Ensuring Riparian Restoration following 8 years of accomplishments in Southwestern Colorado

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Final Report

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Attn: Chris Strum

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Conservation Legacy on behalf of the Dolores River Restoration Partnership (DRRP)

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Introduction

On behalf of the Dolores River Restoration Partnership, Conservation Legacy's Southwest Conservation Corps was awarded a grant totaling $200,000 from Colorado Water Conservation Board's Watershed Restoration Program in 2018. The original grant period ran for two years and was extended through November 2020. This is the final report for project work implemented in 2018, 2019, and 2020 with awarded funds.

Funds were used for restoration activities along the Dolores River in southwest Colorado as part of a larger effort to ensure riparian restoration success across 150 miles of the Dolores River and its major tributaries. Since 2009, the DRRP has worked to remove invasive plants, whose extensive growth has displaced native plant communities, impaired wildlife habitat and forage, hindered access to campsites and other recreational opportunities, and increased risks associated with wildfire in the riparian corridor.

The Southwest Conservation Corps is a program of Conservation Legacy, a 501(c)(3) non-profit based in Durango, CO. SCC operates conservation service programs that encourage environmental stewardship, foster community partnerships, emphasize experiential learning, and serve a diverse population that is representative of the Southwest; including youth, graduates, veterans, and a cross-section of ethnicities and income levels. SCC has been a critical partner in the DRRP since its inception in 2009.

Background

The Dolores River in Southwest Colorado once provided for vibrant streamside habitat that supported a wide array of wildlife and warm water native fish. Extensive growth of tamarisk and other aggressive invasive plants along the Dolores River below McPhee Dam has displaced native plant communities, impaired wildlife habitat and forage, negatively impacted wetlands, contributed to river channelization and simplification, impeded access to campsites and other recreational opportunities, hindered biodiversity, and increased risks associated with wildfire in the riparian corridor.

For 10+ years, the Dolores River Restoration Partnership (DRRP) has been working collaboratively to restore Dolores River riparian habitat across two states, four BLM field offices, five counties, and many private lands. DRRP leadership is provided through the Southwest Conservation Corps and RiversEdge West (REW). Partners include the more than 30 signatories to the 2015 five-year DRRP Memorandum of Understanding (currently being renewed for another 5 years) as well as individuals, funders, private landowners, and community members who provide important in-kind services. This collaborative approach has enabled the DRRP to remove 1,862 acres of tamarisk to date, reflecting about 68% of the total tamarisk that was originally along the river. The partnership has also re-treated 2,077 acres of tamarisk re-sprouts, treated 3,290 acres of secondary weeds, and conducted 585 acres of active revegetation to date.

The DRRP's work is guided by tamarisk mapping completed by the Tamarisk Coalition (now RiversEdge West) in 2006, the 2010 Dolores River Riparian Action Plan (DR-RAP), the 2014 DRRP Transition Plan to Monitoring and Maintenance (M&M), and rapid vegetation monitoring assessments conducted annually since 2014. Together, these guiding plans and assessments outline the DRRP's shared goals, associated measurable objectives, method for site prioritization, strategies for long term monitoring and maintenance, and governance structure that supports collaborative project development, implementation of restoration work, and evaluation of work to track progress towards ecological goals as well as adapt practices to maximize effectiveness. The Transition Plan for M&M was developed and approved in 2014 in order to strategize the transition from intensive restoration efforts to follow-up monitoring and maintenance at a site-by-site level in order to assure ecological restoration success throughout the watershed.

This grant from CWCB was instrumental in enabling the partnership to perform critical work outlined in our M&M plan over the past 3 years including secondary weed and tamarisk re-sprout treatments, active revegetation, initial tamarisk removal, rapid vegetation monitoring on restoration sites, and education and outreach activities.

Objectives and Long-Term Goals

Project Specific Goals

Overall project goals for the grant period were as follows:

- Secondary weed and tamarisk re-sprout treatments: 350 acres
- Active revegetation: 10 acres
- Rapid Monitoring: 130 acres
- Initial tamarisk treatments: 14 acres
- Education and Outreach: 60 volunteers engaged, installation of 1 interpretative sign, 2 community workshops, 2 plant ID classes, training for corps strike teams

DRRP Multi-Objective Approach

The DRRP is completing intensive restoration of riparian areas that will achieve the following objectives: improved habitat for aquatic and terrestrial species, enhanced recreational access, improved water quality, and reduced groundwater consumption by invasive phreatophytes.

