RiversEdge West presents:

FREE & Dinner Provided!

From Weeds to Wildlife

Workshop on Practical Steps to Restore Your Riverside

October 2nd & 3rd 2025

Thurs. Oct. 2nd @ 5:30-8 PM – CSU Western Campus – 3170 B½ Rd. GJ, CO

Fri. Oct. 3rd @ 10 AM - Avant Vineyards - 3480 E Rd. Palisade, CO

(optional second-day site visit)

Speakers:

RiversEdge West
RESTORE + CONNECT + INNOVATE

Western Colorado Conservation Corps – Partners

MESA COUNTY NATURAL RESOURCES

Mesa Conservation District

- 5:30-5:40 PM – Welcome and Introductions
- 5:40-6:40 PM – Christa Brown, RiversEdge West – *Riverside Wildlife Habitat Restoration*
- 6:40-7:00 PM – Bailey Goldberg, Western Colorado Conservation Corps – *Understanding & identifying invasive plants and reviewing multiple control methods*
- 7:00-7:20 PM – Ryan Surad, Mesa County Noxious Weed & Pest Management – *Introduction to Herbicide Application & Noxious Weeds*
- 7:20-7:40 PM – Camryn Riddell and Joely Anysz, Mesa Conservation District - *Conservation in Action: Noxious Weed Threats and Mitigation Resources*
- 7:40-8:00 PM – Panel with all speakers


RiversEdge West
RESTORE + CONNECT + INNOVATE
USDA
NRCS
Riverside Wildlife Habitat Restoration
Christa Brown, Private Lands Biologist & NRCS Partner


RESTORE.
CONNECT.
INNOVATE.
OUR MISSION
Restoring riparian lands through collaboration, education, and technical assistance.
OUR VISION
We envision a network of healthy riparian ecosystems throughout the American West.
RiversEdge West
RESTORE + CONNECT + INNOVATE

Presentation Outline

- Issues in the Riparian Area
- Best Management Practices for Restoration
- Revegetation Efforts for Wildlife Habitat
- Wetlands Projects
- Funding Opportunities
- Technical Resources
- Upcoming Events

Issues in the Riparian Area:

Invasive Non-Native Plants
Wildfire Risks
Soil Degradation
Reduced Wildlife Habitat

