



**2011**

**ANNUALREPORT**

# TABLE OF CONTENTS

	Page
<b>QUIVIRA HISTORY, PROGRAMS AND ORGANIZATIONAL NEWS</b> .....	2
History .....	2
Programs .....	3
Organizational News .....	4
<b>ANNUAL CONFERENCE AND AWARDS</b> .....	7
10th Anniversary Conference .....	7
Clarence Burch Award .....	9
Outstanding Leadership in the Radical Center Awards .....	10
<b>RESILIENCE</b> .....	11
<b>LAND AND WATER PROGRAM</b> .....	12
Comanche Creek .....	12
Dry Cimarron .....	14
Restoration on Upper Cedro Creek .....	17
Red Canyon Reserve .....	18
Other Land and Water Program Accomplishments .....	18
Land and Water Partnerships .....	19
<b>NEW AGRARIAN PROGRAM</b> .....	20
New Agrarian Education .....	20
Quivira's New Agrarian Program .....	20
Meet the New Agrarian Mentors .....	21
Success in 2011.....	22
Building on NAP's Success in 2012 .....	24
<b>TRIBAL PARTNERSHIP PROGRAM</b> .....	25
Building Bio-Cultural Resilience on the Navajo Nation .....	25
Success in 2011.....	26
Looking Forward.....	29
<b>CARBON RANCH PROJECT</b> .....	30
<b>FOUNDATION, GOVERNMENT, ORGANIZATIONAL AND PUBLIC SUPPORT</b> .....	32
<b>QUIVIRA COALITION 2011 SUPPORTERS</b> .....	33
<b>2011 CASH FINANCIAL REPORT</b> .....	34
<b>2011 BOARD AND STAFF</b> .....	35

# QUIVIRA HISTORY, PROGRAMS AND ORGANIZATION NEWS

Founded in 1997 by two conservationists and a rancher, the Quivira Coalition is a non-profit organization based in Santa Fe, New Mexico, dedicated to building economic and ecological resilience on western working landscapes.

We do so through four broad initiatives:

(1) improving land health; (2) sharing knowledge and innovation; (3) building local capacity; and (4) strengthening diverse relationships.

Our projects include: an annual conference, an agrarian ranch apprenticeship program, riparian and uplands demonstration restoration projects in New Mexico, capacity-building collaboration with the Ojo Encino Chapter of the Navajo Nation, a journal called *Resilience*, and the promotion of the idea of a carbon ranch, which aims to mitigate climate change through regenerative food production and land stewardship.

In 1997, our goal was to expand an emerging radical center among ranchers, conservationists, scientists and public land managers by focusing on progressive cattle management, collaboration, riparian and upland restoration, and improved land health. Our original mission was “to demonstrate that ecologically sensitive ranch management and economically robust ranches can be compatible.”

We called this approach The New Ranch and described it as a movement that “operates on the principle that the natural processes that sustain wildlife habitat, biological diversity and functioning watersheds are the same processes that make land productive for livestock.” The principles of The New Ranch were disseminated through workshops, lectures, publications, grants, consultations, collaborative land and water demonstration projects, newsletters, the New Ranch Network, and an annual conference.

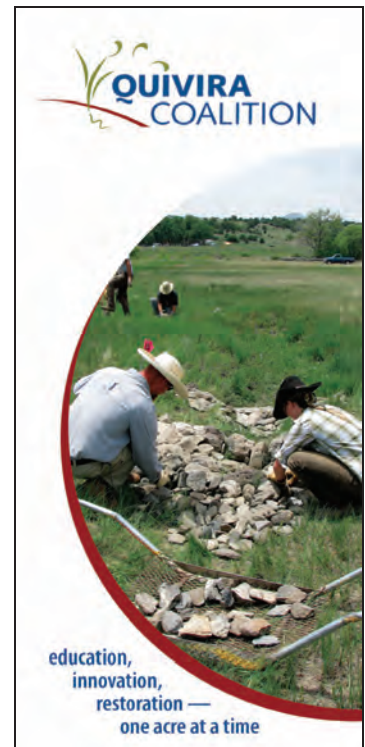
From 1997 to present, at least 1 million acres of rangeland, 30 linear miles of riparian drainages and 15,000 people have directly benefited from the Quivira Coalition’s collaborative efforts. We have organized over 100 educational events on topics as diverse as drought management, riparian restoration, harvesting water from ranch roads, conservation easements, reading the landscape, ecological and photo monitoring, water harvest-

ing, low-stress livestock handling, grassbanks and grassfed beef. We have published numerous newsletters, journals, bulletins, field guides and books, including a rangeland health monitoring protocol and an in-depth manual on restoring function and health to incised channels. And lastly, we managed the innovative Valle Grande Grassbank, located near Santa Fe, eventually becoming producers of local, grassfed beef ourselves.

But most importantly, Quivira has sparked ideas across the West that grew over time into small bonfires of change. Through our work, we’ve convinced ranchers to adopt conservation practices, environmentalists to value ranching, agencies to be more open to innovation, scientists to become more involved and the public to support all of the above.

In conjunction with our success, the world kept changing — which meant we needed to keep changing too. Although no one knows precisely what the decades ahead will bring, there are enough indicators of change to say with confidence that the 21st century has inaugurated a new era. Whether the concern is climate change, peak oil, ecosystem service decline, overpopulation, species extinction, or food and water shortages, the challenges ahead are varied and daunting.

We believe that one response to these multiple challenges is to increase ecological and economic resilience of communities and landscapes. The dictionary defines resilience as “the ability to recover from or adjust easily to misfortune or change.” In ecology, it refers to the capacity of plant and animal populations to handle disruption and degradation caused by fire, flood, drought, insect infestation or other disturbance. Resilience also describes a community’s ability to adjust to change, such as shifting economic conditions, or a steady rise in temperatures.





In 2005, the United Nations published its *Millennium Ecosystem Assessment*, a global evaluation of ecosystem services on which human well-being and environmental health depend. These services include the provision of food, fresh water, wood, fiber, fuel, and biodiversity; climate, flood, pest and disease regulation; nutrient cycling, soil stability, biotic integrity, watershed function, and photosynthesis; and spiritual, educational, recreational, and aesthetic experiences. According to the Assessment, nearly all of these services are in gradual or steep decline.

To help address these issues, in the fall of 2007 the Quivira Coalition Board adopted a new mission statement: *to build resilience by fostering ecological, economic and social health on western landscapes through education, innovation, collaboration and progressive public and private land stewardship.*

## Programs

From its inception, the Quivira Coalition has engaged in a variety of educational activities, including conferences, publications, hands-on outdoor workshops, outdoor classrooms, websites and public speaking engagements.

**Annual Conference.** This upbeat event has become a successful forum for a “radical center” of ranchers, conservationists, public land managers and members of the public. Themes have included: *Bridging the Urban-Rural Divide*, *Innovation and the Next Generation*, and *Building Resilience*. Speakers have included: Wendell Berry, David Kline, Bill deBuys, Patty Limerick, Richard Louv, Deborah Madison, Jonah Western, Bill McKibben and many others. The theme of our 2011 Conference was *New Agrarians: How the Next Generation of Leaders Tackle 21st Century Challenges*.

**Resilience.** The title of Quivira’s journal, *Resilience*, reflects the ongoing mission of the organization to build ecological and economic resilience on western working landscapes. However, accomplishing this mission requires a new agrarianism, which Wendell Berry describes as “a philosophy, a practice, an attitude, a loyalty and a passion – all based in close connection with the land. It results in a sound local economy in which producers and consumers are neighbors and in which nature herself becomes the standard for work and production.” We see our journal as a way to give voice to this critical new movement.

**Land and Water.** Since 2001, we have directed an innovative, collaborative restoration effort in the Comanche Creek watershed of the Valle Vidal Unit of the Carson National Forest. Our goal is to improve the chances of survival for the Rio Grande cutthroat trout, New Mexico’s state fish. Comanche Creek is typical of many areas that have experienced adverse human impacts, including poor timber management, overgrazing by livestock, and mineral extraction. Today, the few remaining populations of Rio Grande cutthroat trout face a significant new challenge: climate change, which includes a likely reduction in the abundance of clear, cold water that the trout require for survival. To build resilience for the Rio Grande cutthroat trout, Quivira, with key partners, is working to expand the current habitat restoration work from selected segments of Comanche Creek to its entire 27,000-acre watershed.