Improved habitat: This restoration work is replacing invasive phreatophytes with riparian plant communities that are more structurally diverse (i.e. multiple layers) and have greater temporal variety in food sources for wildlife. A variety of migratory species (e.g. Western Yellow Billed Cuckoo, Southwest Willow Flycatcher) and non-migratory terrestrial species (mule deer, wild turkey) are expected to benefit from this work. Bird Conservancy of the Rockies is continuing to monitor avian populations at multiple sites in the watershed to compile a complete multi-year picture of population response at treated and untreated sites. Additionally, this work will improve in-stream habitat complexity (e.g. islands, secondary channels, backwaters) with reduced channelization imposed by tamarisk and improved natural meandering.

Enhanced recreation: Sites with heavy recreation use are a key consideration for prioritizing restoration work along the Dolores River. Boat-ramps in Bedrock and Big Gypsum Valley, the confluence of the Dolores and San Miguel Rivers, and the Gateway interpretative trail will be improved by continued control of noxious weeds through this grant proposal. The partnership has improved over 25 riverside campsites since inception and will continue this important work.

Water quality: Large-scale removal of tamarisk is expected to reduce soil-surface salinity.

Groundwater consumption: It is expected that groundwater consumption will also be reduced through removal of dense tamarisk monocultures in the upper terraces of the historic floodplain. In these dryer areas, planting focuses on mesic and xeric species of native grasses and shrubs.

Project Site Summary

The DRRP uses a landscape scale approach to restoration. Therefore, CWCB funding was used for five specific activities at many restoration sites along 150 miles of the Dolores River and its major tributaries in Colorado: (1) initial riparian tamarisk treatments completed by conservation corps strike teams and chainsaw crews within the greater bounds of the Uncompahgre BLM field office and along Disappointment Creek; (2) secondary weed (e.g. Russian knapweed, hoary cress) and tamarisk resprout treatments on a few private lands and on BLM land within the Tres Rios, Grand Junction, and Uncompahgre BLM field offices by conservation corps strike teams; (3) active revegetation (e.g. seeding native grass species, planting cottonwoods) at the Bedrock and Big Gypsum Valley boat launches as well as at various sites throughout the Uncompahgre BLM field office; (4) rapid monitoring on restoration sites on private and BLM land within the Uncompahgre BLM field office boundaries; and (5) 92

volunteers engaged from 2018 through 2020 on various projects from the Big Gypsum Valley boat launch to riverside sites north of Gateway, CO.

Methods

Secondary Weeds and Tamarisk Resprout Treatments

Strike teams (specialized 2 and 3 person crews) were trained to perform several critical maintenance functions including secondary weed treatments, tamarisk re-sprout treatments, and active revegetation. Strike team members receive herbicide training and take the test to become licensed for pesticide application in Colorado.

Strike teams treated tamarisk resprouts and other Colorado noxious weed species, including Russian knapweed, hoary cress, musk thistle, Canada thistle, Russian olive, Siberian elm, and perennial pepper weed. Strike teams used backpack sprayers, hand sprayers, and UTV mounted sprayers to apply herbicide as spot sprays, basal bark treatments, and foliar treatments. Herbicides used for this work include Garlon 4 Ultra, Garlon 3a, Pathfinder II, Milestone, Escort, Telar, and Transline as well as appropriate adjuvants (including surfactants and blue Hi-Light dye) to maximize herbicide effectiveness. Strike teams are comprised of crew members and leaders hired through local conservation corps programs to follow the annual DRRP Project Implementation Plan, which is developed every year by DRRP partners including BLM personnel, conservation corps staff, the RiversEdge West Restoration Coordinator, and private landowners. CWCB funds were used for personal protective equipment for herbicide application (e.g. nitrile gloves, rubber boots, coveralls, etc.), purchase of herbicide and adjuvants, necessary tools and materials, and costs associated with testing and licensure for strike team members and leaders for pesticide application. All treatments and pesticide use data was recorded by strike teams on tablets with Collector for ArcGIS and synced to the DRRP's geodatabase.