Riparian Invasive Plants

Tamarisk

- Extremely well-adapted
- Secretes salts

Knapweed

- Favors disturbed sites
- Secretes chemicals in soil

Russian olive

- Fast spreading
- Stress tolerant

Russian Thistle

- Drought-tolerant
- High uptake of N in soil

Riparian Invasive Plants

Siberian Elm

Tree of Heaven

Kochia

Halogeton

Tamarisk

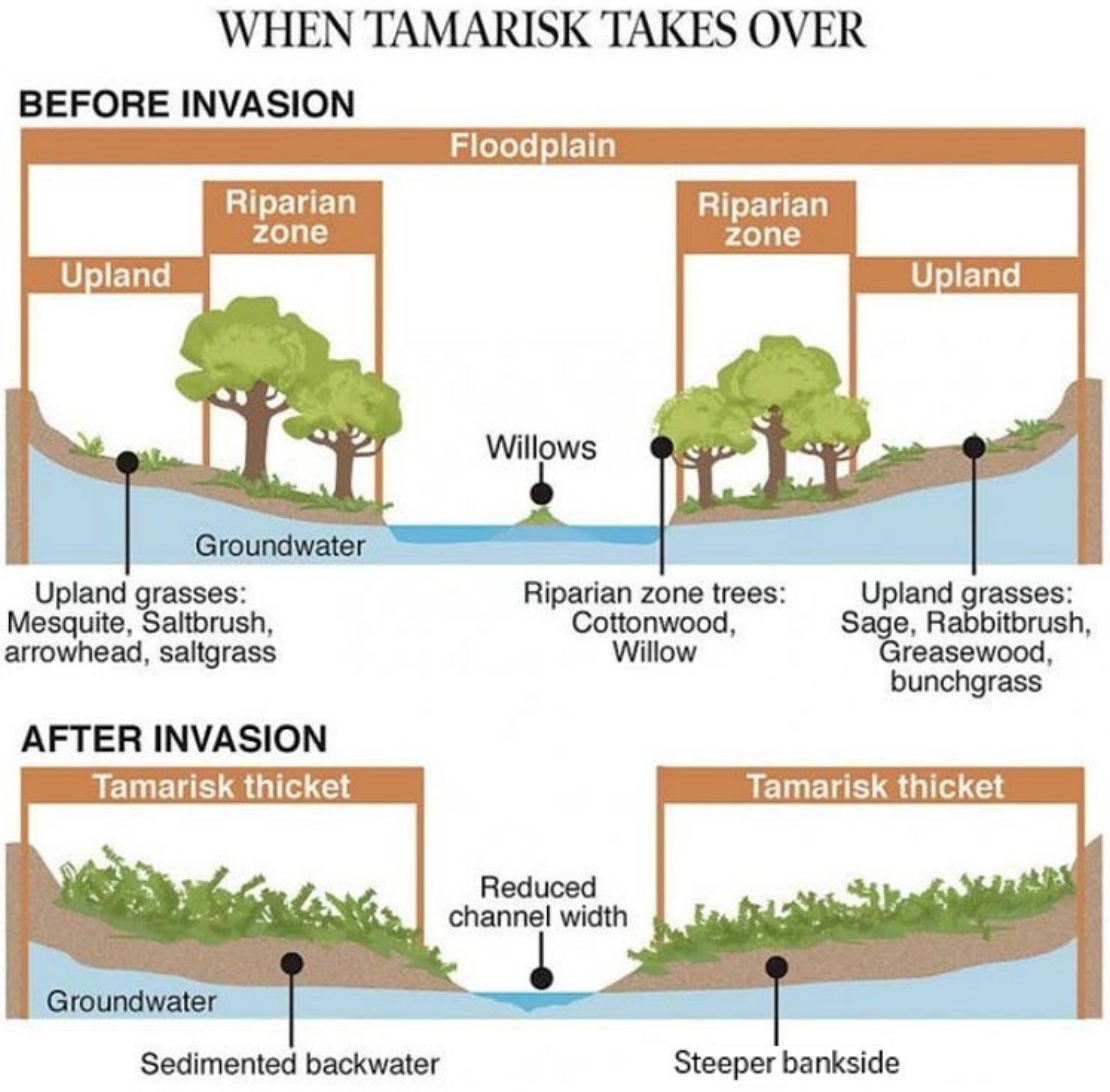
Russian Olive

Wildfire Risks

Wildfire Risks

- Dense tamarisk thickets are more fire-prone with continuous plant material as fuel
- Tamarisk leaves are more flammable compared to native plants
  - Wildfires with tamarisk tend to burn hotter and more intense
  - Increased damage to existing cottonwood stands
- Tamarisk tends to recover faster from wildfire, resprouting from the roots, and will recolonize in thicker monoculture stands

Soil Degradation



Soil Degradation

- Tamarisk can alter the soil salinity by bringing up alkaline water through its leaves and depositing them on the soil surface
- Invasive establishment along the bankside reduces erosion & deposition events and a wider floodplain
  - The upper bank gradually becomes drier with nutrient loss from a lack of flooding over the bankside
    - Loss in natural salt washing from the soils into the river
    - Less organic matter deposition that improves soil conditions

Limiting Invasive Monoculture

Reduced Wildlife Habitat

- These plants displace native vegetation and the wildlife that rely on them
- Major decreases in diversity and plant species that are better suited to support a wider variety of wildlife
  - Causes a decrease in available food sources for wildlife
  - Minimizes the suitability range from the insect community to pollinator species to big game species

Limitations for Wildlife

Biodiversity for Wildlife

Best Management Practices for Restoration:

Removal of Invasive Trees
Biomass Treatments
Herbaceous Weeds Management

Factors to Keep in Mind

- Project site access
  - Time of year for labor intensive work
- Available equipment
  - Considerations of what works best per site
- Time & cost
  - Self-implemented
  - Hiring contractors

Common Removal Methods

- Mastication
  - Shredding the trees and ripping out the roots
- Plucking
  - Equipment used to rip out root systems
- Chain-saw
  - Cut-stump method with chemical application

Cut-Stump & Retreatment

- Cut-stump method:
  - Mechanical removal of the biomass
    - Leave about 2-3 feet of stump off the ground
  - Chemical application to the stump
    - Painting herbicide to the top of the stump within 5-15 minutes after cutting (most effective)
- Retreatment – 1-2 times:
  - Reapplication to the stump after regrowth of suckers
    - Re-cut the stump below the regrowth & apply herbicide to the top of the stump

