



## **FINAL REPORT - Project Agreement 2011-WNTI # 2011SG-6**

March 12, 2012

**To:** Robin Knox, Western Native Trout Initiative

**Name of Organization:**

The Quivira Coalition [501(c) 3] EIN# 31-1551770

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**Project Title:** *Surviving Climate Change: Building Resilience for the Rio Grande Cutthroat Trout*

**Project Location:** Comanche Creek Watershed, located in the western half of Valle Vidal Unit of the Carson National Forest, Taos County, New Mexico.

**Amount granted from the Western Native Trout Initiative (WNTI):** **\$ 3,000**

**Project Overview:**

The goal of this long-term project is to fully implement a restoration plan for the greater Comanche Creek watershed that includes returning stable stream dynamics to the main stem, as well as the tributaries, of Comanche Creek and providing sustainable habitat for the native Rio Grande cutthroat trout (RGCT) by lowering summer water temperatures, increasing cover, narrowing and deepening the stream channel, and reducing stream bottom deposits. We are accomplishing this goal by reducing sediment influx from tributaries and upland sources (primarily dirt roads), stabilizing stream banks, and promoting growth of streamside vegetation.

The targeted mission of the 2011 Comanche Creek field season was to: (1) improve our understanding of riparian zone restoration techniques and practices through assessment of ecosystem health and restoration structures installed in the Comanche Creek watershed in previous years; (2) continue efforts to restore and maintain the integrity of the Comanche Creek watershed for the survivability, adaptability, and health of RGCT and other native species in the creek, thereby positively impacting the species' ability to survive anthropomorphic challenges such as global climate change; and (3) provide New Mexico residents/volunteers with educational and hands-on opportunities that directly relate to maintaining the resilience and function of riparian ecosystem services by demonstrating sound, effective restoration theory and practices.

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## **I. Background**

Founded in 1997 by two conservationists and a rancher, the Quivira Coalition is a nonprofit organization, based in Santa Fe, New Mexico, dedicated to building economic and ecological resilience in western working landscapes. *Our mission is to build resilience by fostering ecological, economic and social health on western landscapes through education, innovation, collaboration, and progressive public and private land stewardship.*

For the past 11 years, the Quivira Coalition has led a Rio Grande Cutthroat trout (RGCT) habitat restoration project on Comanche Creek, located in the Valle Vidal Unit of the Carson National Forest, in partnership with numerous organizations and agencies. The goal is to restore degraded segments of Comanche Creek to health to help the RGCT. Our experience has taught us that on-the-ground restoration solutions include: (1) in-stream structures that stabilize stream-bank erosion, increase stream-bank water storage capacity, and improve riparian zone vegetative cover and diversity; (2) side-stream restoration activities that reduce erosion, stabilize headcuts, re-wet meadows, and improve hydrological cycles; (3) mitigation or elimination of “bad” roads and road-related features (such as poorly placed culverts) that increase sediment erosion into the creek; (4) encouragement of the growth of bank-side native plants (to shade the water for the fish); (5) management of the impacts of herbivory; (6) annual maintenance and modification of structures as needed; and (7) annual monitoring and assessment of progress.

The innovative restoration methodology that Quivira employs was developed by pioneering watershed restoration specialist, Bill Zeedyk. His techniques use native materials (river rock and cedar posts) to re-establish native riverine and riparian habitat, reinstate natural river length, reduce erosion, address the causes of increased water temperature, and add wetland acreage to riverine systems. Zeedyk’s methods work because they address the root causes of what ails a creek (poorly constructed and maintained roads, over-grazing, mineral/timber extraction, etc...), and Quivira’s implementation of his techniques has been proven to effect positive change over the long-term. [For more information on Zeedyk’s techniques visit: [http://www.quiviracoalition.org/QC\\_Publications/Field\\_Guides/index.html](http://www.quiviracoalition.org/QC_Publications/Field_Guides/index.html)]

## **II. Success in 2011**

During the summer 2011 season we extended the effect of ongoing restoration work and multiplied the benefits from treatments already implemented with public/private funds and public participation. The specific objectives/deliverables and corresponding actions that we undertook in the 2011 field season are as follows:

**DELIVERABLE # 1:** Improved understanding of riparian zone restoration techniques and practices through assessment of ecosystem health and restoration structures installed in the Comanche Creek watershed in previous years.

- **Action:** Stream restoration specialists and volunteers spent two days monitoring and assessing the successes and failures of existing in-stream structures. The assessment provided us with the basis for creating our 2011 Field Season Workplan – which we implemented during the August 2011 Volunteer Workshop.
- **Action:** We initiated a geomorphologic survey and monitoring program for the tributaries in the Upper Comanche Creek Watershed. We are in the process of developing professional volunteer monitoring teams to assist with photo and geomorphologic monitoring in the future. We made good progress towards this goal in August and September 2011.

- **Action:** Re-took photos at permanent photo-monitoring points along Comanche Creek to update existing (10 year) photo-documentation project. These photos are re-taken each year over the Labor Day weekend (1<sup>st</sup> Monday in September). We continue to see significant recovery of vegetation along the eroded banks of Comanche Creek. (See example below).