In addition to Comanche Creek, the Quivira Coalition hosts restoration activities around New Mexico. Red Canyon Reserve is a 320-acre property south of Socorro, willed to the Quivira Coalition in 2002 by Mike Belshaw. The Reserve has become a successful demonstration of how to restore and maintain the ecological integrity of small land parcels. Members of the Quivira Coalition Board and the Red Canyon Reserve Conservation Team provide oversight of management goals and objectives including wildlife habitat improvement, upland and riparian restoration, Reserve road improvements, infrastructure maintenance, ecological surveys, land health and production monitoring and project development.

**New Agrarian Program (NAP).** Our food system is at a crossroads. Enthusiastic young farmers and ranchers are ready to take part in the sustainable food movement, but how will they receive the mentorship they need? Quivira’s New Agrarian Program has responded to this challenge by creating a comprehensive leadership-training program for new agrarians—the only one of its kind in the West. Since 2008, apprentices have been trained and graduated in fields that include sustainable ranching, grass-based dairy and artisan cheesemaking, and locally-sourced fiber production. Apprentices represent the essence of “agrarian” and the hope for the future of the sustainable agriculture movement. By the beginning of 2012, NAP will have graduated seven new agrarians.

**Tribal Partnerships.** Since 2005, the Quivira Coalition has been collaborating with the Ojo Encino Chapter of the Navajo Nation to rebuild resilience in both the biological and cultural environments of the Navajo Nation.

What started as a focused effort to develop grazing plans for severely degraded rangelands has since blossomed into a holistic effort to restore iconic features of the landscape, manage a feral horse population, manage erosion, re-engage youth, learn from elders, grow a local food system and build capacity in a Navajo-run non-profit called Hasbídító. Our ultimate goal is to empower Hasbídító and the Ojo Encino Ranchers' Committee as they work to create a bio-cultural landscape that will be resilient in the face of climate change.

**Carbon Ranch Project.** This new project, directed by Courtney White, will explore and share climate change mitigation and adaptation strategies that sequester CO<sub>2</sub> in soils and plants, reduce greenhouse gas emissions, and produce co-benefits that build ecological and economic resilience in local landscapes.

## Organizational News

**Quivira hosted the Wild and Scenic Film Festival.** On March 3, 2011, the Quivira Coalition hosted the Wild & Scenic Film Festival in Santa Fe, New Mexico. This successful event was attended by over 100 people, and served as an opportunity for Quivira to engage its urban Santa Fe audience. Jack Loeffler kicked off the event with some inspiring words about Quivira. We then showed seven thought-provoking films, relating to the type of work that Quivira is engaged in around the Southwest. Our feature film was *The Greenhorns* – a documentary by farmer-activist Severine von Tscharner Fleming that explores the lives of America's young farming community—its spirit, practices, and needs. We also hosted a raffle for festival participants, in which we were able to give away locally-donated products. We are grateful to Jack Loeffler, the local businesses who made donations, the national corporate sponsors, and the organizers of the Wild & Scenic Film Festival for making it possible for the Quivira Coalition to meet new friends and celebrate conservation in our community.

**Quivira's New Look.** In early 2011, under the expertise of staff member Ellen Herr, Quivira developed a new visual logo for the organization and created a new brochure. In early 2012, Quivira will re-design the website in step with the new logo and easier access of information.

**Executive Director Sabbatical in 2012.** On February 1, 2012, Courtney White began an eight-month sabbatical from his role as Executive Director. As part of the Carbon Ranch Project, during this sabbatical he will be researching and writing a book titled *The Carbon Puzzle:*



Avery C. Anderson and Courtney White

*Reassembling Land and Livelihoods in the 21st Century.* In addition to the book, Courtney will be working on a new website ([www.carbonranching.org](http://www.carbonranching.org)) and continuing his outreach activities. This is timely and important work and Courtney would like to thank Staff and Board for granting him this opportunity, as well as the Compton, Lydia B. Stokes, and New Cycle Foundation Fund, among others, for supporting the Carbon Ranch Project.



During Courtney's sabbatical, Avery C. Anderson (formerly Quivira's Capacity Building and Mentorship Program Director) will be the Acting Executive Director of the Quivira Coalition. This is an exciting and challenging opportunity for Avery and we know that she'll do a fantastic job.

#### **Building Quivira's Capacity in 2011 (and 2012).**

The Quivira Coalition has been a highly effective organization since our founding in 1997. We are, however, realistic about the fact that the next decade will be significantly different from the past ten years in terms of financial, political, social and even planetary challenges for all non-profits. Some of the challenges we anticipate include: (1) a potentially large and long-term downsizing of state and federal funding for conservation work (which currently financially supports our riparian restoration projects) due to budget-cutting and political agendas; (2) a possible reduction in philanthropic giving due to another major downturn in the national economy (and another anemic recovery); (3) increased competition among non-profits for dwindling resources; and (4) new levels of regulatory and bureaucratic complexity, especially among public land agencies, that could impede implementation of new work.

Some of these challenges will also be opportunities – and sorting them out was one of our main objectives when, in the summer of 2011, the decision was made to apply for an Organizational Effectiveness (OE) grant from The David and Lucile Packard Foundation, which Quivira was awarded in November of 2011. Over the next year and a half the organization is committed to assessing its strengths and weaknesses and developing a strategic plan that builds resilience for the organization in the next decade.

Fortunately, Quivira has a wealth of experience (14 years) in turning daunting challenges into unique opportunities. Resilience in the future will look different than today and the generous grant from the Packard Foundation is helping us look down the road.

**Organizational Effectiveness.** The goal of this process is to help Quivira continue to be effective, resilient and innovative for the next decade in an increasingly tumultuous political, social, financial and planetary climate. The intent is not to revisit the organization's mission statement or basic programs, but instead to help Quivira prepare for the future through a strategic planning process that involves Board, Staff and selected Quivira Community members. The end product of the process is to produce a Resiliency Plan that includes re-focused programs, diversified funding sources, clear messaging, active community involvement and re-energized Staff.

The strategic planning process began in December 2011 and will continue (in phases) over the next year and a half (see Quivira's Organizational Effectiveness Plan, page 6). PHASE 1 focused on team building through Staff and Board retreats and mission and programmatic sharpening. PHASE 1 was completed before Courtney began his eight-month sabbatical on February 1, 2012.

Again, the goal of PHASE 1 was NOT to change the organization's mission statement or radically change our basic program areas. Instead, the objective of this first phase was to enable all of us to clearly articulate the mission and sharpen the list of programs that will help us achieve our goals pursuant to our mission.

In the end, we accomplished this objective, and more. As a result of PHASE 1, we have produced two retreat reports with a Holistic Goal for the organization, a "scorecard" that reflects how well each of our programs align with our Holistic Goal, a revised organizational structure, and a new graphical representation of the way our programs are inter-related. Having completed PHASE 1, we are now ready to begin the next phase of our strategic planning process.