Recommendations for Small-Scale

- Removal in steps – gradual replacement:
  - Cut-stump method – best time to remove is FALL
    - Manage the young invasive species first
    - OR manage the invasives in sections
    - Maintain some ground cover, habitat structure, and canopy cover with gradual native plant replacement
  - Avoid Western YBCU species nesting season: June-Sept.
  - Retreat in following years after regrowth

Recommendations for Large-Scale

- Large-scale removal:
  - Mastication in the upland zone for high density
    - Winter is the best time with the lack of leaves
  - Cut-stump method along the bankside – in the fall
    - Hand-saw crews in the riverside sensitive zone
  - Avoid Western YBCU species nesting season: June-Sept.
  - Retreat in following years after regrowth
    - Occasional large-scale spraying after mastication

Herbicide Recommendations

- Herbicides:
  - Overall more suitable for riparian areas:
    - Herbicide: Triclopyr (Garlon 3A)
    - Surfactant – wetting agent that improves the effectiveness of herbicides sticking to plants and penetrating
    - Blue Dye – acts as a visual marker
  - Cut-stump for tamarisk: Imazapyr (Habitat)
  - Cut-stump for Russian olives: Glyphosate (Roundup)
  - Foliage spraying & perennial herbaceous weeds: Milestone
  - Where to buy? **Cropworx** in Eckert, CO

REW Project Examples

Watson Island - Before

Watson Island - After

Private Lands Removal

Delta, CO – Gunnison River

Before:

Private Lands Removal

Delta, CO – Gunnison River

After:

Private Lands Removal

Delta, CO – Gunnison River

Biomass Treatments

Biomass Treatments

- Pile & burn
  - Pros: inexpensive, quickest way to manage into minimal residue
  - Cons: air quality concerns, fire control/management of the process
- Lop & scatter
  - Pros: inexpensive, easy dispersion of biomass
  - Cons: laborious, potential reseeding of invasives on-site
- Chipping
  - Pros: ground cover mulch material
  - Cons: expensive, laborious, potential reseeding of invasives on-site
- Wildlife habitat piles
  - Pros: provides structure to small game species
  - Cons: leaves invasives on-site to resprout, unsightly

Impact of Herbaceous Weeds

Herbaceous Weeds Management

- Common herbaceous weeds in riparian areas:
  - Perennials:
    - Knapweeds
    - Thistles
  - Annuals:
    - Kochia
- Control methods:
  - Spring/summer mowing or weed whacking to avoid flowering and reseeding potential
  - Fall spraying with herbicide – spot-spray retreatments
    - Recommended herbicide: Milestone

Key Benefits to Invasive Removal

- Restore ideal native wildlife habitat and improve river health
- Availability for native plant regeneration
- Site accessibility for people and wildlife
- Mitigate fire hazard risks
- Improving bankside layering and slopes
- Limiting new invasive seed growth and slowing the spread

Wildlife Habitat Restoration

Native Revegetation Efforts

Importance

- Encourage native plant regrowth beyond natural regeneration
- Compete against growth of invasive weeds & reduce the constant need to retreat invasive species
- Provide ideal habitat in wildlife corridors
  - Native plants are vital food sources, cover, and breeding areas for our local wildlife

Preparation for Planting

- Creating a viable soil base for new root growth:
  - Mixing the surface into deeper layers to disperse high-salt surface content
  - Disrupting the surface for seed to soil contact
  - Dig the right amount and in the right location for planting sites
  - Planting the appropriate native vegetation for the site conditions

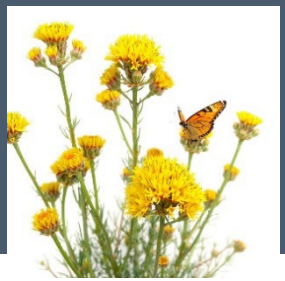
Planting Options

- Seeding riparian mixes
  - Broadcast spread and lightly till in late fall/winter before snowfall (Oct-Nov)
- Pole planting cottonwoods & willows
  - Plant on the bankside nearest to the water – in the spring (March-April)
- Container planting other native species
  - Bury the entire root ball and water during early establishment (fall/spring)

