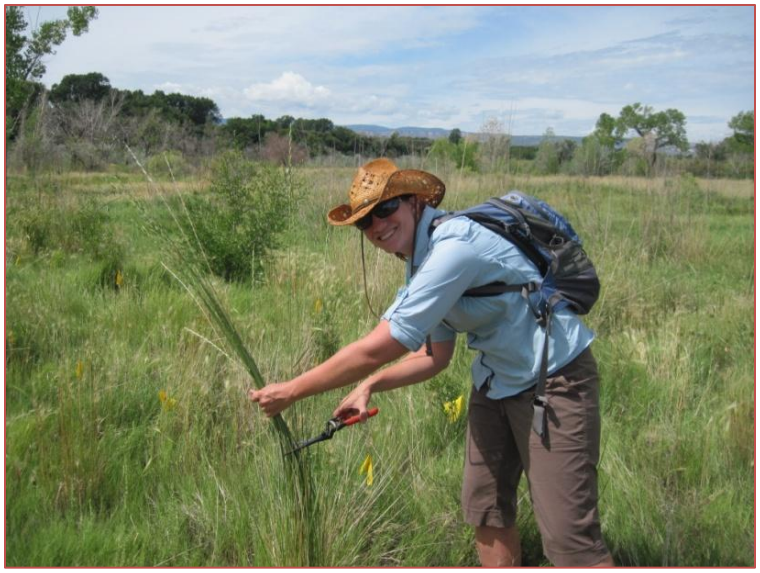
Colorado Healthy Rivers Fund

Tamarisk Coalition

Ecotype Specific Riparian Restoration Plant Materials Project



Final Grant Report
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Tasks 1-3

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Report Prepared by:
Shannon Hatch
Restoration Coordinator
Tamarisk Coalition

a non-profit alliance
working to restore riparian lands
Tamarisk Coalition P.O. Box 1907 · Grand Junction, CO 81502

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The following describes background, goals, and accomplishments as delineated in the Tamarisk Coalition's (TC) Colorado Healthy Rivers Fund (HRF) Scope of Work and as defined by larger TC Native Plant Materials Program objectives. Funding from HRF provided TC with the necessary support needed to further develop programmatic goals, both conceptually and financially. As such, the scope of the program has further expanded to include additional tasks and goals. Accomplishments supported by HRF funding are delineated.

I. Program Background

TC, based in Grand Junction, Colorado, is a 501c(3) non-profit organization whose mission is to provide technical assistance and educational support for the restoration of riparian lands. As part of that mission, TC has been helping landowners and land managers meet their active restoration goals. TC's Native Plant Materials Program has been designed to address the identified need for native riverside plant species for use in revegetation efforts on the Colorado Plateau.


Skunkbush sumac in 30" tallpot; 3:1 shoot to root ratio

Several community based watershed groups, located within western Colorado and eastern Utah, have been working towards the goal of watershed restoration, with an emphasis on the reestablishment of native species in areas currently occupied by tamarisk and Russian olive. Current projects focus on the revegetation of areas where tamarisk and Russian olive have been actively removed or where tamarisk has been affected by the tamarisk leaf beetle, a biological control agent introduced to manage tamarisk.

While many areas may naturally recruit, active revegetation is often necessary. The importance of using native plants in revegetation efforts has been emphasized in watershed restoration efforts; however, supply of locally adapted, or ecotype specific, plants that can be used with minimal post-planting maintenance is currently limited. There are local nurseries that specialize in the production of native plants, yet many of these nurseries are not geared towards large-scale production of ecotype specific plants in appropriate containers and/or growth forms for watershed restoration efforts.

Especially useful in arid land revegetation efforts are materials grown as longstem transplants and planted using deep planting methods. Deep planting methods employ the use of plants grown in tallpots or treepots, which allow for high shoot to root development. Plants grown in this manner develop robust root systems capable of extending into the capillary fringe, which is the permanent soil moisture above the water table. As a result, the need for post-planting irrigation is greatly reduced or eliminated. Revegetation success rates of 90% or more have been found in areas where these techniques have been used.

Despite their proven utility, ecotype specific and longstem plant materials are generally unavailable across the Colorado Plateau except at the Los Lunas Plant Material Center (LLPMC) in New Mexico. Land managers often use commercial nursery stock un-adapted to their project sites, or they result to transporting materials from the LLPMC.

Due to the identified need for suitable sized cottonwood poles for revegetation efforts, TC is also coordinating the establishment of a cottonwood pole plantation in western Colorado. TC believes that it can, through the creation of this plantation, greatly reduce costs while simultaneously improving

product supply for restoration practitioners. Once established, cottonwood poles can be sold at minimal cost to help generate maintenance funding as well as supplemental income for landowners.

Ultimately, TC envisions local nurseries sustainably growing native longstem products and cottonwood poles. From cursory research, there appears to be resistance and/or barriers to the adoption of these grow-out methods commercially. TC would like to further explore options for including commercial growers in restoration efforts. Given the anticipated need for materials in the Grand Valley alone, TC recognizes a niche that could profitably be filled by local entrepreneurs. TC has been working with the Upper Colorado Environmental Plant Center (UCEPC) to help further develop technologies that can subsequently be transferred to commercial growers.