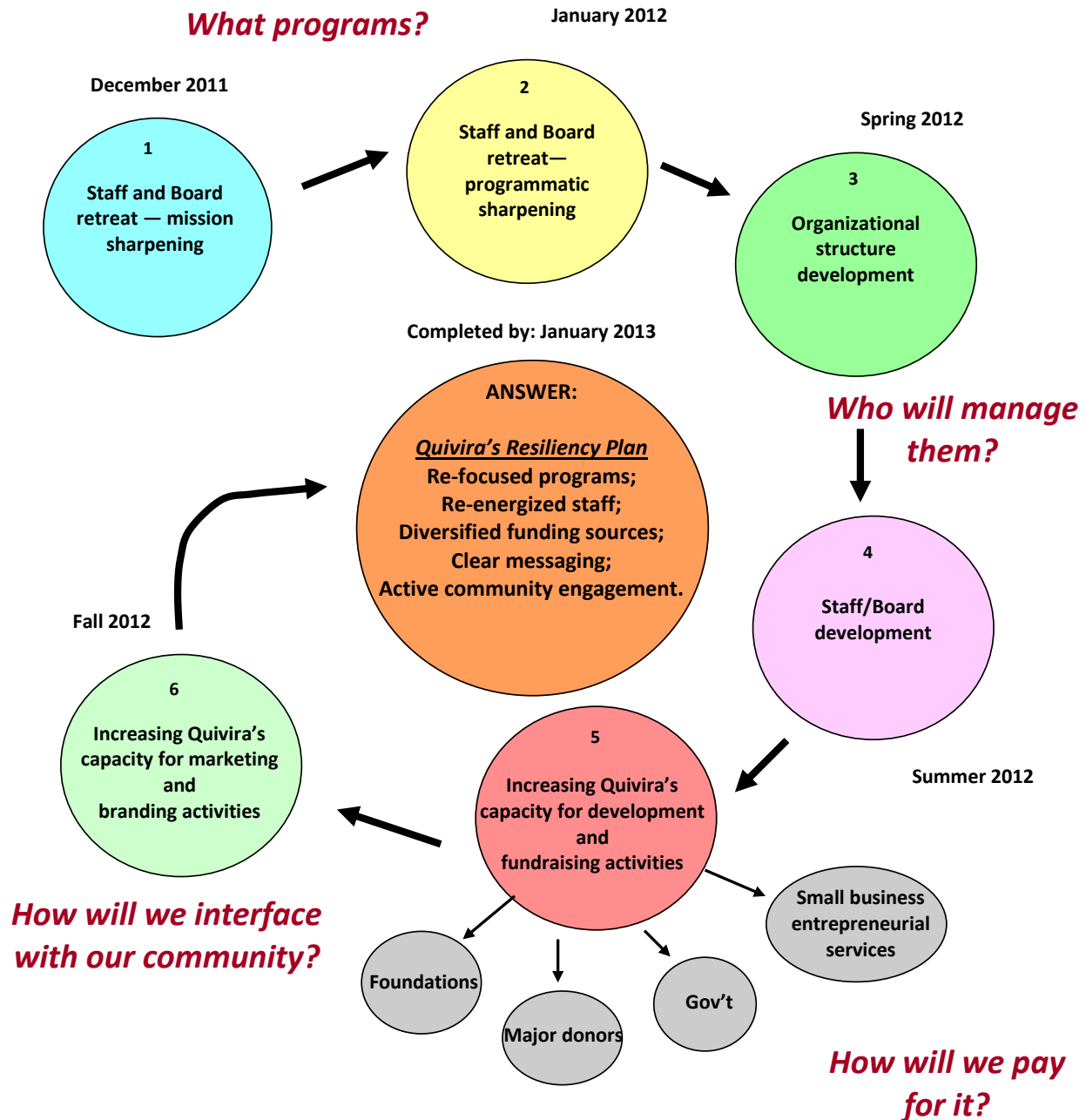
education,  
innovation,  
restoration—  
one acre  
at a time



## The Quivira Coalition's Organizational Effectiveness Plan

Anguished Question: *How will the Quivira Coalition continue to be effective, resilient and innovative for the next decade in an increasingly tumultuous political, social, financial, and planetary climate?*

Quivira's roadmap to meeting these challenges...



# ANNUAL CONFERENCE AND AWARDS

## 10th Anniversary Conference

Quivira Coalition's 10th Anniversary Conference, *New Agrarians: How the Next Generation of Leaders Tackle 21st Century Challenges* was held November 8 – 10, 2011 at the Embassy Suites Hotel in Albuquerque, New Mexico. In addition to well-known authors, experts, and practitioners, 80% of the Conference speakers were young agrarian leaders under the age of 37. They are a diverse group working hard to successfully meet the challenges of the 21st century.

Executive Director, Courtney White, had this to say about the 2011 conference: "Across the nation a new agrarian movement, centered on food and land health, is growing into a dynamic force. Led by youth (including the young-at-heart) and their mentors, this burgeoning movement is tackling some of the most daunting challenges of our time: food security, land restoration, conservation, climate adaptation and sustainable prosperity. In the process, they are overturning traditional paradigms of conservation and agriculture. In this Conference we heard from a wide variety of new farm, ranch and conservation leaders and their innovative, hands-on ideas and practices that are changing the way we look at the land, our water and ourselves."

**Grassroots of Grazing: Young Urban Farmers Provide Reasons to Believe.** The following testimonial by Jim Gerrish was excerpted with permission from the *Stockman Grass Farmer*.

*I have been going to conferences for over 30 years now encompassing a wide variety of topics, mostly related to agriculture, resources, or food. Of course, if we are serious about eating healthy food, then we must also be serious about resources and agriculture. If we are serious about agriculture, then we must be serious about food. If we don't take care of all of our resources we will have even greater food issues than we have now. It is all so interrelated that we really cannot separate issues of food, agriculture, and natural resources.*

*A lot of you know Dawn and I are foodies on this end of the thread, and many of you also know we are strongly involved in the alternative agriculture and food sector.*



*I don't get to go to many conferences that involve serious natural resource management, alternative agriculture themes, and the Real Food movement all in one place. That's where we went last November.*

*The venue was the Quivira Coalition 10th Annual Conference in Albuquerque, New Mexico. It easily ranks in the top five conferences I have attended over the last 32 years. It gives me reason to believe in the future of farming and ranching, food vs. commodities, and the youth of America. For more information, check out their website at [www.quiviracoalition.org](http://www.quiviracoalition.org) and look at the program for the 2011 Annual Conference.*

*I opened the conference with a one-day workshop, with the theme of "Ranching in the 21st Century," attended by 270 people, about half of whom were under 30 years of age which is pretty unusual for an agriculture conference these days. Most of them didn't look like your typical farm kids. While that might seem unremarkable to some of you, put it in this context. The average age of farmers and ranchers in the U.S. is [57] while the average age of beef producers is 63. We are not a healthy industry. After years of farm and ranch parents telling their kids to go to town and get a job, we are about out of the chance for the next generation returning to the farm or ranch.*





Jim Gerrish (center), and Severine von Tscharnher Fleming, (right) discuss young farmers and ranchers with another conference attendee.



National Young Farmers' Coalition exhibit at the 2011 Conference.

*Into the fray step a bunch of enthusiastic punk urban farmers and ranchers. I got a lot of thank you's from many of them for my recent columns in SGF discussing appropriate education for beginning farmers and ranchers. I had advocated basic liberal arts education and that is from where most of this group has come. These guys and gals are coming from a different background than young people who grew up on farms and ranches.*

*Visit this website for exciting information on this movement: [www.thegreenhorns.net](http://www.thegreenhorns.net). There are over 7,000 young farmers and ranchers in this group which has only existed for about four years. If they had told me this group had 700 members, I would have been impressed. This is the Facebook, Twitter and other social media farming movement. They have barn raisings, tree plantings, chicken killings, and all kinds of other old fashioned community farming activities called together across cyberspace.*

*They are involved in everything from rooftop gardens in big cities (<http://rooftopfarms.org>) to going back to the country and living with Grandma or Aunt Irene and taking over the family farm ([www.masumoto.com](http://www.masumoto.com)). From a Vietnamese college student fighting for food justice to city kids doing on-farm butchering, it was an inspirational group. What makes me even more excited for the future*

*of pasture-based farming is almost none of them are vegetarians. As Severine von Tscharnher Fleming, founder of the Greenhorns, said in her presentation, 'Nothing sexier than a hot young man butchering a hog.' Maybe not her exact words, but the meaning was clear. These young people are up to their elbows in working with the land and livestock and they're excited about it. Severine's presentation at Quivira may have been the best I have ever seen at any conference anywhere in the world.*

*One after another, these young people got up and told their stories and presented their vision for the future of American agriculture. These visions are not ones a lot of people in mainstream agriculture have seen or heard before. Farm Bureau and NCBA [National Cattleman's Beef Association] might not like it, but those organizations are not providing the regeneration of agriculture and the repopulating of rural areas. We need new blood in this industry and here is an opportunity for agriculture revitalization.*

