20/20 VISION

LEARNING FROM THE LAST 20 YEARS;
PLANNING FOR THE NEXT

FEBRUARY 23-25, 2022
GRAND JUNCTION CONVENTION CENTER • GRAND JUNCTION, CO
# 20TH ANNIVERSARY CONFERENCE
## 20/20 VISION
### DAY ONE – AGENDA
#### FEBRUARY 23, 2022

**12:00-1:00 pm MST  Check-in**

**1:00-1:20  Overview**
Rusty Lloyd, RiversEdge West

**1:20-1:50  Keynote Presentation**
Becky Mitchell, Director of the Colorado Water Conservation Board

## CLIMATE CHANGE FROM 4,583 FEET
Moderated by Rusty Lloyd, RiversEdge West
Room: Colorado III

**1:50-2:10  Weather, Climate, and Climate Change in Western Colorado**
Russ Schumacher, Colorado Climate Center and Colorado State Climatologist

**2:10-2:30  A Score of Changes and More in Store**
Dave Kanzer, Colorado River District

**2:30-3:00  Climate in Context: Connecting Science and Decision-making**
Kathy Jacobs, Center for Climate Adaptation Science and Solutions, University of Arizona

**BREAK**
3:00 pm – 3:30 pm MST

## ADAPTING YOUR GOALS & TACTICS TO CLIMATE CHANGE
Moderated by Mark Briggs, RiversEdge West
Room: Colorado III

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| 3:30-3:40  | **Introduction and Overview**  
Mark Briggs, RiversEdge West                                                              |
| 3:40-4:00  | **Climate Changes Cycle of Disaster in Arid West**  
Impacts Watersheds for Multiple Years  
Paula Stepp, Middle Colorado Watershed Council                                             |
| 4:00-4:20  | **Gathering Information on the Future of Snow and Water for Adaptation Planning on National Forests**  
Charles Luce, U.S. Forest Service                                                          |
Kathy Jacobs, Center for Climate Adaptation Science and Solutions                           |
| 4:40-4:50  | **Discussion Tee Up: Considerations for Developing an Effective Climate-Adapted Response**  
Paula Stepp, Middle Colorado Watershed Council and Mark Briggs, RiversEdge West            |
| 4:50-5:00  | **Final Discussion**                                                                      |

## PLANT MATERIALS
Moderated by Christine Prins, RiversEdge West
Room: Kannah/Whitewater

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| 3:30-3:50  | **Obtaining Plants and Seeds for Restoration Practitioners**  
Steve Plath, Gila Watershed Partnership                                                   |
| 3:50-4:10  | **It Starts With a Seed: Growing Capacity for Regional Native Plant Materials through the Southwest Seed Partnership**  
Ashlee Wolf, Institute for Applied Ecology                                                 |
| 4:10-4:30  | **Great Basin Research Center and Seed Warehouse: Providing Seed for Restoration and Beyond**  
Kevin Gunnell, Utah Division of Wildlife Resources                                         |
| 4:30-4:50  | **Introducing Populus: A ToolForSelecting Fremont Cottonwood Candidate Trees For Restoration Using Ecological Research Findings**  
Sean Mahoney, Humboldt State University and Jaclyn Corbin, Northern Arizona University    |
| 4:50-5:00  | **How to be Prepared When Purchasing Native Plants**  
Rebecca Wright and Ty Blackler, North Fork Native Plants                                   |

**POSTER SESSION & STUDENT CONTEST**
5:00 pm–7:00 pm MST – Includes appetizers and two free beers – Colorado I & II
POSTER SESSION & STUDENT CONTEST
5:00–7:00 pm — Rooms: Colorado I & II

Join us for appetizers and drinks at the poster session and happy hour!
Discuss with poster presenters and exhibitors, catch up with familiar faces, and network with others in your field.
Each attendee receives one complimentary beer or non-alcoholic beverage. Cash bar available.

Student Contest:
To encourage continued student development of their research, the poster session will include a contest exclusively for students. Conference attendees will judge the student poster/presentations and vote on their choice for the top three. First, second, and third winners will receive a cash scholarship of $150, $100, and $50 respectively.

Assessment Of Russian Olive As An Ecogeomorphic Agent On The Powder River
Antonio Reveles-Hernandez, University of Northern Colorado

Alternative Invasive Species Management: Manual Russian Olive Removal Along the San Juan River
Elissa Rothman, Canyon Country Discovery Center

Cottonwood Trees Vary in their Leaf Hydraulic Architecture Traits when Grown at the Extreme Hot Edge of their Range
Iris Garthwaite, Northern Arizona University

Using Ecological Connectivity as a Basis for the Watershed Integrity of Western US Waters
Mark Murphy, NVS, Inc.