Plant Density for Wildlife

- Seed mixes:
  - 7-12 species of grasses, sedges, rushes, and forbs
  - 2-3 species of shrubs
  - About 10-20 pounds of seeds applied per acre
- Shrubs:
  - About 15-30 shrubs per acre
  - Provides ground cover, thickets for habitat, and food sources
- Trees:
  - About 10-25 trees per acre
  - Provides canopy cover (50% or more desired), nesting structure, and food sources

Plant Species Suggestions



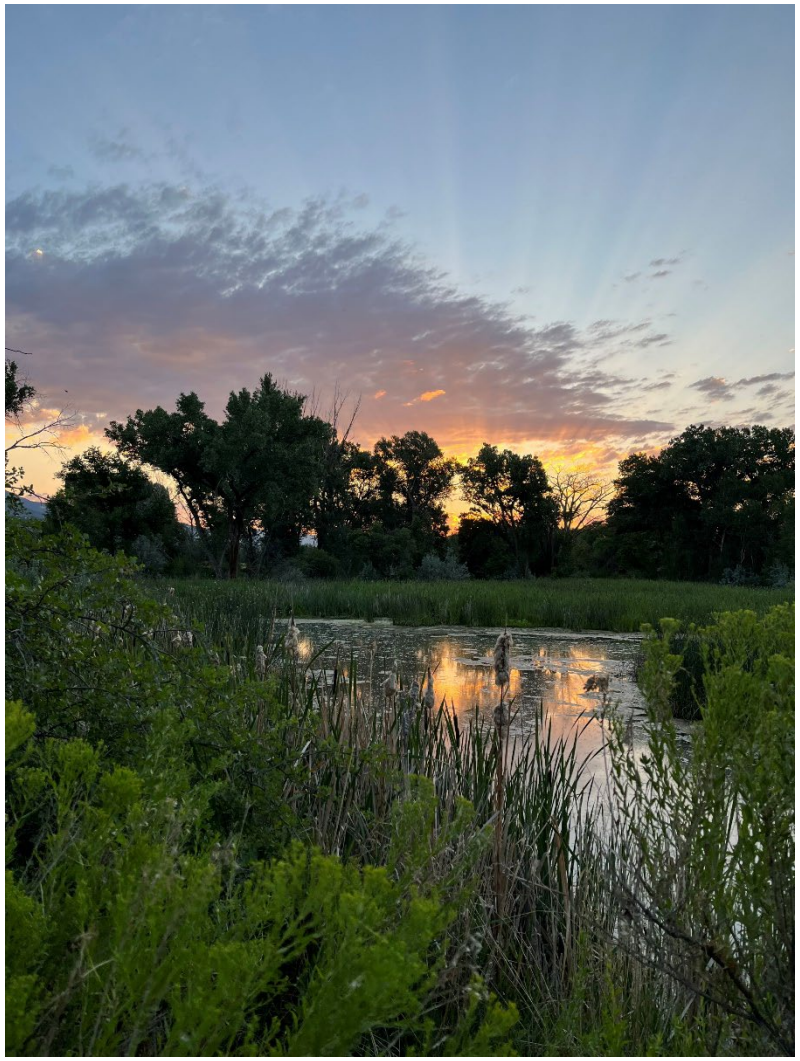
- Wildlife species:
  - Mule deer, black bear, foxes, beaver, rabbits, quail, waterfowl, raptors, amphibians, reptiles, and pollinators
- Top riparian plant species:
  - Cottonwoods, serviceberry, mahogany, chokecherry, golden currant, elderberry, willow, rabbitbrush, bulrush, big bluestem, Indian ricegrass, and sand dropseed

Increasing Success

- Improving the success rate of revegetation:
  - Planting species that need the most water alongside the bank and the more drought tolerant species upland
    - Riverside: cottonwoods, willows, dogwoods, silver buffaloberry
    - Upland: serviceberry, mahogany, sumac, greasewood
  - Summer watering and weed management during the establishment phase (1-2 years)
  - Protection efforts of young saplings
  - Monitoring and adding vegetation as needed