*Too many of my generation (the over 55 crowd) believe kids today are lazy, selfish and all they want to do is play video games and watch TV. What I heard from these kids is they are tired of convenience, having everything easy, and no interface with the real world. They are not afraid*

*to get their hands dirty, but they are also not interested in a subsistence existence. This is not the 'back to earth' movement of the 1960s and 70s. I saw enough of that earlier movement to know this is something completely different. They want to make a good living off the land, not just survive. They are into product development and diversification, aggressive marketing, and a very capitalistic approach to farming, but with social justice as a core belief.*

*As a result of the three days we spent with this group, Dawn and I got fully recharged and inspired to continue to run the good race and fight the good fight. I finally have reason to believe the future of American agriculture is a little brighter than I thought it might be. We're already planning to see them again next year. Maybe you should do likewise.*

*Real food from real people. We love it and encourage you to visit some of the links I have listed.*


### Clarence Burch Award

The Clarence Burch Award is given by Andrew Dunigan and the Dunigan Family to honor the memory of Andy Dunigan's grandfather, Clarence Burch, an innovative and enterprising rancher who courageously embraced new ideas and methods of "doing business." The award recognizes individuals, organizations and others who have led by example in promoting and accomplishing outstanding stewardship of private and/or public lands.

2011 Nominees included:


- Clark Fork Coalition, Missoula, Mont.  
[www.clarkfork.org](http://www.clarkfork.org)
- Cliff Garrison, Ranch Manager, Hearst Ranch  
San Simeon, Calif.
- The Diablo Trust, Flagstaff, Ariz.  
[www.diablotrust.org](http://www.diablotrust.org)
- Diane Snyder, Sonoran Institute, Bozeman, Mont.
- Jack and Tuda Libby Crews, Ute Creek Cattle Co.  
Bueyeros, N.M., [www.utecreekcattlecompany.com](http://www.utecreekcattlecompany.com)
- Livestock and Land Program, Central Coast of  
California, <http://livestockandland.org>
- Orella Stewardship Institute (OSI), Gaviota, Calif.  
<http://orellaranch.com/OR/Welcome.html>
- Three Rivers Alliance, Republican River Basin, Colo.  
<http://threeriversalliance.org>
- Yager/Van Duzen Environmental Stewards,  
Fortuna, Calif.

The 2011 (\$20,000) Clarence Burch Award was presented to the **Three Rivers Alliance (TRA)**, a watershed group whose mission is to sustain the vibrant natural and human communities of the Republican River Basin by promoting good stewardship of its land, water and wildlife. The Three Rivers Alliance serves and welcomes landowners as members from the 6,000,000-acre Republican River watershed in northeast Colorado.



## Three Rivers Alliance

The mission of the Three Rivers Alliance (TRA) is to sustain vibrant natural and human communities of the Republican River Basin by promoting good stewardship of its water, land, and wildlife.



THREE RIVERS ALLIANCE



## Outstanding Leadership in the Radical Center Awards

The Fourth Annual Recognition Awards for Outstanding Leadership in the Radical Center is dedicated to the “four legs” of the Quivira Coalition’s original “chair”—ranchers, conservationists, civil servants and researchers. We recognize those individuals in each category who have shown remarkable and enduring leadership in the difficult job of working in the Radical Center. As author and conservation leader Bill deBuys described it—the place where people are coming together to explore their common interests rather than argue their differences.

In 2011, the Quivira Coalition’s Board and Staff were honored to recognize:

- **RANCHING. Guy Glosson** is a friend and mentor to the Quivira Coalition. He has managed Mesquite Grove Ranch, Snyder, Texas, for 20 years and teaches low-stress livestock handling clinics on ranches in Montana, Texas, New Mexico, Colorado, Hawaii and in Africa.
- **CONSERVATION. Robin Seydel** is a health and environment community organizer. For more than 25 years she has worked on building the alternative economic system at La Montañita Co-op as newspaper editor and coordinator of membership, community development and education.
- **CIVIL SERVICE. George Long** works with the U.S. Forest Service, Carson National Forest, Questa Ranger District as a Wildlife Biologist. Partnerships and grants became his main focus to accomplish wildlife habitat objectives on the Questa Ranger District. In 1999, George was part of a team of biologists who received the USDA Secretary Honor Award for native Rio Grande cutthroat trout habitat restoration and partnership work.
- **RESEARCH. Bill deBuys, Ph.D.** is an author and conservationist. His efforts have led to the permanent protection of more than 150,000 acres of wild lands in North Carolina and the Southwest. He also developed and directed the Valle Grande Grass Bank; was the recipient of the 2000 National Range Management Award of the U. S. Forest Service; served as founding chairman of the Valles Caldera Trust; and his most recent publication, *A Great Aridness: Climate Change and the Future of the American Southwest*, examines the precariousness of life in the Southwest and the likely impact on the region of climate change, which promises to transform the Southwest as emphatically as it is already altering the Arctic.



Guy Glosson



Robin Seydel



George Long



Bill deBuys



## RESILIENCE

The title of our journal, *Resilience*, reflects the ongoing mission of the Quivira Coalition to build ecological and economic resilience on western working landscapes.

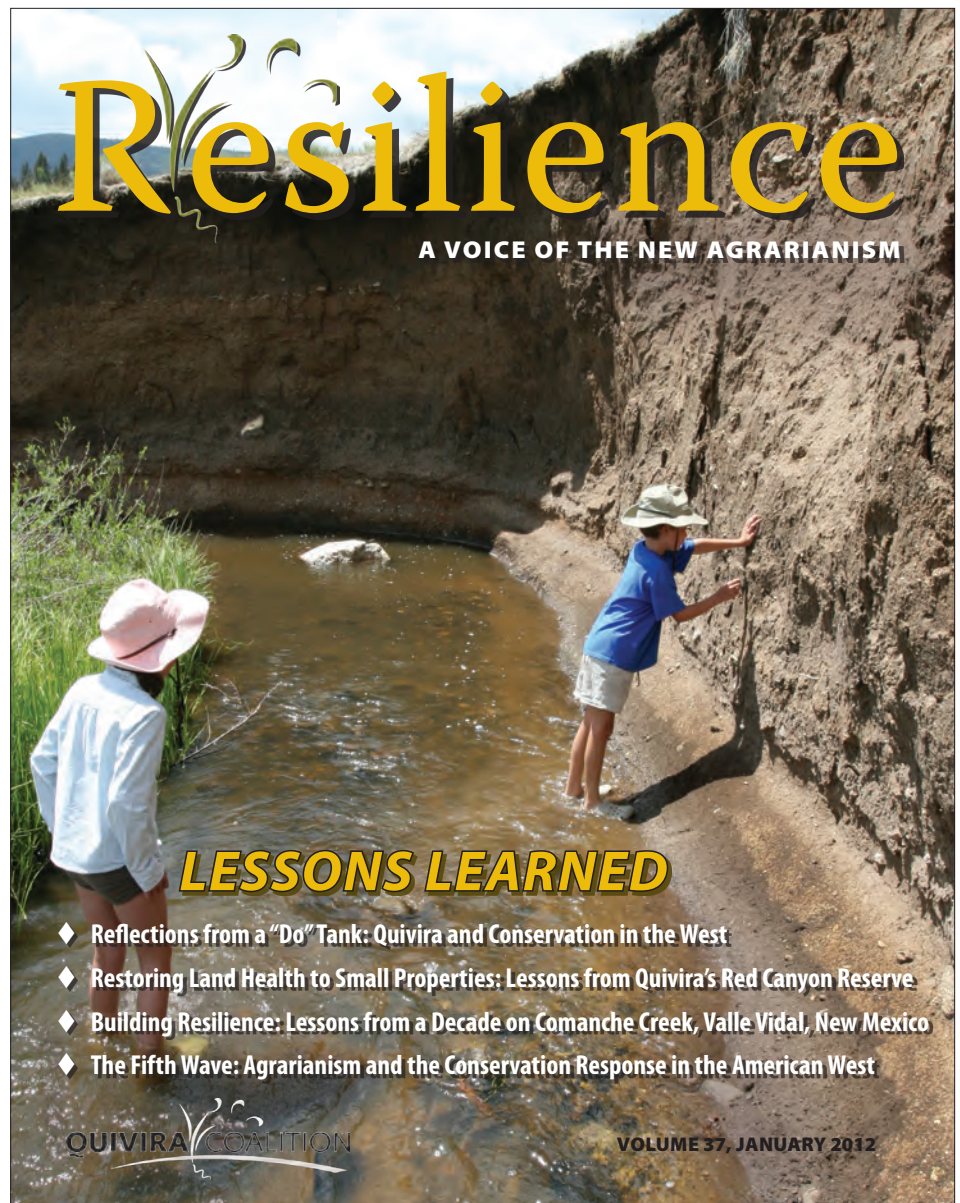
### ***Lessons Learned, January 2012***

Most of the writing and layout was accomplished in 2011; therefore, we have included Journal #37 in the 2011 Annual Report.