Tamarisk Beetle Monitoring: Spatial and Temporal Patterns of Diorhabda Carinulata Abundance and Tamarisk Defoliation in Grand County, Utah, 2007-2021
Tim Graham, University of Utah

An Innovative Partnership to Address Impacts from Colorado Legacy Mining: The Colorado Abandoned Mine Collaboration
Victor Ketellepper, US Environmental Protection Agency
### DIVERSE STAKEHOLDER ENGAGEMENT & STEWARDSHIP
Moderated by Rusty Lloyd, RiversEdge West
Room: Colorado III

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| 8:30-8:50 | River Corridor Collaborations - Planning and Implementing Cross-Jurisdictional River Planning and Management  
Joel Sholtes, Colorado Mesa University |
| 8:50-9:10 | The Lower Gila River Collaborative: Lessons from a Diverse Multi-Stakeholder Partnership to Bring Back the Lower Gila River  
Kelly Wolff, Arizona Game and Fish Department |
| 9:10-9:30 | A Decade of Restoration on the Verde River  
Tracy Stephens, Friends of the Verde River |
| 9:30-9:50 | Navajo River Improvement Project  
Jerry Archuleta, Natural Resource Conservation Service |
| 9:50-10:10 | The Practice of Collaborative Conservation and Getting Stuff Done on the Ground  
Todd Graham, Ranch Advisory Partners |

### BREAK
10:10—10:40 am MST

### GROUNDWATER DEPENDENT ECOSYSTEMS
Moderated by Bruce Orr, Stillwater Sciences
Room: Kannah/Whitewater

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| 8:30-8:50 | Water Stress in Riparian Woodlands from Groundwater Decline and Climate Change - Ecosystem Indicators at Multiple Scales  
John Stella, State University of New York College |
| 8:50-9:10 | More information coming soon. |
| 9:10-9:30 |
| 9:30-9:50 |
| 9:50-10:10 |

### HYDROLOGY & PLANT RESPONSE
Moderated by Christine Prins, RiversEdge West
Room: Colorado I

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| 10:40-11:00 | A Tale of Two Rivers: The Role of Different Drought-Like Conditions in Promoting Vegetation Encroachment on the Lower Dolores River  
Cynthia Datt, Fort Lewis College |
| 11:00-11:20 | Hydrologic and Geomorphic Effects on Riparian Plant Species Occurrence and Encroachment: Remote Sensing of 360 km of the Colorado River in Grand Canyon  
Laura Durning, Northern Arizona University |
| 11:20-11:40 | Adaptive Wet Meadow Habitat Restoration in the Gunnison Basin  
Maxwell Sawyer, Western Colorado University |

### MEETING SOCIAL, ECONOMIC, & ECOLOGICAL GOALS THROUGH PARTNERING WITH CONSERVATION CORPS
Moderated by Rusty Lloyd, RiversEdge West
Room: Kannah/Whitewater

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| 10:40-11:00 | Conservation Corps and Riparian Restoration; Where We Come From  
Sean Damitz, Program Director, Utah Conservation Corps |
| 11:00-11:20 | Colorado Youth Corps and the Colorado Water Conservation Board  
Erik Stoeckl, Colorado Water Conservation Board |
| 11:20-11:40 | Restoring the Land, Restoring Ourselves: Utilizing Landscape Restoration as a Method to Reconnect Indigenous Young People to the Natural World, their Cultures, and Career Pathways  
Chas Rabies, Ancestral Lands Conservation Corps |
HYDROLOGY & PLANT RESPONSE
Moderated by Christine Prins, RiversEdge West
Room: Colorado III

11:40-12:00 Comparison of Russian Olive, Tamarisk, and Cottonwood Plant Traits with Implications for River Morphodynamic Trajectories
Sharon Bywater-Reyes, University of Northern Colorado

MEETING SOCIAL, ECONOMIC, & ECOLOGICAL GOALS THROUGH PARTNERING WITH CONSERVATION CORPS
Moderated by Rusty Lloyd, RiversEdge West
Room: Kannah/Whitewater

11:40-12:00 Developing Career Pathways through Restoration Work
Briget Eastep, Intergovernmental Internship Cooperative