CWCB Funding used for Secondary Weeds and Tamarisk Resprout treatments: $110,415

- $18,946 for Western Colorado Conservation Corps 2-person Strike Team
- $28,800 for Southwest Conservation Corps 3-person Strike Team
- $60,118 for Southwest Conservation Corps 2-peron Strike Team
- $2,551 for herbicide, PPE, and supplies

Active Revegetation – Corps Strike Teams

In sites where there was low potential for passive recruitment of native species and/or where there was concern about re-encroachment of secondary weeds, the DRRP conducted active revegetation with strike teams from WCCC and SCC. Strike teams used hand-held seed spreaders to broadcast native grass seed mix comprised of Indian ricegrass, alkali sacaton, and sand dropseed over treatment and disturbed areas on several restoration sites. This is a custom seed mix made for Dolores River restoration work by Southwest Seed Inc. in Cortez, CO. Strike Teams also helped with volunteer projects that involved planting shrubs and trees. See the Revegetation-Volunteers section for planting methods.

CWCB Funding used for Active Revegetation – Corps Strike Teams: $5,800

- $3200 for Southwest Conservation Corps 3-person Strike Team
- $2600 for Southwest Conservation Corps 2-person Strike Team

Rapid Monitoring

SCC strike teams were trained to conduct annual rapid monitoring to gather site-based information. The main components of rapid monitoring are vegetation cover estimates, presence of tamarisk beetle, documentation of passive recruitment of select native species, photo-points, and inventory of secondary weed infestations. This data enables the DRRP to track restoration success and inform future management activities on a site-by-site basis. Monitoring data was gathered using the Collector app for ArcGIS loaded onto tablets enabled with GPS. The data was synced to the partnership's geodatabase through ArcGIS Online, enabling the DRRP to share and analyze data with partners. Rapid monitoring and photo-point reports were generated for BLM land managers. Rapid monitoring is performed on roughly 1/3 of the DRRP's restoration sites every year, correlating to each Colorado BLM field office. In 2018, CWRP funds were used to help the DRRP strike team complete rapid monitoring on restoration sites within the bounds of the Uncompahgre BLM field office, including private lands that the DRRP has access to.

CWCB Funding used for Rapid Monitoring: $6,600

- $6,600 for Southwest Conservation Corps 2-person Strike Team

Initial Tamarisk Treatments

Initial tamarisk treatments were conducted by strike teams and 8-person hand crews from two different local conservation corps: Western Colorado Conservation Corps (WCCC) and Southwest Conservation Corps (SCC). Crews underwent extensive training on chainsaw use, herbicide application, and plant ID before implementing project work. Crews utilized the cut-stump method, cutting tamarisk with chainsaws to a low-stump at ground level and applying herbicide to the cambium layer of stumps in order to maximize movement of active ingredient to the roots of the tamarisk. Crews used Garlon 3a herbicide undiluted or mixed with water in hand sprayers for cut stump application. Tamarisk slash was either scattered or piled for burning by BLM Fire crews in winter. Crews recorded all treatments and pesticide use data on tablets with Collector for ArcGIS and synced this data to the DRRP's geodatabase after every hitch.

CWCB Funding used for Initial Tamarisk Treatments: $52,150

- $52,150 for 8-person conservation corps had crews from WCCC and SCC

Revegetation – Volunteers

A volunteer event with the Wildlands Restoration Volunteers (WRV) was held in October 2018 where volunteers planted and installed caging around 80 long-stem cottonwood trees. The site where the cottonwoods were planted has seen restoration activities for almost 10 years, starting with removal of a large dense tamarisk infestation in 2011. Since then, tamarisk re-sprouts and secondary weeds such as Russian knapweed and hoary cress have been treated. This site was lacking cottonwood and woody tree species recruitment, so in 2018 volunteers planted 80 cottonwoods along the bank and low-lying back-water channel behind the willow band. This area was chosen specifically because it is low and close to groundwater, increasing the chances of survivorship for the cottonwood plantings. Long-stem cottonwoods were used because they are grown in long narrow pots to force the root system to develop vertically, which makes is easier for their root systems to reach groundwater when planted. Volunteers dug 3 ft deep holes until damp soil was found for putting plantings into. Cages were constructed around each planting with two

u-post supports and welded wire fencing. These cages increase survivorship of plantings by protecting them from beavers and herbivory. CWCB funds were used to contract WRV to recruit volunteers, train and manage project leads and volunteers, bring necessary tools, provide meals, and help coordinate the volunteer event.