It has been nearly twenty years since the collaborative conservation movement—often called the Radical Center—ignited across the American West. From the founding of the Malpai Borderlands Group in southern Arizona and New Mexico, to the rise of the Blackfoot Challenge in Montana, this movement challenged long-standing paradigms about natural resource preservation, extraction and the role of working lands in the West. Initially it was met with a great deal of skepticism (and some outright hostility) by a variety of organizations, agencies and institutions who considered the movement as either hopelessly naïve, unworkable in practice, of dubious scientific merit or contrary to the aims of conservation generally. However, in spite (or because) of this opposition, the collaborative effort grew from a few isolated outposts into a region-wide movement that today has been broadly institutionalized in federal policy, academic curricula, foundation programs and non-profit mission statements.

The question now is: What's next? What worked? What didn't? What lessons have been learned? How has the movement changed? What are its successes? What are its failures? Did it have demonstrable results? Does it address the challenges of the 21st century?

In this special edition of our Journal, we explored these and other questions from our experience as an early member of the radical center. It opens with a



review of Quivira's work to date, moves to an in-depth analysis of a Quivira-directed restoration project, and concludes with a rumination on agrarianism and the future of the conservation movement.



©Patricia Jenkins 2011

# LAND AND WATER PROGRAM

## Land and Water Program in 2011

Quivira's Land and Water Program represents our commitment to land health, restoration, collaboration and progressive stewardship of natural resources. Over the years, we have been engaged in a variety of work ranging from induced meandering projects to grassbanks and local food production. Today, our work concentrates geographically in north-central New Mexico, our Red Canyon Reserve in southern New Mexico and in the Santa Fe area. Additionally, we participate in various committees and coalitions that are also committed to implementing land health projects.

The innovative restoration methodology we employ 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, and mineral/timber extraction, as well as other historical land uses. Quivira's implementation of his techniques has 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)].



Since 2001, the Quivira Coalition has directed two long-running riparian restoration projects, one on public land (Comanche Creek) and the second on private land (Dry Cimarron), with the goal of building long-term resilience. An in-depth article on the Comanche Creek project can be found in our January, 2012 Journal, *Resilience - Lessons Learned*.

## Comanche Creek

The Comanche Creek watershed is located on the west side of the Valle Vidal Unit in the Carson National Forest and is managed by the Questa Ranger District. Comanche Creek is a part of the Rio Costilla watershed which drains into the Upper Rio Grande Basin in northern Taos County, New Mexico.

**Background:** In 2001, the Quivira Coalition was approached by New Mexico Trout, a non-profit conservation organization, for assistance in their efforts to improve the survival chances of the native Rio Grande cutthroat trout (RGCT), New Mexico's state fish, in Comanche Creek. Over the last few decades, populations of RGCT across the region have been reduced to 10% of their historic range as a result of a many factors, including competition from non-native trout species, habitat degradation and loss, surface water diversion and depletion, stream fragmentation and isolation due to adverse land use impacts, including poor timber management, overgrazing by livestock, and mineral extraction. These activities created numerous inadequately constructed and maintained roads, depleted vegetation in riparian zones, leading to raw streambanks, all of which increased erosion rates and amplified the sediment load within the 27,430-acre (43 square miles) watershed, thereby threatening the viability of the RGCT population.

**Project Goal:** The goal of the Comanche Creek Rio Grande Cutthroat Trout Habitat Restoration Project is to fully implement a restoration plan for the greater Comanche



Restoration Specialists, Bill Zeedyk, Steve Carson and Craig Sponholtz, lead volunteers from the 2011 Comanche Creek Restoration Workshop on a tour of past restoration work.



Creek watershed that includes returning stable stream dynamics to the main stem and tributaries, and providing sustainable habitat for the native 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 streambanks, and promoting growth of streamside vegetation. In accomplishing these goals, we are able to provide a multitude of 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.

**Implementation:** Our experience has taught us that on-the-ground restoration solutions should include: (1) in-stream structures that stabilize streambank erosion, increase streambank 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.

Since 2001, our work in Comanche Creek has focused on the main-stem of the creek from the tributary of Grassy Creek to the confluence with the Rio Costilla. Funding from Federal, State of New Mexico, and private sources, along with the hard work of literally hundreds of volunteers has led to the implementation of 5.8 miles of in-stream restoration treatments with an additional 4 miles of road work completed in the upper watershed.

Funds from the Patagonia Corporation, Taos Soil and Water Conservation District, Trout Unlimited, Truchas Chapter, the Sulica Fund, and the Western Native Trout Initiative supported 2011 activities in the Comanche Creek Watershed and extended ongoing restoration work and multiplied the benefits from treatments previously implemented with public/private funds and public participation.



Volunteers from the 2011 Comanche Creek Restoration Workshop assess the success of a re-enforced post vane structure.

**2011 Field Season Recap:** The highlight of each year’s work in the Valle Vidal is the Comanche Creek Volunteer Workshop. In August 2011, 27 volunteers (donating 432 hours) gathered to spend two days performing vital maintenance work on in-stream structures and exclosures that have been constructed during the last 10 years. A critical need for 2011 was to repair damage to grazing exclosures caused by a large spring runoff event. Volunteers enthusiastically removed tangled wire and pulled damaged posts to repair the exclosures to ensure that the riparian vegetation would not be unduly grazed by wildlife and livestock. These volunteer efforts helped to stabilize streambank erosion, increase streambank water storage capacity, and improve riparian zone vegetative cover and diversity.

This commitment from our partners and volunteers will ensure that the resources invested in past work will continue to improve the watershed’s resilience. We accomplished this due to our wonderful volunteers.

In September, Quivira Staff and volunteers spent time monitoring and assessing the successes and failures of existing in-stream structures, taking notes and drafting a maintenance plan. Staff and volunteers also re-took photos at permanent photo-monitoring point locations along Comanche Creek to update the existing (10 year) photo-documentation project. Photos are re-taken each year, the first Monday in September, and we continue to document significant recovery of vegetation along the eroded banks of Comanche Creek.

As part of a geomorphologic survey and vegetation monitoring program for the tributaries in the Upper





Volunteers work together in August 2011 to repair a grazing enclosure along the lower reach of Comanche Creek.

Comanche Creek Watershed, Quivira is developing experienced volunteer monitoring teams to assist with photo, geomorphologic and vegetation monitoring.

### Long-Term Accomplishments:

**Working at the landscape scale.** The impressive scale of this project—10 years, a 42 square-mile watershed, hundreds of volunteers, over 200 in-stream structures built, over 50 small grazing enclosures, 83 road improvement structures, and several wet meadow restorations—demonstrates the effectiveness of involving members from different communities, over an extended period of time, in a united restoration effort.

**Measurable benefit to the ecosystem.** The Quivira Coalition has been on-the-ground for 10 years in the Valle Vidal system, and we have kept detailed records of the observed change during that period. Results from monitoring and evaluation serve not only as testament to the effectiveness of our work, but also have been the guide by which we have improved our techniques. The measurable results from an ecological perspective have been the recovery of wet meadow systems, re-vegetation of eroded stream banks, cleaner/clearer/cooler in-stream flow, healed head-cuts, and the resurgence of wetland vegetation at bankfull width along the stream. The restoration treatments have been documented by geomorphologic and vegetation monitoring, photo-documentation, and a yearly survey by stream restoration practitioners. We will employ these evaluation techniques again in the 2012 field season to document further progress.