Private Lands Example

NRCS Project Success



Wetland Creation

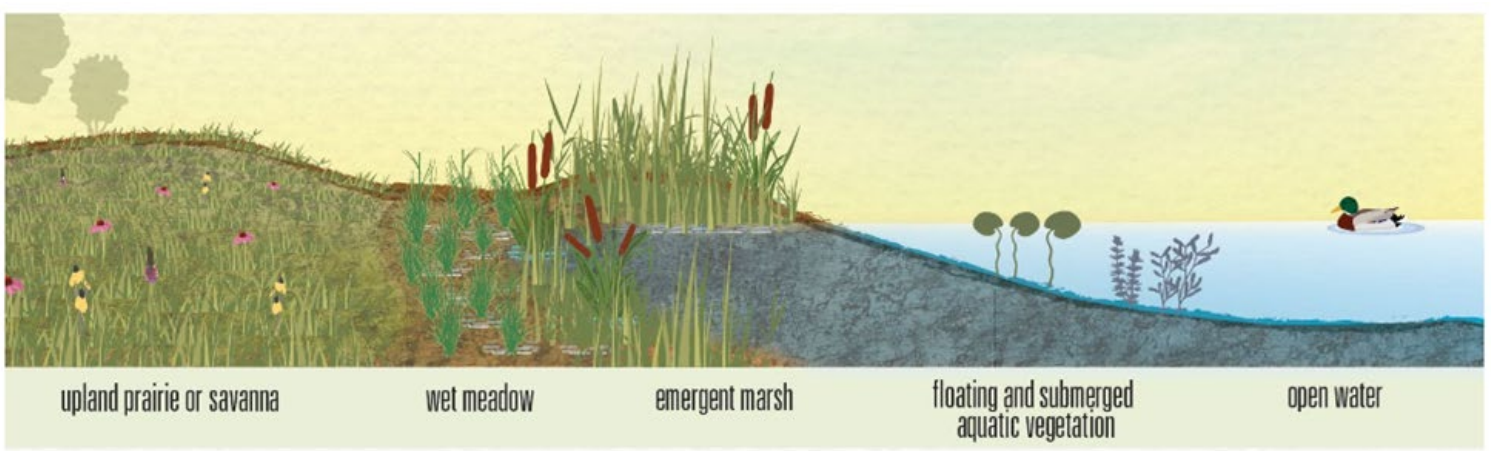
In Partnership with Ducks Unlimited

Why Wetlands?

- Important ecosystem in a drying desert landscape
  - Needed resource for migrating wildlife
  - Creates hotspot zones of biodiversity
- Regaining riparian habitat near the river in historical flooding zones
- Water quality improvement and carbon sequestration
- Improves overall floodplain health

Shallow Wetland Design

- Typical design and why:
  - Only about 2' deep with shallow banksides and an island in the center
  - Best model for providing foraging vegetation for migrating waterfowl & amphibian habitat
  - Allows for a greater diversity in plant species overall



Barnyard Grass/Millet

(Echinochloa spp.)

Food Value 10

Base of grass is reddish and "flat".

Chufa/Yellow Nutsedge

Cyperus esculentes

Food Value 9

Fragrant Flatsedge similar, but no tubers.

Smartweed

Polygonum spp.
Persicaria spp.

Food Value 8

Sprangletop

The Goals

- Provide food and habitat for migratory waterfowl throughout the winter and into spring
  - Maintain a seasonal watering system through water control structures and irrigation
  - There is less concern about providing nesting habitat or deep-water habitat here because these species are migratory and don't stay long
    - but there is an increasing need for shallow food availability

Wetland Watering Process

- Watering process:
  - Spring: release any held water to expose soil base and plant foraging vegetation (lightly till and spread seed as needed)
  - Summer: irrigate the base up to a few inches as needed to grow the plants
  - Fall: flood the wetland to an 18" depth to cover the plants
  - Winter: hold the water throughout the waterfowl migration season

Waterfowl Food Sources

- Summer dry period – most important part
  - Control for cattail and phragmites growth
  - Minimizes mosquito habitat
  - Allows for the large-seeded plants to grow that are good for foraging
  - These seeds then fall to the ground, and the ducks dig up the seeds in the shallow water