2006



2011

**Comanche Creek Photo Point #23.** The post vane structure in the photograph has enable the creek to build back its own bank, and grow much needed vegetation that will prevent future erosion.

**DELIVERABLE # 2:** Continued efforts to restore and maintain the integrity of the Comanche Creek watershed for the survivability, adaptability, and health of RGCT and other native species.

- **Action:** During the August 2011 Volunteer Workshop, we performed maintenance (specific techniques resulting from our assessment) on existing in-stream structures (bank stabilization and grazing exclosures) that: (1) stabilize stream-bank erosion, (2) increase stream-bank water storage capacity, and (3) improve riparian zone vegetative cover and diversity. (See attached photos for examples of work performed).

**DELIVERABLE # 3:** Provided FREE hands-on volunteer and educational opportunities for the interested public on restoration techniques and practices.

- **Action:** In August of 2011, a team of stream restoration specialists ran a weekend-long FREE workshop on stream and wetland restoration techniques for 30+ volunteers. In a single weekend, we accumulated a total of nearly **500 volunteer hours**.

#### **VI. Support from the Western Native Trout Initiative**

The total cost of the *Building Resilience for the Rio Grande Cutthroat Trout* project for the 2011 field season (i.e. watershed health assessment survey, maintenance of existing structures, and educational workshop for volunteers) was **\$16,314**. Funds from the **Western Native Trout Initiative** were dedicated solely to the *on-the-ground implementation* portion of the project in the 2011 field season.

We used funding from the **Western Native Trout Initiative** to leverage additional funding from the local chapter of Trout Unlimited (Truchas Chapter), the Taos Soil and Water Conservation District, and the Patagonia Foundation.

- **DELIVERABLE 1:** Comanche Creek watershed health assessment \$ 2,000
  - **DELIVERABLE 2:** Maintenance of existing structures (bank stabilization & exclosures) \$ 12,314
  - **DELIVERABLE 3:** Workshop on stream restoration techniques \$ 2,000
- Project Total \$16,314**

**Western Native Trout Initiative's Contribution Total \$3,000**

**Specific items funded:**

| <u>Item Description</u>                                  | <u>WNTI Funds</u> | <u>Match Funds</u> | <u>Total</u>    |
|--|-------------------|--------------------|-----------------|
| Contractual Services (Watershed Restoration Specialists) | \$3,000           | \$2,786            | \$5,786         |
| Quivira Personnel  | \$0               | \$5,750            | \$5,750         |
| Travel   | \$0               | \$2,251            | \$2,251         |
| Equipment/Small Tools/Supplies                           | \$0               | \$2,527            | \$2,527         |
| <b>TOTAL</b>   | <b>\$3,000</b>    | <b>\$13,314</b>    | <b>\$16,314</b> |

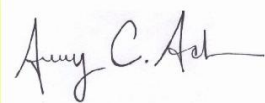
**VII. Partnerships**

The Quivira Coalition has a long history of partnerships. In the 2011 Comanche Creek field season, we partnered with a diverse array of federal, state, private, business, and non-profit entities including the US Forest Service, the New Mexico Department of Game and Fish, the Army Corps of Engineers, the Truchas Chapter of Trout Unlimited, a number of watershed restoration specialists, and a plethora of volunteers -- over 180 volunteers have provided 2,800 hours of assistance to our Rio Grande cutthroat trout project on Comanche Creek over the last four years.

The usual route for the recovery of a “species of concern” like the Rio Grande cutthroat trout is through regulation, litigation and confrontation. This action can be very divisive to affected communities. This project, in contrast, uses proactive collaboration and innovation to achieve species recovery by working to unite communities in the restoration effort – and we believe it is succeeding.

On behalf of Quivira Staff and volunteers, we want to thank the **Western Native Trout Initiative** for your support in 2011! We accomplished all of our goals for the 2011 field season, and we look forward to the possibility of working with the **Western Native Trout Initiative** in the future to protect the habitat of the Rio Grande cutthroat trout in northern New Mexico.

All the best,



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# Photos from the 2011 Comanche Field Season



As part of the assessment process, 2011 volunteers get a tour of previous work completed in the Comanche Creek watershed, August 2011.



2011 spring runoff damaged many of the grazing exclosures.



Volunteers in-training to be part of our professional photo-monitoring team, August 2011.



Volunteers work to repair a damaged grazing exclosure, August 2011.



Stream Restoration Specialist, Bill Zeedyk, teaches volunteers how to "read a riparian landscape," August 2011.



Comanche Point, at the confluence of Comanche Creek and the Little Costilla River.



Getting youth involved! The girl in the red hat is using Comanche Creek as the subject for her 2012 Science Fair project.



We are engaging IMPORTANT partners like the US Forest Service.



A Rio Grande cutthroat trout caught on a dry fly (and released) by a Quivira volunteer, August 2011.



The reward for the volunteers....