**Measurable benefit for the volunteer community.** From a social perspective, measurable results have come in the form of volunteers – more than 180 people (2,900

volunteer hours) in the last four field seasons at Comanche Creek. Volunteers provide invaluable assistance in all aspects of the work in the Comanche Creek watershed. In exchange, volunteers benefit from the expert instruction provided by our watershed restoration specialists during Quivira's free summer workshops. We are actively increasing public awareness about the importance of being stewards of trout habitat, and simultaneously using volunteer enthusiasm and energy to get work done on the ground.

**Value of collaboration.** 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.

### Dry Cimarron River

The Dry Cimarron is a tributary of the Arkansas River system and flows over 698 miles through four states. The headwaters of the Dry Cimarron originate in northeastern New Mexico on Johnson Mesa west of Folsom (Colfax County), and flows perennial interrupted through northeastern New Mexico, across the Oklahoma border, on into Colorado, eventually making its way to Kansas. The specific site for this restoration project is Rainbow Ranch near Folsom, New Mexico.

**Background:** In 2002, we were contacted by Sunny Hill, who had recently returned to her family's farm, the Rainbow Ranch, located on the Dry Cimarron River, 30 miles east of Raton, New Mexico. She had heard about the Quivira Coalition's progressive grazing management and riparian restoration techniques, and wanted to know if Quivira could help her save the family farm, which was struggling both ecologically and economically.

Specifically, she faced a serious dilemma: in years previous, Sunny's family had made decisions to straighten or otherwise alter particular sections of the Dry Cimarron. Their decision to do this was influenced by their sincere belief that they could save valuable farmland from being eaten away by the river's ever-widening meander bends. As a result of a variety of factors, including some out of their control, the Dry Cimarron River had become highly entrenched along almost its entire length on their land, up to 25 feet in places, and was aiming to go deeper. The deepening ravine dropped the water table on the farm, and also threatened to undermine the bridge that



A non-permitted earthen dam across the Dry Cimarron River, before being decommissioned, September 2001.

A mechanically-straightened section of the Dry Cimarron River. The intention of the modification was to protect a hay field.



the family had built so they could reach their homes. Mechanically straightening the river in several places (cutting off meanders) unintentionally exacerbated the problems that the family was trying to solve. In the entrenched channel, water flowed faster and bit harder into the remaining meander bends.

Additionally, Sunny's father, Jack Williams, had built an earthen dam across the river (without permits or permission), and the US Army Corps of Engineers had decided that it would have to be removed. This decision upset her father, who saw it not only as an affront of his private property rights, but also as a criticism of his efforts to save the farm from the erosive effects of the river. Mr. Williams had tried other mitigation strategies over the years as well, including the creation of tire and old car dumps at key erosion points. None of it worked—the river continued its entrenchment and its erosion of their valuable farmland.

Fortuitously, Sunny Hill returned to the family farm at exactly the right moment. She understood the concerns of the US Army Corps of Engineers and went to work in a manner that both honored her father's earnest intent to protect the family's land, and was simultaneously in line with the laws that address "navigable waters of the United States."

Soon after Sunny's return to Rainbow Ranch, there was a second fortuitous turn: the Surface Water Quality Bureau of the New Mexico Environment Department decided to do an analysis of the Dry Cimarron. Their results showed that it was impaired for a variety of conditions under the Clean Water Act, including high temperatures, and too many dissolved solids, stream bottom deposits and ammonium. This analysis was bad news for the creek on one level, but on another it meant that the Dry Cimarron could now be a candidate for financial assistance from federal and state agencies to help restore the river.

**Project Goals:** Working together with Sunny Hill and Bill Zeedyk, the Quivira Coalition submitted and received a number of grants to restore the portion of river running through Rainbow Ranch. The specific goals included:

(1) increasing the river's sinuosity and channel length by reinstating certain meanders; (2) raising the river's bed level; (3) re-vegetating eroding banks; (4) decreasing sediment inputs; and (5) changing the season of use in the riparian corridor by livestock to winter and further controlling access with fencing. Restoring the health and resilience of a three-mile reach of the Dry Cimarron river has been implemented over the last nine years.

Original funding for Phase I of the project came from a 2002 Environmental Protection Agency 319 (d) Water Quality Grant and Rainbow Ranch. In 2009, a New Mexico River Ecosystem Restoration Initiative (RERI) grant, administered through the New Mexico Environment Department's Surface Water Quality Bureau, provided financial support for Phase II. Throughout both phases, cash and in-kind funds were provided by Rainbow Ranch, the Quivira Coalition and workshop volunteers.

The primary goal of our Dry Cimarron RERI grant, awarded in May 2009, is to restore and maintain in-stream and riparian ecosystem functions and the associated ecosystem services along the section of the Dry Cimarron River on Rainbow Ranch.

**Implementation:** The project began with a riparian, rangeland and cultural assessment of the property, followed by the development of a plan for restoration work. Permits were obtained from the US Army Corps of Engineers and the New Mexico Environment Department. Baseline monitoring for phases included a Rangeland Health Assessment, a Rosgen Level II Geomorphology



Survey, a Riparian Vegetation Survey, yearly documentation of established photo monitoring points, and fall and spring bird surveys.

Over the last nine years, a new grazing plan was developed, 35,383 feet of electric fencing installed (allowing for dormant season only grazing in riparian pastures along the river), six original meanders were reinstated, one concrete irrigation plug and one low-water crossing were decommissioned. Volunteers (approximately 120, totaling approximately 1560 hours) implemented smaller upland erosion control and in-stream treatments during public workshops. Just over 4,330 feet of eroding stream banks were re-vegetated with over 5,000 willow cuttings. Nineteen vanes (boulder and post) and three baffle structures were installed in strategic locations to move the main flow away from eroding streambanks. The channel bed was stabilized using eight boulder weirs, four wicker weirs, and three cross-vane structures. Sediment sources from upland sites and eroding side gullies were controlled using one rock dams, straw bale falls and Zuni bowls. Disturbed areas were re-seeded.

**A Decade of Accomplishments:** As we worked toward accomplishing the project goals, we restored the natural meander system of a targeted reach (approximately 5,680 feet). This in-stream restoration has resulted in increased channel length and sinuosity, restored floodplain access, improved riparian and wetland vegetation, reduced streambank erosion and sedimentation, and abatement of channel down-cutting and wet meadow head-cuts along riparian corridors. Ecosystem services that will be enhanced as a result of our work include alluvial water infiltration, in-bank water storage, native fishery habitat, riparian flora and fauna habitat, and an increased forage range for upland species such as mule deer and elk.

Over the last decade, a total of 18,341 feet of the Dry Cimarron River has benefited from treatment, which has in turn: (1) reduced the river's sediment load caused by erosion; (2) increased streambank vegetation, which has stabilized eroding banks; (3) narrowed the channel width and raised bed elevation in some locations; (4) increased aquatic vegetation diversity and quantity; (5) increased the number of beaver dams from one to 20; and (6) increased the length of the river by 1,903 feet.