II. Budget

TC was awarded $10,000 from HRF; TC provided $5,000 in matching funds. These funds were leveraged to achieve grant support from both the Central Utah Project Completion Act (CUPCA) and the Walton Family Foundation (WFF). In-kind contributions and additional matching funds contributed substantially to the project as well. Please see Table 1 for a detailed budget breakdown.

Table 1: Tamarisk Coalition Budget - Native Plant Materials Program

Type of Funding	Donor	Amount	Purpose/Notes
HRF Grant Amount:	Healthy Rivers Fund	$10,000	Coordination, training & education, seed collection and plant grow-out
HRF Matching Funds:	Private TC donor	$5,000	Staff Support
Additional Matching Funds:	TC Discretionary Funds	$19,109	Staff Support/Training/Supplies
	Central Utah Project Completion Act	$15,000	Plant Materials Development and Riparain Planting Training
	Walton Family Foundation	$31,000 $10,000 $8,500	Plant Materials Development for Dolores and Escalante Rivers Cottonwood Plantation Development Riparian Planting Trainings
In-Kind Contributions:	Upper Colorado Environmental and Los Lunas Plant Material Centers	$8,750	Staff time and materials
	TC Volunteer Seed Collection	$1,282	2 hours of seed collection with 30 volunteers; volunteer labor rate of $21.36/hr (see: http://www.independentsector.org/volunteer_time)
Total Budget:		**$108,640**	

III. Program Goals and Accomplishments

The following lists goals and accomplishments for TC's Native Plant Materials Program; **corresponding HRF task numbers, as delineated in the Scope of Work, are indicated in parentheses:**

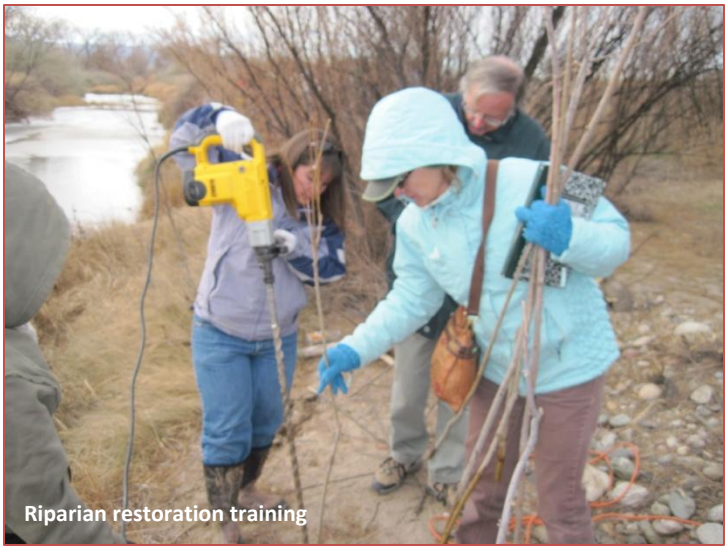
1. Provide seed collection and riparian restoration training for land managers, landowners, and other non-profits (TASK 1)


Seed collection training

Accomplishments:
TC, in partnership with UCEPC, hosted seed collection training near Grand Junction, Colorado on August 5th, 2010. Fifteen attendees from three western states and eleven different agencies participated in the training. Steve Parr from the UCEPC led the training, with assistance from three other plant center staff.

The morning was spent in the classroom, learning the basics of seed collection, documentation and storage. In the afternoon site visits were made to Orchard Mesa Wildlife Area and a location along Plateau Creek, to the east of Palisade. Participants were able to look at seed from a number of species in varying stages of development. Collections were made of skunkbush sumac (*Rhus trilobata*) and alkali sacaton (*Sporobolus airoides*). UCEPC gathered the collected seed and processed it at a later date; the skukbush sumac was later propagated.

Additional species were identified by TC for collection; several of these species were collected by staff over the course of the summer. Several species were not found in sufficient quantity to collect; some species that were initially targeted were also changed due to their limited local availability. TC will be working with professional growers to collect these species in the future. Please see the Table 2 for more detail on targeted species and collection status.


Riparian restoration training

On November 30th and December 1st, 2011, two riparian restoration training sessions were held in Grand Junction. TC partnered with UCEPC, LLPMC, the Colorado Division of Wildlife (DOW), and the City of Grand Junction. Sixty attendees participated in the training, which included both classroom and outdoor sessions. Over the course of two days, numerous cottonwood poles, willow cuttings, and longstem products were installed at a 70-acre City of Grand Junction site that was recently cleared of tamarisk. These efforts complement other restoration actions, including native grass seeding. Participants also learned how to install a groundwater monitoring well and how to sample soil salinity.

TC is planning on hosting two more trainings this fall, with funding from the Walton Family Foundation, in Escalante and Moab, Utah. These trainings will help educate watershed partnership members currently engaged in restoration activities on successful planting methodologies.

