Wet Now?!

How WRV is working to increase climate resilience by storing more water in our landscapes

Morgan Crowley (she/her)

Wildlands Restoration Volunteers

Overview

By collaborating with each other and engaging volunteers to implement Natural Climate Solutions, like beaver mimicry and wet meadow restoration we can enhance climate resilience and build community locally and across Colorado.

Where we're going

- About Wildlands Restoration Volunteers
- Why do we need to re-wet landscapes
- What WRV is doing
- Restoration with Volunteers
- Questions

Wildlands Restoration Volunteers

- Began in 1999 to address wetland and riparian-related issues in Boulder County
- Mission: Building diverse communities that care for the land

Wildlands Restoration Volunteers

- 200+ projects and 3,500 volunteers per year
- Open to the public
- No experience required

Volunteer Leader Training

Technical Skills

- Basic ecological restoration
- In-Stream “Beaver Mimicry” Structures

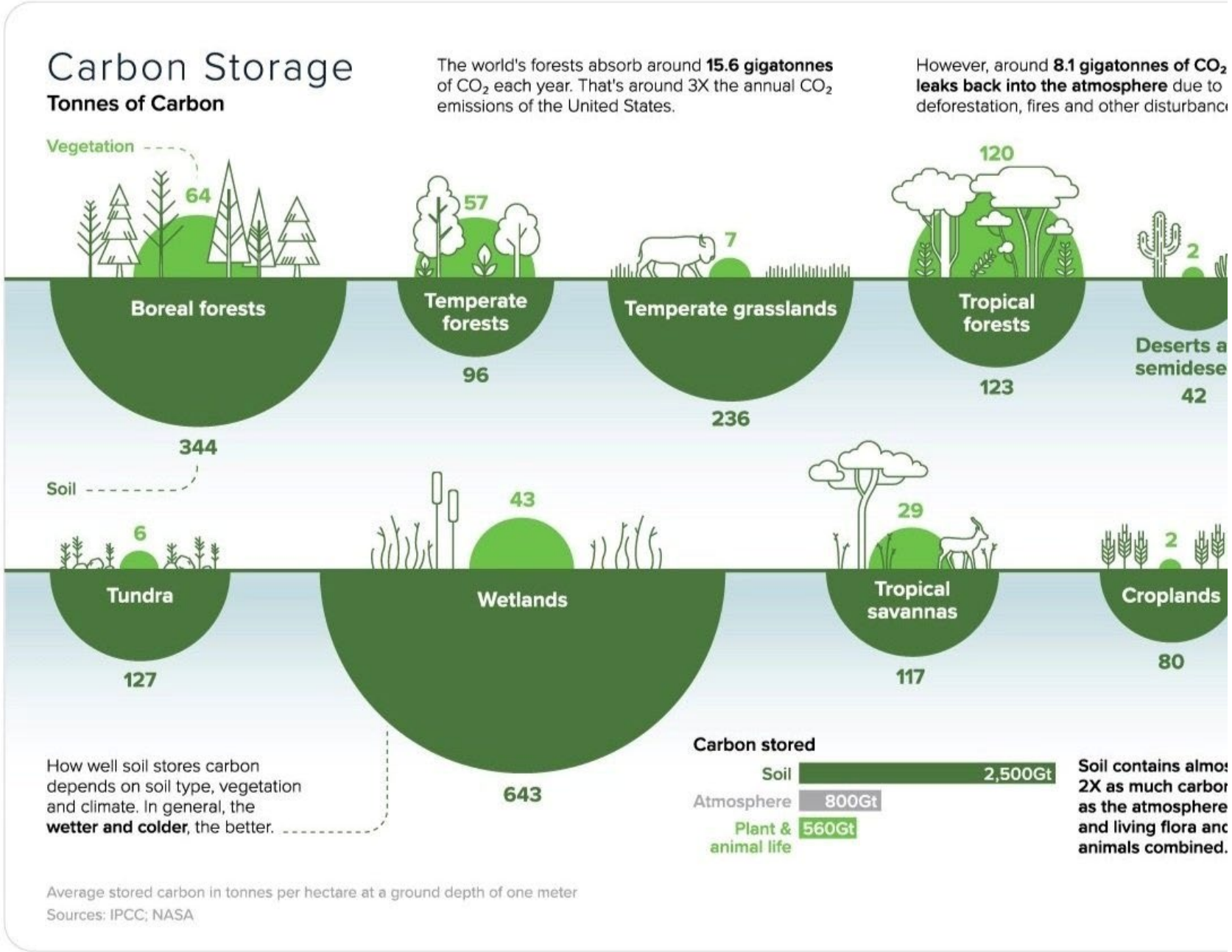
Photo: Lisa Hupp/USFWS

Climate Resilience and Re-Wetting

80% of wildlife depends upon wetlands and yet 95% of wetland and riparian habitats in the southwest have been altered, damaged or destroyed by various land uses.