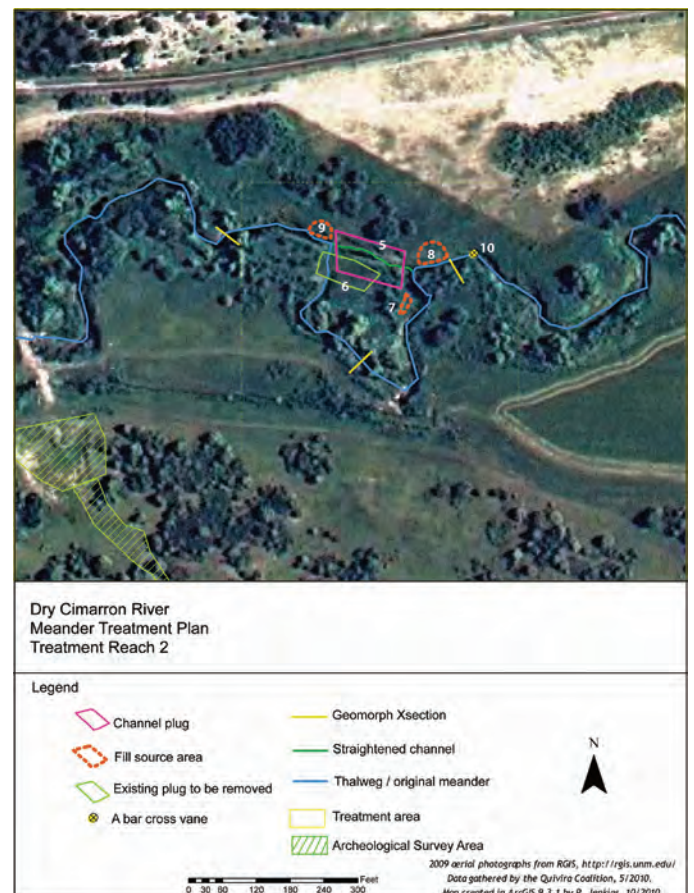
### New Mexico River Ecosystem Restoration Initiative:

In 2011, we completed the lion's share of restoration work on the Dry Cimarron as part of our FY09 New Mexico River Ecosystem Restoration Initiative grant.

**Final Project Design Development:** As of January 1, 2011 the Final Project Design was completed thanks to the contributions of three restoration specialists -- Bill Zeedyk (Zeedyk Ecological Consulting), Craig Sponholtz (Dryland Solutions, Inc.), and Steve Vrooman (Keystone Restoration Ecology, Inc.), as well as the implementation contractor (Wesley Kendrick) and two Quivira Coalition staff (Michael Bain and Avery Anderson).



Photo Point 5. Meander reinstatement on the Dry Cimarron as part of an State of New Mexico RERI grant.





**Permitting and Archeological Clearances:** In December 2010, Quivira and Rainbow Ranch submitted an application to the US Army Corps of Engineers for 404/401 permits, which were granted in April 2011. The archaeological survey was completed in February 2011, registered with New Mexico's State Historical Preservation Office, and submitted as a supplement to our 404/401 permit application.

**Pre-implementation Monitoring:** During the 2009 and 2010 field seasons, Quivira Coalition staff worked with contractors to complete pre-implementation geomorphology surveys and vegetation monitoring. The pre-implementation vegetation cross sections were completed in November 2009 by sub-contractor, Steve Vrooman. The Rosgen Level II geomorphology surveys were complete as of January 2011. The first avian survey was completed in October 2010, and a second survey took place in April 2011. All avian surveys are being conducted by Deanna Einspahr (experienced birder and Quivira Staff member) in coordination with a member of the Santa Fe chapter of the National Audubon Society. The fish survey was completed by the New Mexico Department of Game & Fish. Several water and air temperature monitoring stations (monitored by NMED) already exist at nearby locations on the Dry Cimarron at Rainbow Ranch. Additional instrumentation was installed in June 2011. Quivira staff established photo monitoring points for the project area, and baseline photos were taken in May 2010, followed-up by pre-treatment implementation photos in April 2011. Post-implementation photos will be taken in early April, 2012. Mapping is ongoing. Maps will continue to be updated as implementation and post-implementation monitoring are completed.

**Project Implementation:** Due to delays in the 404/401 and the archaeological clearance process, project implementation was pushed back to April/May 2011. This was not detrimental to the flow of work. Conditions along the Dry Cimarron were still ideal for the work in the late spring (i.e. pre-runoff, low in-stream flow intervals). Implementation sub-contractors were Wesley Kendrick and Steve Carson.

The treatment site currently consists of approximately 5,680 feet of river channel. In 2011, we reinstated approximately 1,423 feet of river channel, retiring 755 feet of anthropomorphic channel for an overall

increase of 618 feet of river length, for a new treatment area channel length of approximately 6,289 feet. The 755 feet of retired river channel is expected to net a gain of approximately 2.42 acres of new wetland.

**Post-Treatment Monitoring:** The post-treatment geomorphological survey was completed in the fall of 2011 by Steve Vrooman. Post-implementation vegetation monitoring will take place in late spring 2012, before the grant ends in June, 2012.

We continue to be excited about working with the Rainbow Ranch to restore large contiguous sections of the Dry Cimarron River and are amazed by the vigorous response of the riparian vegetation in the areas that have already been treated.

### Restoration on Upper Cedro Creek

Over the past seven years Quivira and the Albuquerque Wildlife Federation (AWF) have been working to restore wetlands along Cedro Creek in Tijeras Canyon, which lies within the Cibola National Forest/Sandia Ranger District on the eastern side of the Manzanita Mountains in central New Mexico. The creek originates in the Manzanitas and flows for nine miles northwest, emptying into Tijeras Creek near the town of Tijeras.

In 2011, as part of a USDA Forest Service Cibola National Forest/Sandia Ranger District cost share agreement, the Quivira Coalition, in coordination with Rangeland Hands, Inc., (project designer) and AWF, implemented restoration treatments on the upper reach of Cedro Creek. This included the remediation of 2,600 feet of roads and trail and the installation of 43 rock structures within the ephemeral stream channel. Those structures not mechanically constructed were built by volunteers with the expert guidance of restoration specialists Bill Zeedyk and Steve Carson during an October 15 workshop.



October 15, 2011 Cedro Creek Workshop participants.



Photos from three workshops at Red Canyon Reserve, 2011.

## Red Canyon Reserve

2011 was a dry year for the rangelands of Red Canyon Reserve (RCR) with little or no growth or even “greening-up”, but it was a very successful year for on-the-ground projects.

As part of a 2011 Partners for Fish & Wildlife Grant from the USFWS, Quivira hosted three RCR workshops; one each in March, May, and October. Fifty-five volunteers donated over 660 hours of hard, rewarding work installing five wildlife drinkers, along with one rock dams, Zuni bowls, media lunas, filter weirs, and baffles on upland erosion sites and in Red Canyon.

The RCR Conservation Team members Steve Carson, Tamara Gadzia, Cullen Hallmark, Frank Hayes, Agueda Carabajal and Larry Cary met during the May workshop. The team created a list of perspective RCR Advisors; discussed Reserve liability issues; updated protocols, procedures and guidelines for RCR visitors; created an Emergency Evacuation Plan; began updating the RCR Management Plan; discussed future project and reserve needs; and completed mapping of new treatments.

## Other Land and Water Program Accomplishments

As part of implementing a variety of long-term restoration projects around New Mexico, we hosted eight restoration workshops between March and October that were attended by a total of 177 volunteers (totaling 2,180 volunteer hours).

## New Mexico Land and Water Workshops in 2011

- March 25 - 27: Riparian and Wildlife Habitat Restoration at Red Canyon Reserve, Socorro County; attended by 17 volunteers, plus Quivira Staff and restoration specialists/instructors
- April 29 - May 1: Riparian & Wildlife Habitat Restoration at Red Canyon Reserve, Socorro County; attended by 28 volunteers, plus Quivira Staff and restoration contractors/instructors
- May 7-8: Mora River Volunteer Restoration Workshop, Mora, New Mexico; attended by 38 volunteers, plus Quivira Staff and restoration specialists/instructors
- August 12-13: The Annual Comanche Creek Workshop—Rio Grande Cutthroat Trout Habitat Restoration, Valle Vidal Unit, Carson National Forest; attended by 27 volunteers, plus Quivira Staff and restoration specialists/instructors
- August 25-26: Ponil River Volunteer Restoration Workshop, Cimarron in conjunction with Cimarron Watershed Alliance; attended by 17 volunteers, plus Quivira Staff and restoration specialists/instructors
- September 2-5: Annual Comanche Creek Photo Monitoring and Assessment Workshop, Vidal Unit, Carson National Forest; attended by 6 volunteers, plus Quivira Staff and restoration specialists/instructors



- October 8-10: Riparian & Wildlife Habitat Restoration at Red Canyon Reserve, Socorro County; attended by 26 volunteers, plus Quivira Staff and restoration specialists/instructors
- October 15: Cedro Creek Volunteer Restoration Workshop, Tijeras Canyon; attended by 24 volunteers, plus Quivira Staff and restoration specialists/instructors

## Land and Water Partnerships

In addition to Quivira's in-house project work, the Land and Water program is involved in numerous outreach activities. Primary among these is the work with the Cimarron Watershed Alliance (CWA). The Quivira Coalition has extended its partnering in the CWA's Ponil Creek Restoration and Watershed-Based Planning projects to helping the CWA develop a USFS Collaborative Forest Restoration Program (CFRP) grant proposal for the Middle Ponil Watershed. This proposal counts over 20 partners from Federal, State, Local, business and private citizen interests. This landscape scale proposal involves USFS land in the Valle Vidal Unit of the Carson National Forest. It consists of a forest stand inventory, National Environmental Policy Act (NEPA) analysis, Community Wildfire Protection Plan update, and identification of restoration treatment sites in forest, meadow and riparian ecosystems in the 27,204 acre project area.