LUNCH
12:00-1:00 pm MST – Colorado 1 & 11

FIELD TRIPS & WORKSHOPS

Choose between the following five options during conference registration (continued on the next page).
Field trips and workshops are an additional $20:

Option 1 of 5

NAVIGATING THE INFRASTRUCTURE BILL FOR RIPARIAN RESTORATION PROJECTS
Hosted by Kristen Jespersen, RiversEdge West and Stacy Beaughe, Strategic by Nature
Time: 1-4pm
Location: Grand Junction Convention Center, Room: Whitewater/Escalante/Adobe

The recently passed Infrastructure Investment and Jobs Act (H.R. 3684) contains $4.5 billion for watershed restoration. This session will be devoted to understanding where and how that funding will be made available and will involve an interactive discussion about how practitioners can queue up their projects to be successful in vying for this funding.

*Available to in-person and virtual attendees

Option 2 of 5

RIPARIAN RESTORATION BEST PRACTICES TRAINING
Hosted by Eric McCulley, RiverRestoration
Time: 1:00 pm—5:30 pm
Location: Grand Junction Convention Center, Room: Kannah, Dominguez, Plateau

This workshop will be focused on developing participants’ ability and knowledge about the most effective way to implement riparian restoration projects along the rivers in the Colorado River Basin. We will discuss the critical components of successful restoration plans, the variables effecting project success, and techniques for designing and implementing successful riparian restoration projects.

The workshop will also go over some specific examples and walk through the process for developing the plan, implementing the project, and following up on the project for long-term sustainability.

Bring your computer and your project maps and we will put this knowledge to work in the final discussion session of the day.

*This workshop is not available to virtual attendees
THE EVOLUTION OF A RIVER CORRIDOR
Hosted by the Desert Rivers Collaborative/RiversEdge West
Time: 1:30 pm–3:30 pm
Location: Meet at the parking lot adjacent to the Western Botanical Garden–655 Struthers Ave, Grand Junction, CO 81501
Transportation is not provided but carpooling is encouraged. Alternatively, it is a 50-minute walk (1.3 miles) to the meeting location.

The Grand Valley’s river corridor extends from Palisade to the Utah border; encompassing the confluence of the Gunnison and Colorado Rivers in Grand Junction, CO. These interconnected communities all depend on the Colorado and Gunnison rivers in myriad ways, and over the last 40 years, stewardship of the riparian area has led to physical restoration projects, partnerships, and ongoing efforts to improve the river corridor.

Join RiversEdge West and long-time partners for a field tour of the riverfront at Las Colonias Park and Watson Island to learn about the history and future vision for the riparian area in the Grand Valley. During this walking tour, attendees will learn about how the river corridor at Las Colonias and Watson Island, which was nearly inaccessible because of invasive plant species and certain land uses, became the birthplace of RiversEdge West (REW). Through the years, REW and our many partners continue to work towards and advocate for improvements to the riparian area to benefit people, wildlife, and overall ecosystem health.

As economic growth, population expansion, and climate change place more pressure on the resources provided by the Colorado and Gunnison Rivers, the planning and management of these resources between a patchwork of land managers and landowners become increasingly important. The Grand Valley River Corridor Initiative (RCI), a project that REW and partners are working on, aims to fill the void of a central coordinating entity by developing a vision and plan for the river corridor that includes input from diverse stakeholders, land managers, and land owners. RCI will draw from federal, state, and local plans that exist within the Grand Valley that address natural resources, endangered species habitat, land use and economic development, transportation, and recreation. This initiative aims to be a resource and guide for river corridor stakeholders, fostering collaboration on future river centric endeavors leading to informed decision making.

During this tour, multiple short presentations will illuminate historical projects and partnerships, provide tangible lessons for restoration in urban areas, and discuss efforts of the River Corridor Initiative that envision what the river corridor can look like in the future.

*This workshop is not available to virtual attendees

PALISADE INSECTARY TOUR
Hosted by Dan Bean, Colorado Department of Agriculture
Time: 2:00 pm–3:30 pm MST
Location: Meet at the Palisade Insectary at 2pm–750 37 8/10 Rd, Palisade, CO 81526
Transportation is not provided but carpooling is encouraged.

Meet at the Colorado Department of Agriculture’s (CDA) Palisade Insectary for a short walking tour and site visit to Riverbed Park. The Palisade Insectary has long been a promoter of the use of biological control in weed and insect pest management and is home to about 20 different species of biological control agents.

Join us for a closer look at these insects and the unique rearing processes, as well as general information on past and future efforts by the CDA’s Biological Pest Control Program.

