Colorado Healthy Rivers Fund
2012 Final Report

GRANTEE and FISCAL AGENT (if different)
Southwest Conservation Corps

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PROJECT NAME
Rio Grande Restoration Project (RGRP)

GRANT AMOUNT
$15,000

INTRODUCTION AND BACKGROUND

The RGRP is a riparian restoration project that is the second such project based on the collaboration between the Southwest Conservation Corps (SCC), the Rio Grande Headwaters Restoration Project (RGHRP), and the Rio Grande Headwaters Land Trust (RiGHT). This collaboration was formed in order to carry out recommendations for the restoration and management of the Rio Grande as it winds through the San Luis Valley as identified in the 2001 Study and the 2007 Rio Grande Watershed Strategic Plan. These partners (SCC, RGHRP and RiGHT) hope to eventually secure enough funding to carry out all necessary hand crew restoration projects along the San Luis Valley portion of the Rio Grande. The first phase of this project includes six crew work weeks at four sites along the Rio Grande. Two weeks of work performed at two different sites were completed in 2011. During the fall of 2012, SCC crews completed an additional four weeks of restoration work along the Rio Grande. Two of those weeks were completed at River Valley Ranch II with a grant from the Colorado Healthy Rivers Fund.

TASK 1 – Rio Grande Restoration

Description of Task

Complete 2 weeks of restoration projects along the Rio Grande River near Monte Vista, CO to improve streambank stability and reduce future erosion.

Method/Procedure

SCC crews will slope streambanks, install willow bundles, and install tree revetments to rehabilitate degraded areas.

Deliverable

Two weeks of crew work

METHODS

With funding from the Colorado Healthy Rivers Fund, SCC crews completed two weeks of work on restoration projects along the Rio Grande at the River Valley Ranch II near Monte Vista, CO. This project seeks to halt accelerated erosion by stabilizing and re-vegetating streambanks. Crews used a multi-faceted approach to re-vegetation and relied on structure from a nearby reference ecosystem to inform plant choices. Methods included: sloping vertical streambanks to a 2:1 slope, installing willow bundles, and installing tree revetments. There was no seeding.

- Bank sloping: Corpsmembers utilized hand tools (pick-mattocks, shovels and McLeods) to grade vertical banks and create a gentle, 2:1 slope. This reduces the bank's propensity to erode, creates a more suitable surface for re-vegetation of native species, and allows the river to flood cottonwood galleries when it tops its banks.
- Vertical willow bundles: Corpsmembers harvested groups of dormant willow sticks, bundled them in groups of 6-8 sticks, and tied them together with twine. The willows selected were young, with smooth bark, which allows them to sprout roots from the stems when planted. The Corpsmembers then dug a small trench (6-8" deep) in the streambank, perpendicular to the river, and anchored the bundles into the trenches using wooden stakes, ensuring the bottom of the willow bundles were submerged as deep as possible in water. Because the Project was completed in the fall, during low flow, the trenches were dug below bankfull elevation. Bundles were placed along the river's edge every 1-2 feet. The bundles were then covered loosely with soil and then drenched gently with water to wash soil into the bundles and ensure good soil to stem contact. The stems will grow roots and shoots, taking hold in and revegetating the banks. Vertical bundles are designed to lay vertically up the bank which typically gives them an advantage on stream systems that have rapidly fluctuating water levels because no matter where the water level of the stream is, some part of the vertical bundle will be in the water.
- Tree revetments: Corpsmembers collected small (6-10' tall) Engelmann spruce, subalpine fir, lodgepole pine, and ponderosa pine trees that had been thinned and left as slash on a local Forest Service timber project. The trees were used to create tree revetments. Construction of the revetment includes placing a tree at the toe of the streambank, on top of the willow bundles. The butt end of the tree is pointed upstream and anchored by driving a duckbill into the bank and securing the tree to the duckbill with attached cable. The next tree is then moved into place with its top overlapping the butt of the first tree. The trees keep the flow off of the willow bundles, protect the banks from erosion, and allow silt and sand to deposit along the bank and within the tree branches. The deposited material forms a good seedbed and parent martial for riparian vegetation. By the time the revetment trees have decayed, the bank should be stabilized by the roots of the riparian shrubs and vegetation. As an added benefit, tree revetments provide excellent fish and wildlife cover