CWCB Funding used for Revegetation - Volunteers: $11,000

- $11,000 to WRV for a 2-day volunteer event in 2018

Education and Outreach

The DRRP makes it a priority to complete outreach and enhance education to local school groups and volunteers through restoration service projects that enhance plant communities along the river corridor.

In addition to the WRV event in 2018 (described above), the DRRP brought back WRV volunteers in 2019 and 2020 for various projects. In 2019, WRV volunteers finished construction of a baffle in East Paradox Creek (a tributary to the Dolores River) to help divert flows back into the main channel of the creek and re-water a stranded grove of old-growth cottonwoods. Finishing work included seeding between the posts of the baffle and weaving tamarisk slash between posts to act as a protective barrier from cattle. Volunteers also caged young cottonwoods, treated tamarisk resprouts, and helped install an interpretive. The interpretive sign (ordered from Fossil Graphics) was installed off Y11 road at the confluence of the San Miguel and Dolores Rivers and is mounted on a metal frame secured in the ground with concrete.

In 2020, WRV volunteers planted a variety of shrub and tree species along the river north of Gateway, CO in order to add biodiversity and complexity to riverside vegetation community. Although CWCB funds did not pay for contracting WRV in 2019 and 2020, CWCB funds did help pay for supplies for the project as well as for strike teams and restoration managers from RiversEdge West and the Southwest Conservation Corps to support these projects.

The DRRP also hosted two volunteer events for local school kids in 2019. School kids from the Paradox valley Charter School planted and installed caging around 10 cottonwood and 10 box elder trees (using the same techniques described above) at a riverside campsite in the canyon near the San Miguel confluence. Kids from the Gateway school planted a total of 60 plants encompassing a variety of native tree and shrub species along the river right in the town of Gateway, enhancing a local trail and providing native species diversity. CWCB funds were used for some of the materials and lunch for these volunteer events.

In the fall of 2019, the DRRP hosted a workshop for landowners that live along the Dolores River. CWCB funds were used to print annual reports and brochures and pay for space to host the workshop at the Naturita Community Center. Topics covered in the workshop included Russian knapweed treatment options and techniques, information on relevant NRCS programs, management of cattle in riparian areas, and an overview of the collaborative function of the DRRP with landowners.

Lastly, CWCB funds were used for study guides, testing, and license fees for DRRP strike team members to become licensed pesticide applicators. Colorado Department of Agriculture study guides created specifically for pesticide license exams were purchased to help educate crew members and leaders before they took exams.

CWCB Funding used for Education and Outreach: $2,283

- $35 WRV event supplies
- $127 School Volunteer Event Materials and Lunch
- $921 Interpretive Sign
- $470 DRRP Landowner Workshop
- $730 Strike Team Training (pesticide applicator testing and licensure)

Results

Secondary Weeds and Tamarisk Resprout Treatments – **308 acres treated**

Objective: 350 acres

- Southwest Conservation Corps Strike Team
  - Fall 2018
    - 17.5 acres of Russian knapweed and tamarisk re-sprout treatments by 3-person strike team on BLM Dolores River riparian habitat throughout the Tres Rios and Uncompahgre field offices
  - Spring 2019
    - 30.4 acres of hoary cress, perennial pepperweed, and tamarisk re-sprout treatments by 2-person strike team on Dolores River riparian habitat on Uncompahgre BLM field office sites and on Gateway Canyons Resort property near Gateway, CO
  - Fall 2019
    - 182 acres by of primarily Russian knapweed on repeat treatment sites and tamarisk re-sprouts on sites that had tamarisk removal in 2018 by 2 and 3-person strike teams on riverside BLM land throughout the Tres Rios and Uncompahgre field offices
  - Fall 2020
    - 77 acres on Russian knapweed and tamarisk re-sprout treatments by 2 and 3-person strike teams on riverside BLM land throughout the Tres Rios and Uncompahgre field offices

- Western Colorado Conservation Corps 2-person Strike Team
  - Spring 2020
    - 1 acre of Siberian Elm on a few riverside sites on BLM land in the Grand Junction field office

Figure 1: (Left) SCC Strike Team members used backpack sprayers filled with herbicide to treat tamarisk re-sprouts at a site along hwy 141 in 2018. (Right) WCCC strike team member posing next to a large Siberian elm tree he just cut.