Making matters worse, worsening drought and climate change is predicted to reduce the water storage capacity of our landscapes.

Bad news for wetlands!



The very landscapes most at threat have the greatest capacity to regulate climate change.

If we want to restore wetlands, what do we need?

Photo: Bill Hayden, Glacier National Park

Beavers

- Beaver once “managed” rivers throughout North America
- 19th century fur trapping led to a rapid decline in the beaver population

What Does a Beaver Dam Do?

- Creates habitat for beaver
- Slows down, spreads out, and stores water to better weather drought
- Creates a natural "fire break" in the watershed
- **Create carbon sinks!**

Photo: Jacob W. Frank, Grand Teton National Park

What Do We Do Now?

- Reintroduce beaver
- Allow them to expand and do their thing

What CAN We Do Now?

- Reintroduce beaver
- Allow them to expand
- **Beaver mimicry!**

What is Beaver Mimicry?

Human built structures that mimic the **function** of beaver dams

Such as In-stream, (often) channel-spanning structures

What is Beaver Mimicry?

Can be built in ephemeral streams and drainages too

What is Beaver Mimicry?

Even rock structures like these can serve a similar function

Beaver Mimicry With Volunteers

- Post Assisted Log Structures (PALS) & Beaver Dam Analogs (BDA's)
- Zeedyk Rock Structures

Post Assisted Log Structures & BDAs

Posts driven into the ground or stream bed anchor the structure and keep wood from floating away during construction or first high-flow event

Post Assisted Log Structures & BDAs

Willow branches or logs are woven or jammed into this BDA

Post Assisted Log Structures & BDAs

- Slows the flow of water
- Larger sediments drop out
- Catches wood flowing downstream

Post Assisted Log Structures & BDAs

- Slows the flow of water
- Larger sediments drop out
- Catches wood flowing downstream