*This workshop is not available to virtual attendees
This workshop will present and discuss the issues involving Southwestern Willow Flycatcher challenges surrounding the tamarisk beetle and its effect on tamarisk habitat, currently a primary habitat for flycatchers. Workshop topics will discuss what flycatcher habitat shifts occur when tamarisk habitat is depleted by the beetle, drought, and restoration efforts. The workshop will also explore riparian restoration challenges when replacing tamarisk habitat and where restoration efforts are successful. Please see below for the list of presentations for this workshop:

*Available to in-person and virtual attendees*

**Update on APHIS Southwestern Willow Flycatcher Conservation Program**
Kai Caraher

**Southwestern Willow Flycatcher and Tamarisk Beetle Status and Habitat Restoration Efforts along the Virgin and Lower Colorado Rivers**
Mary Anne Mcleod and Christian Edwards

**Impacts of Diorhabda on Southwestern Willow Flycatcher Habitat – Middle Rio Grande, NM**
Kristen G. Dillon and David Moore

**Upper Gila River, AZ, Tamarisk Leaf Beetle and Possible Impacts on a Southwestern Willow Flycatcher Population**
Matthew Johnson and Jennifer Holmes

**Southwestern Willow Flycatcher Range Wide Model Application and Managerial Uses**
James Hatten

**Southwestern Willow Flycatcher Occupancy Modeling and Application for Long term Monitoring**
Charles Yackulic

**Tracing the Monitoring and Evaluation of Tamarix Control and its Outcomes in the American Southwest: A Systematic Review and Meta-Analysis**
Alexander Goetz, Eduardo González, Mayra C. Vidal, Patrick Shafroth, Annie L. Henry, Anna A. Sher

**Tamarisk Beetle Species Meet Again in Southwest Willow Flycatcher Habitat**
Zeynep Ozsoy, Amanda Stahlke, Levi Jamison and Matthew Johnson

**Fungal Endophyte Communities Are Similar in Composition But Have Different Effects On A Native And An Invasive Plant Species**
Alexandra Schuessler Ron Deckert, Kevin Hultine, Catherine Gehring

**Estimates Using Two Methods of Vegetation-Indexed and Energy-Balanced Over Riparian Zones: A Case Study of Colorado River Delta**

**First Tracking of Riparian Vegetation Health And Water Use Using Two Evapotranspiration Methods: A Comparison of Remotely Sensed Evapotranspiration VI and Ssebop Products in the Riparian Corridor of The Lower Colorado River Delta**
Nagler, Pamela, Neda Abbasi, Ibrahim Sall, Gabriel Senay, Matthew Schauer, Armando Barreto-Muñoz, & Kamel Didan

**Tamarisk Leaf Beetles and Tamarisk Habitat, A Longer Look Back to Improve Guesses of What’s Ahead**
Tim Graham

**Establishing a Long-term SentinelVegetation Monitoring Site: A brief overview of methods, types of data collected, analysis, and cost**
Mark Briggs

**Riparian Vegetation Responses to Tamarisk Biocontrol in the Context of Southwestern Willow Flycatcher Habitat**
Patrick B. Shafroth, Eduardo Gonzalez, Annie L. Henry, Alexander R.B. Goetz, Mayra C. Vidal, and Anna A. Sher
8:00–8:30 am MST  Check-in and light breakfast

8:30–8:45  Welcome & RiversEdge West Short Film
           RiversEdge West Staff

CONNECTING THE UPPER & LOWER WATERSHED
Moderated by Rusty Lloyd, RiversEdge West
Room: Colorado III

8:45–9:15  How Rivers and Floodplains Work — and How They Work Better Together
           Colin Thorne, Wolf Water Resources

9:15–9:45  Floodplain Reunification — The River Restoration Frontier
           Janine Castro, U.S. Fish and Wildlife Service

9:45–10:05 Partnering with Beaver to Restore Wetland
           Jessica Doran, EcoMetrics

10:05–10:25  Wildfire Ready Watersheds
             Chris Sturm, Colorado Water Conservation Board

BREAK
10:25–10:55 am MST

ON-THE-GROUND LESSONS LEARNED & TECHNIQUES
Moderated by Mark Briggs, RiversEdge West
Room: Colorado III

10:55–11:15  Lessons Learned from Riparian Restoration
             Eric McCulley, RiverRestoration

11:15–11:35  Adapting Restoration Techniques to Meet Climate Challenges on the Gila River
             Alexia Osornio, Gila Watershed Partnership of Arizona