Figure 2: (Left) SCC Strike Team leader using a backpack sprayer filled with herbicide to treat hoary cress on sites north of Bedrock, CO in 2019. (Right) Strike Team members treating tamarisk re-sprouts using chainsaws and machetes in Gateway, CO in 2019.


Figure 3: (Left) SCC Strike team measuring herbicide and filling backpack sprayers in 2020. (Right) SCC Strike Team crew leader spraying Russian knapweed in Big Gypsum valley in 2020.

Active Revegetation (Corps Strike Teams and Volunteers) – **36 acres**

Objective: 10 acres

- Southwest Conservation Corps Strike Team
  - Fall 2018
    - 25.4 acres of seeding on BLM riverside land in the Uncompahgre field office to provide cover where crews had removed tamarisk earlier that year

- Wildlands Restoration Volunteers
  - Fall 2018
    - 1.2 acres: WRV volunteers planted and caged 80 cottonwood trees and spread native grass seed around the disturbed planting on a site just downstream of the Big Gypsum boat launch

- Fall 2020
  - 7.4 acres: WRV volunteers planted a variety of native tree and shrub species on several sites along the Dolore River north of Gateway, CO

- Paradox Valley Charter School – student volunteer group
  - Fall 2019
    - 0.39 acres: Kids from the Paradox Valley Charter School spent a half day planting 20 cottonwood and box elder trees, improving a riverside campsite near the San Miguel confluence with the Dolores

- Gateway School – student volunteer group
  - Fall 2019
    - 1.85 acres: Gateway school kids planted a variety of native tree and shrub species (60 plants total) on Gateway resort property, improving an interpretive trail right in the town of Gateway

Figure 4: (Left) SCC strike team member spreading native grass seed in a disturbed area. (Right) School kids from the Paradox Valley Charter School planting cottonwoods that will hopefully grow to provide shade at the riverside campsite.

Figure 5: WRV volunteers planted 80 cottonwoods and installed caging for each tree along the Dolores River in 2018

Figure 6: (Left) WRV volunteers cutting tamarisk re-sprouts around newly planted and caged cottonwoods in 2019. (Right) WRV volunteer planting a box elder maple tree during the 2020 event.

Rapid Monitoring – **164 acres monitored**

Objective: 130 acres

- Southwest Conservation Corps Strike Team
  - 164 acres were monitored by a 2-person team over 3 weeks along the Dolores River on sites within the Uncompahgre field office boundaries

Figure 7: Members of the SCC rapid monitoring team quantified passive recruitment of key native species (such as the cottonwoods pictured) in 2018

Initial Tamarisk Treatments – **25 acres treated**

Objective: 14 acres

- Conservation Corps hand crews
  - Fall 2018
    - 6.1 acres removed by WCCC and SCC 8-person chainsaw crews at the "cement bridge" (river mile 113) in the Uncompahgre BLM field office

        - 1.3 acres removed by an 8-person WCCC crew between Paradox Valley and the Confluence of the Dolores and San Miguel Rivers (river mile 105) in the Uncompahgre BLM field office
        - 2.9 acres removed at the Bedrock Boat-ramp (river mile 97) and just upstream (river mile 96) in the Uncompahgre BLM field office by an 8-person SCC crew. This work greatly improves aesthetics and increases recreation value of one the Dolores River's most popular boat launches.
        - 3.4 acres removed by 8-person WCCC crews at the Serengeti Ranch wild horse sanctuary along Disappointment Creek, a major tributary to the Dolores River

- Western Colorado Conservation Corps Strike Team
    - Winter/Spring 2020
        - 11 acres of tamarisk was removed by a 2-person strike team near river mile 114 on BLM land just downstream of the "cement bridge" where crews removed tamarisk in 2018. This work is continuing a long-term effort to remove tamarisk along highway 141 near the Roc Creek confluence

Figure 8: Large patch of tamarisk before and after removal at the "cement bridge" site

Figure 9: WCCC crew member hauling cut tamarisk slash up the steep bank to be loaded into a chipper

Figure 10: WCCC crew working hard to tackle thick tamarisk along the bank where the Dolores exits Paradox valley

Figure 11: (Left) SCC Crew member working hard to take down an unruly tamarisk. (Right) WCCC crew removing tamarisk along Disappointment Creek.