Private Lands Wetland Project

2022

Grant Application & Approval

Construction Phase

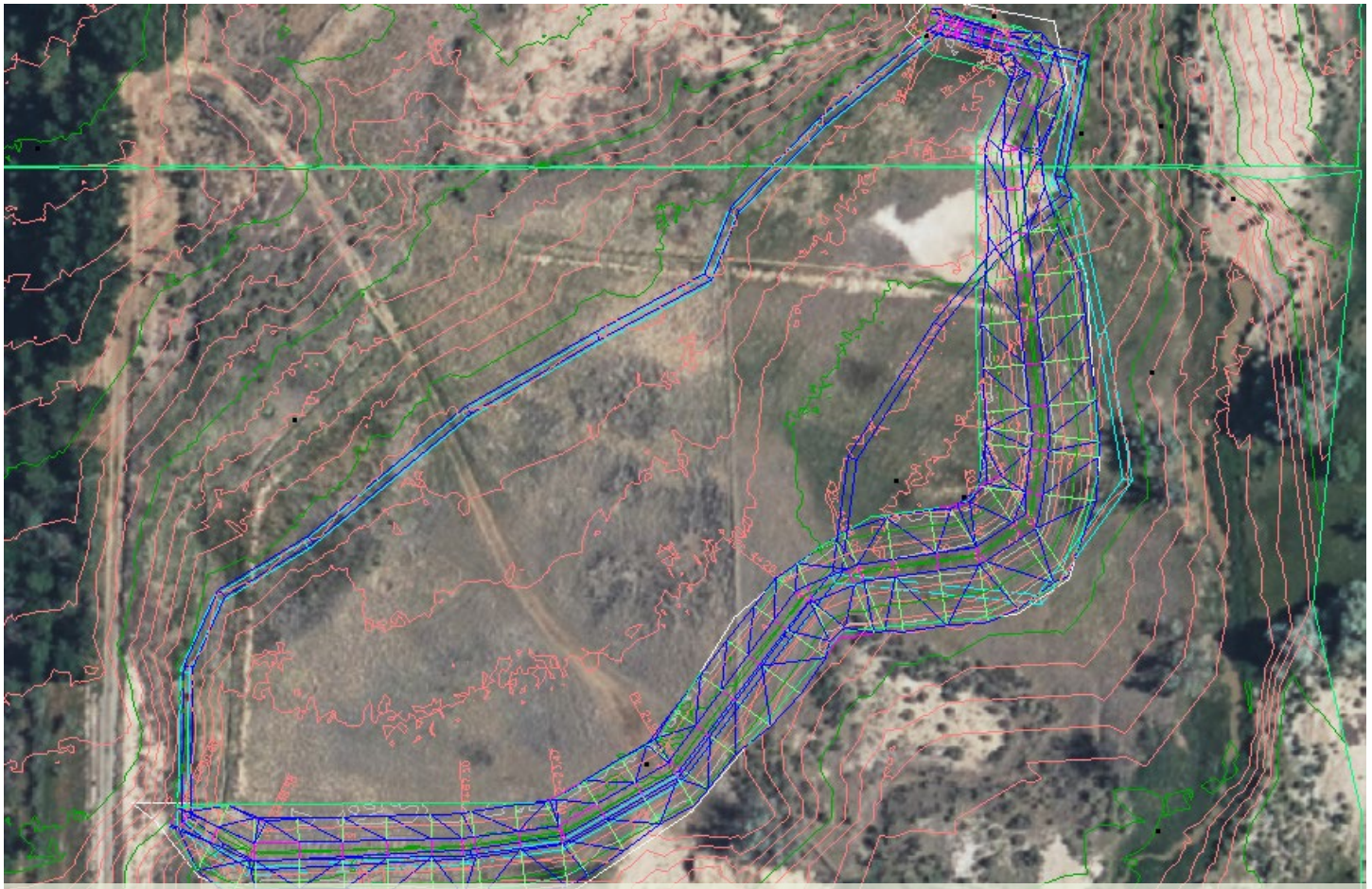
2023-24

Completion & in-use


Bittle Wetland
Seasonal Shallow Water Wetland
Google Earth


Loma Drain
Loma Drain

Engineering Design



Engineering Design - footprint of embankment

Before

View of field before construction – facing South

Mid-Construction

Edge of embankment

Final Walk-Through

Inlet structure

Final Walk-Through

Agri-drain buried in embankment

Filled Wetland – Fall 2023

Facing East from side road

Wetland – Winter 2024

Facing East from side road

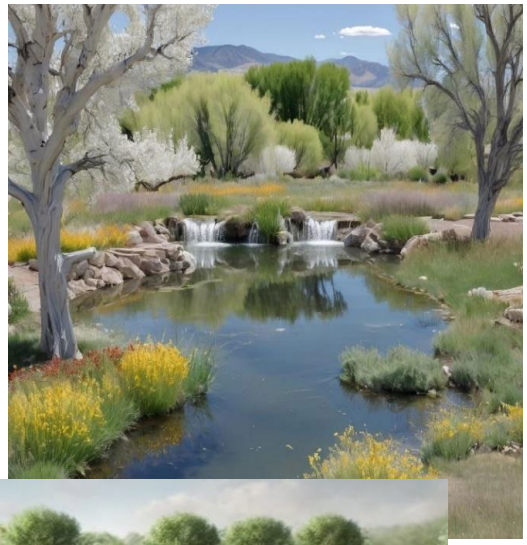
Wetland – Winter 2024

Waterfowl use of wetland

DUCKS!!!