11:35–11:55  Unauthorized Human Use Impacts on Riparian/Stream Restoration
             Linnea Spears-Lebrun, SWCA

11:55–12:15  Salton Sea Vegetation Enhancement Strategies
             Ondrea Hummel, Tetra Tech

12:15–12:35  Lessons Learned for Riparian Habitat Restoration Along the Rio Grande in Southern New Mexico and West Texas
             Elizabeth Verdeccia, International Boundary and Water Commission

RIPARIAN RESTORATION IN A WARMING WORLD
Moderated by Kevin Hultine, Desert Botanical Garden
Room: Kannah/Whitewater

10:55–11:15  Riparian Vegetation Response to High Intensity Fire and Flood Disturbance in Two Montane Canyons in the Jemez Mountains, New Mexico
             Patrick Shafroth, U.S. Geological Survey

11:15–11:35  Provenience of a Riparian Shrub Changes Traits but Not Flood Response Under a Common Climatic Setting
             Emily Palmquist, U.S. Geological Survey

11:35–11:55  Interaction of Tamarisk Legacy Soil and Climate Change on Fremont Cottonwood
             Julia Hull, Northern Arizona University

11:55–12:15  Hydroclimatic Variables for Predicting Riparian Habitat Suitability
             Brad Butterfield, Northern Arizona University

12:15–12:35  Tradeoffs Between Leaf Thermoregulation and Hydraulic Safety in Warm- Versus Cool-adapted Ecotypes in the Foundation Tree Species Populus fremontii
             Kevin Hultine, Desert Botanic Garden
FOCUSING ON FISH: CONNECTING RIPARIAN ZONES, FLOWS, AND INSTREAM HABITAT
Moderated by: Matthew Breen, Utah Division of Wildlife Resources
Room: Colorado III

1:35-1:55 Native Fish Need a Natural Flow Regime, Not More Water Development (No Duh)
Phaedra Budy, Utah State University

1:55-2:15 Riparian Land Cover Classification to Guide Conservation and Restoration of the Lower White River, Utah
William Macfarlane, Utah State University

2:15-2:35 Effective Conservation and Restoration of Desert Riverscapes Must Include Conservation of In-Stream Flows: What can we learn from a Case Study from the White River, Utah
Casey Pennock, Utah State University

2:35-2:55 Hobble Creek Delta Restoration 15 Years Later: Larvae, Leaves, and Lessons Learned
Melissa Stamp, Utah Reclamation Mitigation and Conservation Commission

2:55-3:15 Final Discussion

SCIENCE, TECHNOLOGY, & MONITORING
Moderated by Mark Briggs, RiversEdge West
Room: Kannah/Whitewater

1:35-1:55 Trends in Evapotranspiration and Drought in a Dozen Riparian Restoration Sites in the Colorado River Delta in Mexico
Pamela Nagler, U.S. Geological Survey

1:55-2:15 Comparison of Actual Evapotranspiration Estimates Using Two Methods of Vegetation-Indexed and Energy Balanced Over Riparian Zones: A Case Study of Colorado River delta
Neda Abbasi, University of Gottingen – Germany

2:15-2:35 Automated Soil and Groundwater Monitoring to Support Adaptive Management of Actively Managed Riparian Restoration Areas
Lindsey Bunting, GeoSystems Analysis, Inc.

Monisha Banerjee and Chad McKenna, GeoSystems Analysis, Inc.

2:55-3:15 Home And Garden: Transplanted Cottonwood Trees Show Plasticity in Leaf Hyperspectral Reflectance Across An Environmental Gradient
Jaclyn Corbin, Northern Arizona University

BREAK
3:15-3:45 pm MST
20/20 PERSPECTIVE
Moderated by Rusty Lloyd, RiversEdge West
Room: Colorado III

3:45-4:10  The History and Future of Biocontrol in Riparian Areas, the 20/20 Perspective
Dan Bean, Palisade Insectary – Colorado Department of Agriculture

4:10-4:35  Stream Management Plans in Colorado: Progress at 5 Years
Nicole Seltzer, River Network

Rusty Lloyd, RiversEdge West

CLOSING REMARKS & PRIZE GIVEAWAY
Room: Colorado I

4:55-5:05  Parting Thoughts and Hidden Prizes
Rusty Lloyd, RiversEdge West

HAPPY HOUR
5:30 pm MST

PLEASE RETURN YOUR
EVALUATION FORM AND NAME TAG
TO THE REGISTRATION DESK.
Thank you sponsors