Education and Outreach

Objective: 60 volunteers engaged, installation of 1 interpretative sign, 2 community workshops, 2 plant ID classes, training for corps strike teams

- **92 volunteers engaged:** The DRRP hosted a WRV event in 2018 (28 volunteers), 2019 (20 volunteers), and 2020 (22 volunteers). In 2019, the DRRP also hosted planting events for 9 school kids from the Paradox Valley Charter School and 13 kids from the Gateway School.
- **1 interpretative sign installed:** An interpretative sign was installed with the help of WRV at the Dolores and San Miguel confluence along Y11 road. This sign showcases the work of the DRRP and is designed to help educate travelers on the Unaweep Tabeguache Scenic and Historic Byway.
- **1 community workshop:** In the fall of 2019 the DRRP hosted a workshop for private landowners that live in the Dolores River watershed. CWCB funds were used to print annual reports and brochures and pay for space to host the workshop at the Naturita Community Center. Topics covered in the workshop included Russian knapweed treatment options and techniques,

information on relevant NRCS programs, management of cattle in riparian areas, and an overview of the collaborative function of the DRRP with landowners.

- **Training for corps strike teams:** Over the course of 3 years, CWCB funding paid for 9 pesticide applicator tests, 3 herbicide licenses, and 2 Wilderness First Aid classes for SCC strike team members.

Figure 12: 2019 Wildlands Restoration Volunteers group

Figure 13: Interpretative sign installed just off the road where the San Miguel meets the Dolores River

Figure 14: (Left) The SCC Strike Team learning about herbicide application during their first week of work in 2019. (Right) SCC strike team member helping out and planting a box elder maple tree during the 2020 WRV event

Conclusions and Discussion

Objectives and Accomplishments

Almost all objectives for this proposal were met and some were exceeded. Table 1 highlights objectives and associated accomplishments. Objectives that were not met are discussed below the table.

Table 1: Objectives and associated accomplishments

	Objective	Accomplishments
Secondary weeds and tamarisk resprouts	350 acres	308 acres
Active Revegetation	10 acres	36 acres
Rapid Monitoring	130 acres	164 acres
Initial tamarisk removal	14 acres	25 acres
Education and Outreach	60 volunteers engaged, installation of 1 interpretative sign, 2 community workshops, 2 plant ID classes, training for corps strike teams	92 volunteers engaged, installation of 1 interpretative sign, 1 community workshop, strike team training (9 herbicide license tests, 3 herbicide licenses, 2 Wilderness First aid classes)

One objective that was not met is acres of secondary weeds and tamarisk treatments. There are several reasons for this, one being that the SCC strike team lost crew members during the 2019 and 2020 fall seasons and had to run smaller 2-person crews. SCC programs are job training programs designed to help people find careers in conservation. This inherently leads to crew members sometimes leaving their seasons early for more permanent job opportunities, which was what happened in 2019. In 2020, a crew member left the team part way through the season due to complications surrounding covid-19. Although CWCB funds were used to support more weeks of 2-person strike team work, the lack of a third person for many weeks in the fall in 2019 and 2020 contributed to less overall acreage treated. Another reason this objective was not met was that more focus was put on active revegetation and initial tamarisk removal than originally planned when this project was proposed. The DRRP uses an adaptative management approach, re-evaluating treatment priorities and locations each year based on monitoring data and other information. It

became clear in the years following the award of this grant that the DRRP needed to shift focus a little (still within the scope of the grant) to meet restoration objectives. The DRRP ended up performing active revegetation on 36 acres instead of 10 and initial tamarisk removal on 25 acres instead of 14.

Another objective that was not met was the workshops and plant ID classes originally proposed under Education and Outreach. The DRRP experienced leadership turnover at the beginning of 2019 with the DRRP Restoration Coordinator at RiversEdge West leaving his position and the position re-filled in the summer. The former coordinator was the main person in the partnership driving this initiative and it was difficult for the partnership to pick these workshops and classes after he left. In fall 2019, the partnership did put together a successful workshop focused on education and connection for the landowners along the Dolores. Another workshop was planned for 2020, but was cancelled due to safety concerns surrounding covid-19.