Post Assisted Log Structure - Post-Fire

Zeedyk Structures

Zeedyk Structures – Headcut Control

Zeedyk Structures – Headcut Control

Zeedyk Structures – Headcut Control

Zeedyk Structures – Grade Control

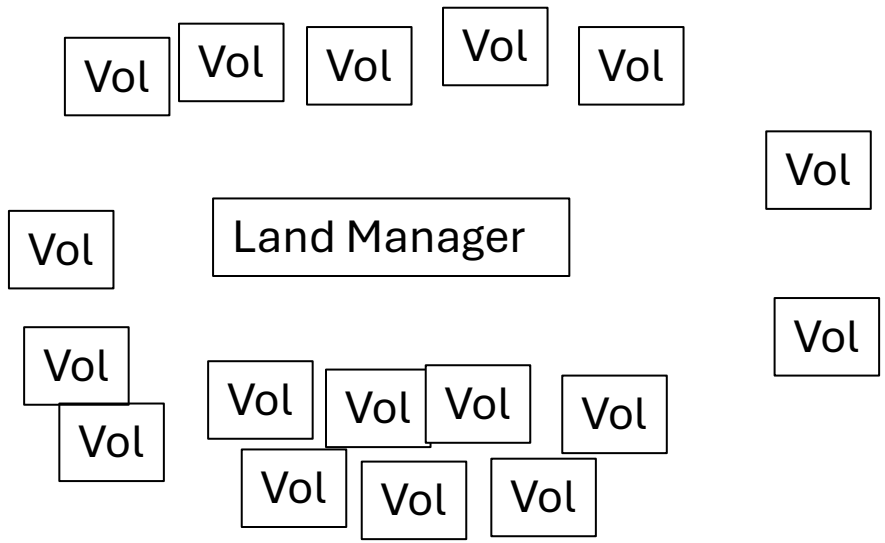
Zeedyk Structures – Grade Control

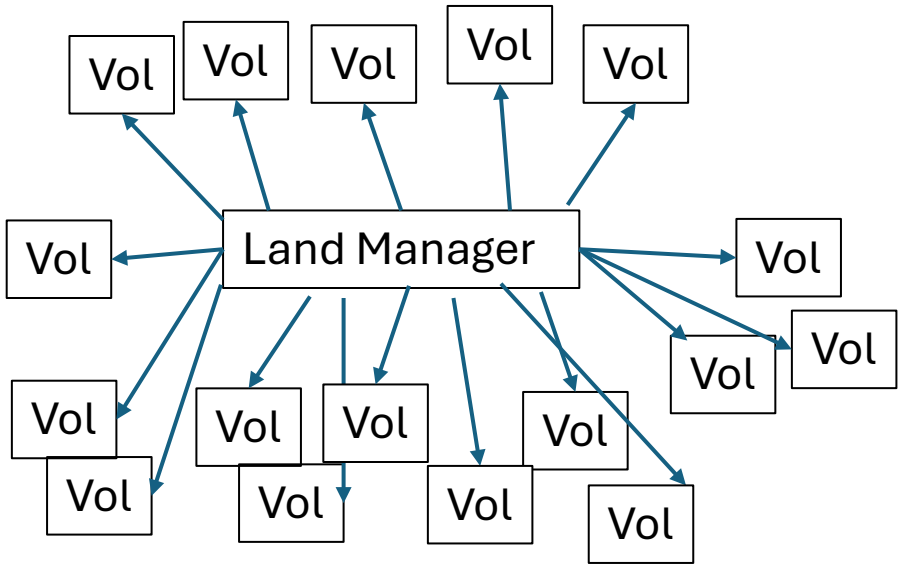
Zeedyk Structures – Grade Control

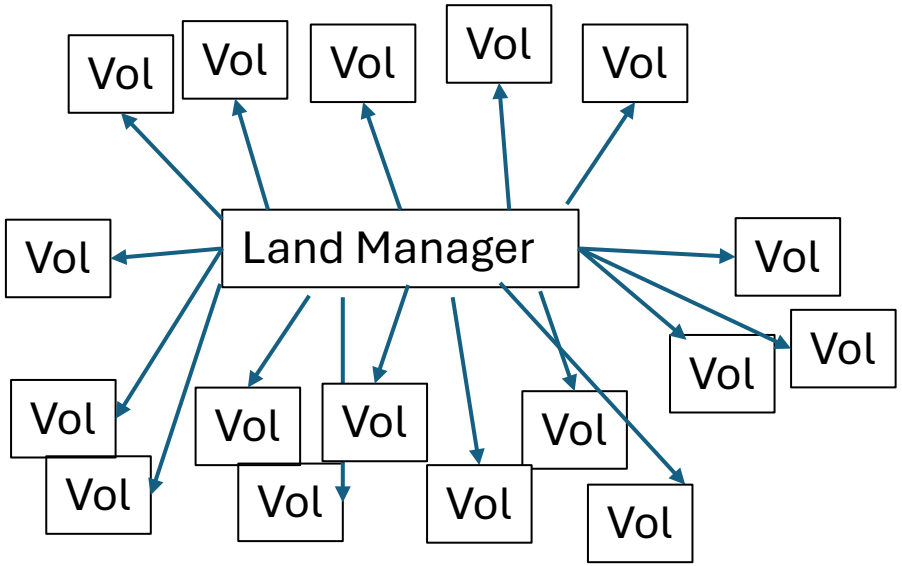
WHY Work with Volunteers?