Future Project Site:
Palisade Sewer Lagoons

Output Goals & Benefits



Funding Options

Funding Options with REW

- Apply for private, state, and federal grants
- Utilize donated funds to further our project work
- This helps cover the cost of:
  - Project planning, site visits, partner & landowner coordination, hiring contractors, follow-up work, revegetation efforts and workshops for landowners

Partnerships involved:

Two Rivers Wildfire Coalition

COLORADO WEST LAND TRUST

COLORADO PARKS • WILDLIFE

DUCKS UNLIMITED

Funding Options with NRCS

- Environmental Quality Incentive Program (EQIP)
  - Great for taking degraded resources into a functional system for your soils, water use, and plant coverage
  - Incentive based pay that covers partial amounts for the estimated total cost (cost-share program)

- Conservation Stewardship Program (CSP)
  - The next step in enhancing your project site
  - Adds diversity to native plant species, pollinator habitat and increasing corridor connectivity
  - Typical base pay is $4,000 per year for a 5-year contract

Potential Larger-Scale Funding

- Regional Conservation Partnership Program (RCPP)
  - Larger scale funding pool to address concerns in the entire watershed of our area
    - We can group multiple landowners and neighborhoods together along the riparian areas
  - Focus area would be property along the Colorado River & tributaries in the Grand Valley
  - Program lasts for 5 years and can be renewed

Resources

Plant Lists & Other Resources

Riparian Shrubs


Antelope Bitterbrush


Basin Sagebrush


Four-Wing Saltbush


Greasewood


Prairie Sage


Prince's Plume


Red Osier Dogwood


Skunkbush Sumac

Grasses, Forbs, & Shrubs Suggestions for Seed Mixes in Desert Rivers Riparian Areas

Along the water's edge:

- **Grasses (& grass-like)**
  - Baltic Rush (*Juncus balticus*)
  - Big Bluestem (*Andropogon gerardii*)
  - Inland Saltgrass (*Distichlis spicata*)
  - Nebraska Sedge (*Carex nebrascensis*)
  - Scratchgrass (*Muhlenbergia asperifolia*)

ORGANIZATION	PLANNING & GOAL SETTING	TECHNICAL ASSISTANCE	FUNDING ASSISTANCE	WORKSHOPS & TRAINING	LONG-TERM MANAGEMENT	OTHER NOTES	BEST FOR:
RiversEdge West (REW)	✓	✓	✓	✓		Provides education and technical expertise to landowners looking to restore riparian areas and associated uplands.	Wetlands/Riparian Areas
Natural Resource Conservation Service (NRCS)	✓	✓	✓	✓	✓	Conservation planning and technical assistance with available engineering. Partial funding through NRCS programs with eligibility.	Large-Scale Projects
Colorado Conservation Districts (CD)	✓	✓	✓	✓	✓	Staffing and projects vary by area. CDs have guidance resources and access to NRCS funding pools.	Starting Contact Point
Colorado State University Extension	✓	✓		✓	✓	Colorado's land grant university provides research and literature for guidance to landowners.	Resources & Guides
US Fish & Wildlife Service Partners for Fish & Wildlife (Partners)	✓	✓	✓		✓	Assists with voluntary habitat restoration on private lands through financial and technical assistance.	Additional Funds for Projects
Land Trusts	✓	✓	✓			Land trusts offer easements to preserve the restored lands and this provides a legal framework for inclusion in larger projects.	Protecting Your Restored Land

Best Management Practices

MANAGEMENT RECOMMENDATIONS
Tamarisk & Russian Olive Removal

RiverEdge West
RESTORE + CONNECT + INNOVATE

Prepared for Landowners | By Christa Brown | 2024

This document is intended to provide general management recommendations with associated references.
It is not exhaustive or intended to be prescriptive.