Table 2: Species Identified for Seed Collection and Propagation Status

Scientific Name/ Common Name	Collected by TC	Propagation Status
Acer negundo/ box elder	Yes; seed not viable	UCEPC to use White River Source; will start product Spring 2011
Baccharis salicina/ baccharis	Yes; small quantities	Limited production
Fraxinums anomala/ single leaf ash	Yes; seed not viable	Will need to re-collect
Rhus trilobata/ skunkbush sumac	Yes; also volunteer collection	Seeds in production; may need to collect more
Ribes aureum/ golden currant	No*; stock collected from UCEPC	In production
Ribes cereum/ wax currant	No**; stock collected from UCEPC	Seeds recently out of cold stratification; will start Spring 2011
Rosa woodsii/ Woods' rose	Yes, insufficient quantities; however, cuttings available	Will start Spring 2011 from cuttings
Shepherdia argenta/ silverleaf buffaloberry	No*; using UCEPC collection from Dolores	100 in longstem production; 1,000 linear feet in bare root production
* Seed was not found locally on Colorado River; TC will be working with professional seed collectors to obtain these species in the future. ** This species, while of interest to UCEPC, not found at lower elevation sites; taken off future seed collection lists.		

2. Work with various partnerships and collaborators to help define needs/goals for active restoration

Accomplishments:
TC staff have been actively engaged with numerous watershed partnerships, including the:

- Dolores River Watershed Partnership (DRWP)
- Escalante River Watershed Partnership (ERWP)
- Northwest Colorado Watershed Partnership (NWCP)
- Southeast Utah Tamarisk Partnership (SEUTP)

TC is currently working, through the DRWP and the ERWP, to identify and plan for restoration needs in these watersheds. Staff have actively participated on committees tasked with shaping restoration goals; in many instances, TC staff have also taken leadership roles in the creation of restoration prioritization documents that identify species for development.

3. Help facilitate the development of appropriate replacement plant species for restoration (TASKS 2 and 3)

A. Support development of ecotype specific longstem products for restoration efforts on the Dolores and Escalante Rivers; collect or coordinate seed collection to support efforts **(TASKS 2 and 3)**
B. Develop and maintain cottonwood plantation(s) in the Grand Valley of Colorado; poles produced to be used in local restoration efforts **(addresses portion of Task 3)**

Accomplishments:

A. Longstem Production

UCEPC has begun propagation of several species from seed collected by TC and from other Colorado sources. Together, HRF and CUPCA funds will support the development of 350 longstem plants. Please see Figure A for more specifics on the propagation status of these plants. Plants should be available for restoration efforts in two to three years.

With funding from the Walton Family Foundation, TC will facilitate the development of additional riparian species at local nurseries on the Colorado Plateau. The exact number of plants that will be made available with these funds is not yet known.

B. Cottonwood Pole Plantation Development


Cottonwoods at UCEPC

TC is working with three local nurseries to develop cottonwood seedlings from cuttings and wildland collected seed. Nurseries are currently growing seedlings until they are large enough for installation at a plantation which is currently being established on private land in Mack, Colorado. Several cottonwood poles were also cut and have been installed at the plantation. Approximately 4,000-5,000 cottonwoods will be planted over the next two years.

A private landowner has donated the use of his land, irrigation water, and labor to plant and maintain the plantation. The landowner will, in turn, sell mature cottonwood poles to land managers and other conducting restoration. Proceeds from the sale will support continued plantation operation and maintenance. Plantation stock can be cut approximately three times before replanting needs to occur.

Walton Family Foundation funding is supporting this project.

4. Work with partners to develop a business model for the sustainable production of locally grown native plant materials

TC has been working with a number of partners to further explore options for how the development and sale of native plant materials can be incentivized and ultimately become a profitable and sustainable endeavor. This continues to be an on-going effort that has been informed by conference participation and other networking opportunities. TC recently attended the Colorado Plateau Native Plant Initiative Annual Meeting and the National Native Seed Conference and TC is currently exploring collaborative opportunities with the Bureau of Land Management (BLM) and Uncompahgre Project.

IV. Grant Evaluation:

Funding from HRF enabled TC to host relevant and needed training on seed collection and riparian restoration techniques for agencies, non-profits and landowners in the Grand Junction area. Support also provided indispensable funds to begin working towards the goal of providing native plant species for restoration efforts. HRF funding was critical in building additional backing to further program goals.

TC staff learned a great deal over the last year about challenges to native seed collection and plant propagation and marketing by local nurseries. As part of our current work, more emphasis is now being placed on identifying ways to enhance communication and collaboration between suppliers and users of native plant materials. TC is also exploring ways to strategically partner with other organizations with complementary goals, such as the Natural Resources Conservation Service, BLM, and Rim to Rim Restoration in Moab, Utah.

TC is also working to develop additional training modules, outreach materials, and Best Management Practices geared towards private landowners and other smaller organizations conducting riparian restoration.

Based on feedback received from multiple watershed organizations, native plant materials development for active restoration efforts remains an important, if not critical, need. TC continues to document its work and that of other organizations in an effort to help inform ongoing efforts. A recently developed strategic plan helps to guide these efforts and provides benchmarks for continued success.