FINAL SUMMARY

Project Details
Dates: 10/15/2012 – 10/23/2012 (crew works 8 10-hour days, 80 hours/person)
Project Location: Longitude -110.89, Latitude 32.26

Project Accomplishments
Total acres cleaned or improved: 0.12
Total number of miles of river corridor improved: 0.25
Willow bundles harvested and planted: 308
Tree revetments installed: 79
Downed trees removed: 4

2012 was the second year SCC has worked on a project with RGHRP and both organizations will continue to strengthen this partnership by identifying best practices and lessons learned. The River Valley Ranch II project was a great opportunity for the SCC field crew to gain skills in a new area of conservation work and learn about the importance of water conservation and agricultural land management. Landowner Steve Massey and RGHRP Coordinator Heather Dutton both conducted educational activities for the crew and provided on-the-ground support. While the crew worked diligently, they did face some challenges including: beaver activity disturbing (literally stealing) harvested willow bundles; loss of a crew member due to behavioral issues; and underproduction based on the proposed goals. In the future, SCC will be able to better estimate the distance/area a crew can cover on this type of project. Additionally, SCC will provide more training to crew leaders who will be completing river restoration projects so that they are able to train their crew and tackle the project as efficiently as possible. Despite the challenges, however, the project was successful and SCC looks forward to completing more of this important work in the future.

Monitoring for the River Valley Ranch project will be completed by land owner Steve Massey, RIGHT and RGHRP. RGHRP will monitor the site with photopoints, Stream Visual Assessment Protocol (SVAP), and semiannual cross-section transects. This will allow partners to determine the long-term success of methods used and stability of the Project site. A similar project completed in 2011 showed 45-60% survival rates but RGHRP has seen varying degrees of success with these methods in the past and hopes that more projects will provide more data for an average rate of success. SCC will pursue additional funding with RGHRP in hopes of returning to the River Valley Ranch II site and completing additional restoration work and monitoring along the Rio Grande.

BUDGET

Description	Total Grant Funds	GOCO/CYCA Matching Funds	CWCB 2010 CHRF Funds (Secured by RGHRP)	Southwest Conservation Corps In-Kind	RGHRP In-Kind	Total
2011 – two weeks SCC crew		$12,000	$2,119	$8,518	$1,083	$23,720
2012 – two weeks SCC crew	$12,400			$8,118	$800	$21,318
Equipment - Lopers, Waders, Hammers	$1,283					$1,283
Supplies - Duckbills, Cables, Crimps, Stakes, Twine	$1,312					$1,312
Total	$14,995	$12,000	$2,119	$16,636	$1,883	$47,633

Description of Matching Funds

A grant from the Great Outdoors Colorado (GOCO) and Colorado Youth Corps Initiative (CYCA) initiative provided funding for two weeks of SCC crew work in 2011 on this project. RGHRP also provided cash match in 2011 with a grant from the Colorado Healthy Rivers Fund. The Southwest Conservation Corps provides an in-kind match for all project work which includes administrative costs and the value of volunteer time provided by AmeriCorps crew members. RGHRP also provided in-kind support through staff time preparing and supervising the project as well as use of supplies and equipment.

PROJECT PHOTOS

Above: Bank sloping to create 2:1 slope and reduce erosion. Right side of photo shows vertical banks before, left side shows progress by SCC crew.

Below: Preparing trenches for willow transplants on re-sloped bank

PROJECT PHOTOS

Above: Willow bundles transplanted (harvested, tied and staked) along stream bank to improve vegetation and prevent future erosion.

Below: Tree revetments installed along streambank