (Photo far right). Washouts and head cuts proved to be a big problem this year at many sites, and the GBRRU team have had to often hike in to record data until the roads can be repaired.



April 9, 2023



April 23, 2023



Road to Porter Canyon, now a flowing creek



## Stakeholder Collaboration

In September 2023, the GBRRU, in cooperation with Nevada Department of Wildlife (NDOW) and the Vya, NV Conservation District conducted a habitat improvement effort using a Lawson Aerator on approximately 65 acres of decadent big sagebrush. The goal of this mechanical treatment is to improve the herbaceous component of the habitat while also increasing the diversity and age structure of the plant community. A Lawson Aerator was used to thin the sagebrush and release perennial grasses and forbs. The GBRRU designed three seed mixes to be tested at the site to provide much needed resources for wildlife and livestock.

## Compost Application on Rangelands

Applying compost on rangelands is becoming a common practice to improve soil organic matter and aggregate stability, sequester carbon, and thus increase forage production. However, there is little science on the degree to which compost application affects soil health, plant production, and potential water quality issues. In October 2023, GBRRU and colleagues from PWA-ARS, the Natural Resources Conservation Service, the University of Nevada, Reno, and a local rancher deployed an experiment on a northern California ranch to answer these questions. Compost was applied at two rates and a rainfall simulator mimicked 2 and 3.5 inches of rain per hour. Results will help ranchers determine appropriate compost application rates for improving soil health and forage production, as well as evaluate whether storm events may produce negative consequences of sediment and nutrients in runoff. Stay tuned for results!

