

Upper Gunnison Basin Riparian Restoration & Resilience Project

A Collaborative Approach to Preparing for Change

The climate of the Southwestern United States is warming and is projected to get warmer in the coming decades. Colorado is experiencing larger and more severe wildfires, prolonged drought, earlier snowmelt, high tree mortality, increases in dust storms, and changes in the timing of plant and animal life cycles. Climate scientists predict more summer heat waves, decreasing late-season snowpack, declines in river flow and soil moisture, and longer and more frequent droughts. These changes put people, plants, animals and their habitats at risk.

Actions are needed to help ecosystems and species cope with a changing climate. The Gunnison Climate Working Group is working to prepare nature and people for change in the Gunnison Basin of Colorado. The measures we take today to build ecosystem resilience will not only benefit natural resources, but will also protect the foundation upon which the Gunnison Basin's agricultural and recreational economies depend.

Gunnison Climate Change Partnership

The Gunnison Climate Working Group is a public-private partnership working to reduce the impacts of climate change on nature and people in the Upper Gunnison Basin. This project is part of a larger effort by the partnership aiming to increase understanding and awareness of the threats posed by climate change, identify and prioritize adaptation strategies, and promote coordinated action to prepare for change across jurisdictional boundaries.

Gunnison's Critically Important Habitats

Wet meadows and riparian areas provide critical brood-rearing habitat for Gunnison Sage-grouse (*Centrocercus minimus*), proposed for listing as endangered under the Endangered Species Act. These habitats are also important for numerous other species, including neo-tropical migratory birds, elk, and mule deer, as well as to ranchers for livestock grazing. A number of wet meadows and riparian areas, already compromised by erosion and lower water tables, are likely to be further altered by drought, invasive species, and high intensity rainstorms associated with a changing climate.

A Hands-On Natural Solution

To address these challenges, the partners implemented a two-year demonstration project that used innovative, yet simple, restoration methods to enhance the resilience of riparian and wet meadow habitats. Restoration expert Bill Zeedyk, Zeedyk Ecological Consulting, designed restoration methods, consisting primarily of rock structures. Local partners, agencies, ranchers and universities have been actively engaged, contributing in-kind services, working across agency and property boundaries, and collaborating to achieve common conservation outcomes. Youth field crews, students, ranchers and volunteers built more than 240 rock structures and other treatments along 10 stream miles on three private ranches and two public land sites managed by Bureau of Land Management and US Forest Service.

The team established a vegetation monitoring program to track ecological response and installed groundwater monitoring wells to track water table changes over time. The response to the structures is quite promising, as they are starting to capture sediments and hold/spread water, enabling wet-loving plants to expand and colonize. This work only touched a fraction of what is needed, however, as there are numerous incised channels and degraded streams that would benefit from restoration across the Basin. As a result, the group is working to scale up the project to the whole basin level.



Gunnison Sage-grouse © Noppadol Paothong



Before and after restoration at Wolf Creek meadow (2012 and 2013) © (left) B. Neely; (right) R. Rondeau

Riparian Restoration: Taking the Project to Scale

Building on best practices and lessons learned from the two-year demonstration project, the partners launched a new three-year effort in early 2014 to accomplish significant watershed-scale restoration in the Gunnison Basin.

The goals of the second phase of the project are to: 1) increase ecosystem resilience to climate change by restoring hydrologic function of priority wet meadow and riparian habitats 2) build a sustainable and enduring program to increase restoration across the basin; 3) ensure scientific rigor of project; 4) develop and evaluate cost-effective tools, methods, and planning; and 5) share best practices and lessons learned to encourage application of restoration methods within and outside of the basin.

This project is an exciting demonstration of how diverse groups can collaborate on important conservation efforts to prepare for change.



Rock Structure at Wolf Creek meadow © B. Neely

For More Information:

www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/Colorado/science/climate/gunnison/Pages/default.aspx

Gunnison Climate Working Group

Bureau of Land Management
Colorado Natural Heritage Program
Colorado Parks and Wildlife
Gunnison County
Gunnison County Stockgrowers Association
Lake Fork Valley Conservancy
National Center for Atmospheric Research
National Park Service
Natural Resources Conservation Service
Rocky Mountain Biological Laboratory
The Nature Conservancy
Trout Unlimited
US Fish and Wildlife Service
US Forest Service
Upper Gunnison River Water Conservancy District
Western State Colorado University
Western Water Assessment,
University of Colorado

Contacts:

Betsy Neely, The Nature Conservancy
bneely@tnc.org
Jim Cochran, Gunnison County
JCochran@gunnisoncounty.org
Nathan Seward, Colorado Parks and Wildlife
Nathan.Seward@state.co.us
Andrew Breibart, BLM, Gunnison Field Office
abreibart@blm.gov
Gay Austin, BLM, Gunnison Field Office
gaustin@blm.gov
Matt Vasquez, USFS, Gunnison RD
mgvasquez@fs.fed.us

The Nature Conservancy 
Protecting nature. Preserving life.®