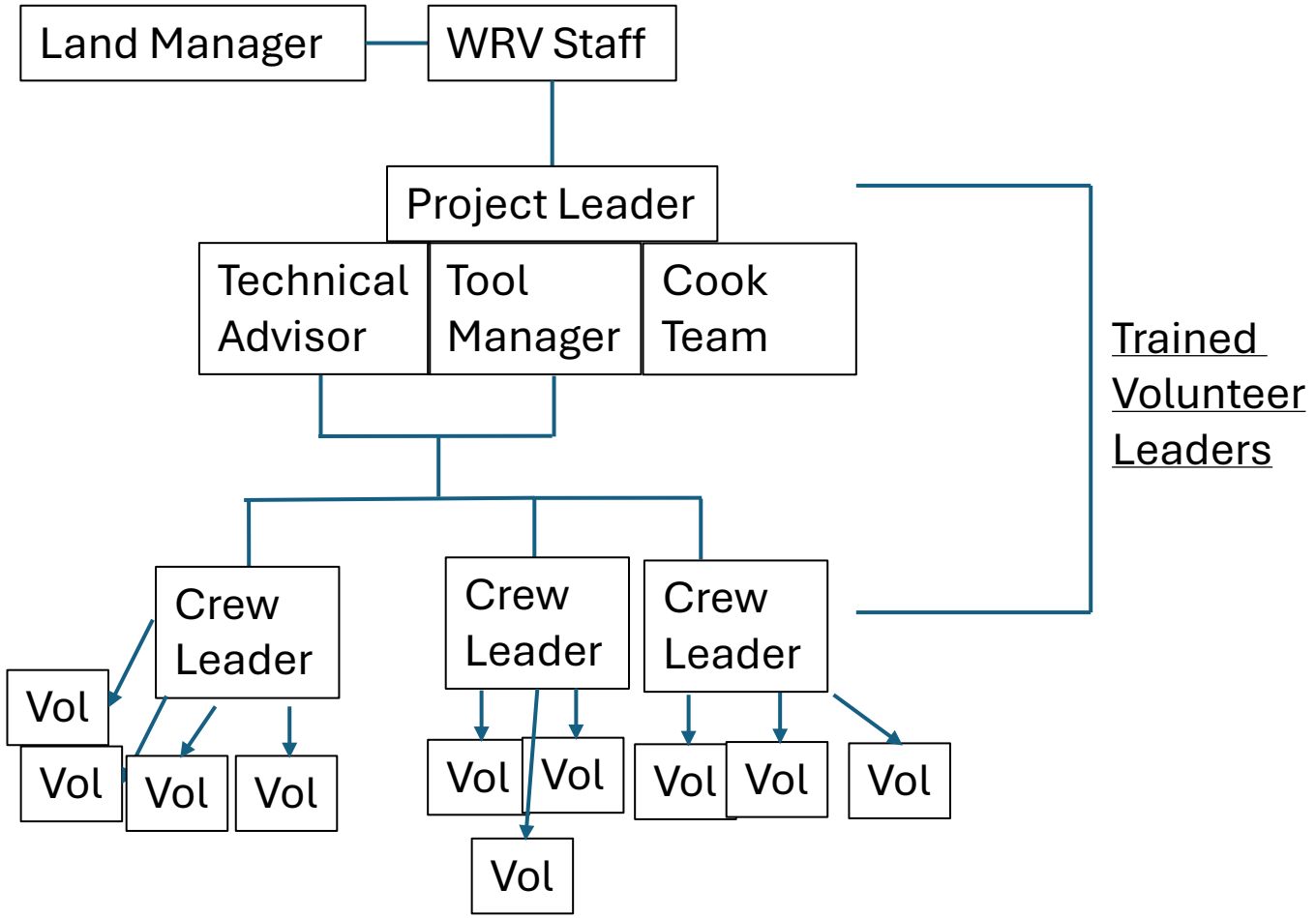
- Community engagement
- Education
- Mobilization of big groups

Land Manager


Vol
Vol
Vol
Vol
Vol
Vol
Land Manager
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol


Vol
Vol
Vol
Vol
Vol
Land Manager
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol


Vol
Vol
Vol
Vol
Vol
Vol
Land Manager
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol


Land Manager
WRV Staff
Project Leader
Technical Advisor
Tool Manager
Cook Team
Trained Volunteer Leaders
Crew Leader
Crew Leader
Crew Leader
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol
Vol

Many Hands Make Light Work

Summary

- Beaver mimicry is an important restoration tool with applicability in a variety of ecosystems and restoration needs
- Engaging volunteers and partnering with non-profits are a great way to get work done on the ground quickly and effectively and affordably

Thank You!

Morgan Crowley

Wildlands Restoration Volunteers

Morgan@wrv.org

www.wrv.org

Also Check out our
Wet Meadow
Restoration StoryMap!

Want to learn more?
Check out these references

- Adamchak C, Lininger KB and Hinckley E-LS (2025) Animating the critical zone: beavers as critical zone engineers. *Front. Water* 7:1547094.doi: 10.3389/frwa.2025.1547094
- Norman, L. M., Lal, R., Wohl, E., Fairfax, E., Gellis, A. C., & Pollock, M. M. (Year). *Natural infrastructure in dryland streams (NIDS) can establish regenerative wetland sinks that reverse desertification and strengthen climate resilience*. Science of the Total Environment 849 (2022)
- Rondeau, R. J., Austin, G., Miller, R. S., Parker, S., Breibart, A., Conner, S., Neely, E., Seward, N. W., Vasquez, M. G., & Zeedyk, W. D. (Year). Restoration of wet meadows to enhance Gunnison sage-grouse habitat and drought resilience in arid rangelands. Restoration Ecology. *RE-AL Thematic Series: Arid Lands*
- Seastedt TR. Accelerating contributions of restoration ecology for enhancing natural climate solutions. *Academia Biology* 2025;3. https://doi.org/10.20935/AcadBiol7502