SMALE-SCALE MANAGEMENT

Recommendations for tamarisk and Russian olive managemer

RiversEdge West works across the entire community, however fundraisi
to larger scale projects. For smaller scale projects, RiversEdge West is ha
assistance and support. This is a document intended to assist you with n
tamarisk and Russian olive on your property.

TIP: Weedy tree
can come ba
preparc
tamaris
c

BEST MANAGEMENT PRACTICES

For new growth/saplings:

- **Pulling or spraying**

Maintenance of invasive trees at new growth works best when pu
root system out before they grow too large. Saplings and young weedy
to kill off growth (please see Chemical Use section). Once these trees ar
using mechanical work will just suppress them temporarily and will not
This includes just trying to cut the trees down which will result in more v
need for more frequent cuttings.

For mature trees:

- **Cut-stump**

Photo by Pamela Beane/Unsplash

This is a highly recommended method for
trees by combining mechanical work a
process can occur anytime of the ye
effective in the fall as the health o
roots and the herbicide will also be
kill off continued growth.

MANAGEMENT RECOMMENDATIONS
Shallow Wetlands

RiverEdge West
RESTORE + CONNECT + INNOVATE

Prepared for Landowners | By Christa Brown | 2024

This document is intended to provide general management recommendations with associated references.
It is not exhaustive or intended to be prescriptive.

SITE GOALS

- Provide foraging and migration habitat for ducks during spring and
- Create a moist soil management area utilizing prescribed flooding a
develop diverse plant communities.
- Create a wetland that produces habitat and food resources for wildl
- If applicable, provide waterfowl hunting opportunities.

WETLAND CREATION

Creating a shallow wetland adds a substantial ecological value to the c
riparian areas provide habitat by encouraging a large diversity of plant species
into these areas. This is a big project to take on but RiversEdge West is an avai
helping with wetland creation.

This process begins with planning the site project area depending on t
topography, water availability, and costs of the project. There is no designate
wetlands, so these can be large or small-scale projects. However, the general
wetland during construction is about 2 feet. This provides the opportunity to
appropriate depths for diverse vegetation management. Western Colorado ha
had abundant wetland areas so the design must be accurate to this environm

Next, the management strategy will need to include manip
regime with irrigation to promote a diverse annual g
sedge community. Once the wetland is establis
management will focus on providing migrator
suitable foraging habitat and growing habit
other diverse species including mammals, a
reptiles.

MANAGEMENT RECOMMENDATIONS
Abundant Coyote Willow Stands

RiverEdge West
RESTORE + CONNECT + INNOVATE

Prepared for Landowners | By Christa Brown | 2024

This document is intended to provide general management recommendations with associated references.
It is not exhaustive or intended to be prescriptive.

SITE GOALS

Coyote willow stands (*Salix exigua*) play an important role in ecological health, wildlife habitat, and erosion control. However, they can grow rapidly and become large, dense populations that no longer line up with land management goals. If this is something you are struggling with, outlined in this document are some management practices with these goals:

- Undergo some removal of native vegetation along portions of the riparian area
- Increase fire breaks for wildlife and human safety
- Improve designated access areas by opening up the streambank

IMPORTANCE vs INVASION

The native willow stands are an important part of watershed health. These stands act as an erosion control along the streambank that provides stabilization during different stream flows throughout the year. The root system holds the soil in place and also acts as a slow release for water downstream, avoiding further runoff erosion and improving water quality. These thick stands are also beneficial for wildlife, providing wood and habitat for birds and forage for deer (USDA 2002).

Native willow stands can hit an abundance threshold and become weedy or invasive (USDA 2002). They are part of the natural regime in local watersheds but can spread easily and grow intensely (OSU 2023). Physical management of overpopulation by cutting /mowing down

Upcoming Events

Volunteer Planting Event with City of Fruita

October 23, 2025

Grand Opening

November 5, 2025

Workshop Site Visit

- Join us at Avant Vineyards tomorrow!
- Meet us along E Rd for parking

- Wear appropriate hiking shoes & clothes, plus bring water and sun protection
- Show up > eat snacks > drink coffee > hike & talk > drink wine afterwards = the perfect day

Christa Brown

Private Lands Biologist

RiversEdge West & NRCS

Email: cbrown@riversedgewest.org

Work cell: 970-902-0830

Survey