CWCB accomplishments highlighted in this report contributed to even more restoration success. The DRRP as a private-public collaboration, matches agency, state, and foundation sources annually to meet restoration goals. Overall accomplishments of the partnership were as follows:

Overall 2018 Accomplishments:

- 31 acres of initial tamarisk treatments
- 35 acres of actively planted/seeded lands
- 94 acres of tamarisk resprouts treated
- 106 acres of secondary weeds treated
- 43 jobs created
- 7,633 hours of restoration service work by conservation corps crews
- 63 volunteers engaged

Overall 2019 accomplishments:

- 31 acres of initial tamarisk treatments
- 10 acres of actively planted/seeded lands
- 295 acres of tamarisk resprouts treated
- 198 acres of secondary weeds treated
- 62 jobs created
- 10,503 hours of restoration service work by conservation corps crews
- 63 volunteers engaged

2020 accomplishments have not been compiled as of the date of this report.

Monitoring

Rapid monitoring continues to be an integral part of DRRP work and is planned to take place on approximately 1/3 of restoration sites every year. Rapid monitoring occurs on all treated sites and sites planned for treatment, including the areas treated for initial tamarisk, secondary weeds, tamarisk resprouts, and active revegetation in this report. The Transition Plan for Monitoring and Maintenance (M&M) was developed and approved in 2014 in order to strategize the transition from intensive restoration efforts to follow-up monitoring and maintenance at a site-by-site level in order to assure ecological restoration success throughout the watershed. Restoration activities, monitoring, and maintenance are planned into the foreseeable future in order to protect the large investment made by all DRRP partners and local communities since 2009 to restore this beautiful river.

Lessons Learned

Active revegetation success, specifically planting of containerized plants, has always been a challenge for the DRRP given the remote and dry nature of the watershed. For the 2018 WRV planting event, long-stem

plants were used instead of normal containerized plantings. This coupled with a wet year in 2019 and very intentional planting placement led to very high success with this planting project. As of fall 2020, about ½ of the 80 cottonwoods planted are still alive. Practices implemented in this project are being incorporated into future cottonwood planting projects. Another approach that the DRRP started at the 2020 WRV planting event was installation of simple drip irrigation systems to water new plantings through the fall. These systems are comprised of water tanks and hoses that can be reused and moved to new planting projects each year. Hopefully this is another low-cost effective solution that can help increase success of planting projects.

DRRP leadership turnover at RiversEdge West and the Southwest Conservation Corps in 2019 left a gap in capacity, making it difficult to implement stewardship initiatives that tend to take a disproportionate amount of capacity (i.e. plant ID classes, workshops, volunteer projects) compared to other implementation activities. Staff at both organizations have since been able to fill most of these gaps, however, this turnover process highlighted the fact that turnover is inevitable and planning for that inevitability is crucial for success. To address this the DRRP is striving to improve its data management and tracking (i.e. all treatments, monitoring data, active revegetation, etc. is now in our partnership geodatabase with a suite of tablets for field crews to collect spatial data for every project) and project planning processes (all major planning documents are now in a Google Drive for increased sharing and visibility among partners). The DRRP will continue to prioritize these efforts so that projects are more easily picked-up where they were left off when turnover does happen.

Future Work

The DRRP restoration work is far from over and this contribution from CWCB helped the DRRP achieve many of its restoration goals for the past three years. The DRRP Memorandum of Understanding currently being renewed includes partners, individuals, funders, private landowners, and community members who are committed to DRRP restoration work through 2025.

Implementation plans for 2021 and 2022 include more initial tamarisk removal, secondary weeds and tamarisk re-sprout treatments, seeding and planting of native plants with volunteers and school groups, rapid monitoring, and educational events for the public. Although the partnership is now more focused on monitoring and maintenance, there are still many acres of tamarisk providing a seed source for future infestations that need to be treated. The DRRP is starting to look at harder-to-reach places along the river (i.e. the Dolores River Canyons Wilderness Study Area) for initial tamarisk removal, slowly but surely working toward the vision of a wholly restored Dolores River on a truly landscape scale. This work not only benefits the river and riparian ecosystems of the Dolores River, it continually has a positive impact on communities of Southwestern Colorado by providing jobs and training for local young adults, enhanced recreational opportunities, cleaner water sources, decreased fire hazard, and educational opportunities that increase public understanding and engagement in conservation.

Actual Expense Budget

See Attached

On behalf of the DRRP, we sincerely appreciate the significant contributions from CWCB over the years.

Thank you for your support!