The Land and Water Program is also active in community service activities such as representing the New Mexico Public on the New Mexico Forest and Watershed Health Plan Coordinating Group, where numerous land management agencies work to overcome multi-jurisdictional impediments to land health and resource utilization issues.

Quivira also represents regional environmental interests on the Northern New Mexico Resource Advisory Committee, a Federal Advisory Committee Act project review panel that recommends the awarding of U.S. Secure Rural Schools and Community Self-Determination Act funds to local project proponents whose proposals would benefit both local communities and federal lands. Quivira's Land and Water Program Staff support the Southwest Grassfed Livestock Alliance, serving on the Board.

### 2011 Land and Water Partners:

- Carson National Forest, Questa Ranger District
- Cimarron Watershed Alliance
- Dryland Solutions, Inc.
- Keystone Restoration Ecology, Inc.
- New Mexico Environment Department
- New Mexico Department of Game & Fish
- Patagonia Corporation
- Philmont Scout Ranch and the Boy Scouts of America
- Rangeland Hands, Inc.
- Resource Management Services, LLC
- The Sulica Fund
- Taos Soil and Water Conservation District
- Trout Unlimited, Truchas Chapter
- U.S. Fish & Wildlife Service
- Vermejo Park Ranch
- Western Native Trout Initiative
- Zeedyk Ecological Consulting



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# NEW AGRARIAN PROGRAM

*Agrarianism, broadly conceived, reaches beyond food production and rural living to include a wide constellation of ideas, loyalties, sentiments and hopes. It is a temperament and a moral orientation as well as a suite of economic practices, all arising out of the insistent truth that people everywhere are part of the land community, just as dependent as other life on the land's fertility and just as shaped by its mysteries and possibilities.* –Eric Freyfogle

## New Agrarian Program in 2011

Across the nation, a new agrarian movement is growing into a dynamic force. Led by youth (including the young-at-heart) and their mentors, this burgeoning assembly is tackling some of the most daunting challenges of our time: food security, land restoration, conservation, climate adaptation, rural community stability and sustainable prosperity. In the process, youth are reviving traditional conservation and agricultural paradigms from former generations—innovative ideas and methodologies that have been overlooked or abandoned in recent decades.

Today, it is vitally important to support our next generation of conservation and sustainable agriculture leaders—our new agrarians. Agriculture drives economies, creates green job opportunities and directly affects the health of our nation. As present-day agrarians grow older (the national average age for farmers/ranchers in the U.S. is 57 years old), it is critical to address the real challenges new agrarians will face in establishing new operations, evolving existing operations and re-initiating cultural practices on farms and ranches that support sustainability and resilience. If we fail to take proactive measures to train the next generation of agrarians, we face food insecurity, rural instability, loss of food traditions and development of prime agricultural land. We also perpetuate the existence of production systems that do not reflect the needs or opportunities present in our increasingly diverse population.

## A New Agrarian Education

In past times, apprenticeship was the primary form of education available to a person, whatever the field—medicine, music, cobbler or scholar. Not necessarily a beginner, but not yet a master, an apprentice agrees to work for a specific length of time for a master

craftsperson in a craft or trade, in return for instruction. An agrarian apprenticeship is a form of this age-old process by which a learner becomes a practitioner.

Many farms and ranches take on short-term interns as seasonal labor, offering hands-on, experiential learning opportunities that fulfill specific needs for the farm or ranch, such as range riders, farm field labor or farmers' market sellers. These short-term opportunities fulfill many needs of both the intern and the operation, with the farm/ranch benefitting from their labor. But there is a great need for longer term, multifaceted learning opportunities that train the next generation of farmers, ranchers and land managers. These young people need a chance to learn and practice making decisions that are integral to managing a farm or ranch. They need the opportunity to tangibly experience the realities of a life lived on and with the land; they must test themselves against the demands of such a life and develop professional and personal capacities to succeed.

Given the cultural, social and environmental challenges of the 21st century, the world needs new agrarians, people who are as resilient, creative and adaptable as their forebears, and whole-system thinkers who are able to take the best practices of the past and merge them with new knowledge generated today. A new agrarian education allows a young professional to learn the nuts and bolts skills necessary to be progressive land managers, farmers and ranchers. Simultaneously, exposure and immersion into this type of education will open his or her heart and mind to grapple with serious land management concerns and consider how his or her work with land, animals and other humans can be a part of a solution.

## Quivira's New Agrarian Program

In 2008, the Quivira Coalition partnered with several ranches and farms around the Southwest to launch Conservation and Ranching Leadership and Youth—CARLY. While the CARLY program was originally established with a focus on the intersection of conservation and ranching, our re-branded New Agrarian Program (NAP) now offers aspiring young agrarians a broad range of agricultural experiences. We seek to pair eager apprentices with experienced mentors in many sustainable agricultural operations. The New Agrarian Program strikes a balance between mentorship activities and self-directed initiatives,

with opportunities to attend workshops, classes and conferences that support apprentice learning. We seek applicants with a diversity of experiences and a sincere commitment to a life in sustainable agriculture.

In 2011, with generous financial support from the Thaw Charitable Trust, the Dixon Water Foundation, the Barbara Roastingear & Harry Oliver III Family Foundation, the James A. "Buddy" Davidson Charitable Foundation, and Duncan Campbell, the New Agrarian Program has continued to blossom as one of Quivira's most successful initiatives. What started as a vague idea over a cup of coffee at the San Juan Ranch in June of 2008, has since developed into a comprehensive leadership-training program for young agrarians – the ONLY one of its kind in the West. Since the summer of 2008, we have created a curriculum, perfected an application process, developed the capacity of mentors on four different agricultural operations, presented the accomplishments of the program at a national conference in Washington D.C., and recruited, trained and graduated seven NAP apprentices – Amber Reed, Sam Ryerson, Daniel Escutia, Jo Myers, Amy Wright, Laura Hoffman and Timothy Prow. These individuals represent both the essence of "agrarian" and the hope for the future of the sustainable agriculture movement.

## Meet the New Agrarian Mentors

**San Juan Ranch:** San Juan Ranch, owned by George Whitten and Julie Sullivan, is located in the San Luis Valley of south central Colorado. George is a third-generation rancher in the San Luis Valley. As a consultant in Holistic Management, George is motivated by his experience that ranching and conservation are inherently intertwined. Julie has a master's degree in environmental education, and worked for 10 years as a professor in Audubon's Expedition Institute (Lesley University). Both have a passion for teaching. Together they have developed a successful business model. Their



George Whitten and Julie Sullivan of San Juan Ranch, San Luis Valley, Colo. (Photo by Avery C. Anderson)

animals are grass-fed from start to finish, and their beef is certified organic. In addition, George and Julie are knowledgeable about rangeland health, Holistic Management and have been trained in low-stress livestock handling.

### James Ranch

#### Artisan Cheese:

The James Ranch is nestled in the Animas River Valley, 10 miles north of Durango, Colorado, and the James family has been stewards of the property for the last 48 years. Three generations of the James family now cooperatively produce grass-fed beef, artisan cheese, pasture-

raised pork, brown & green eggs from pastured chickens, vegetables, flowers, fruits, and native spruce trees. James Ranch Artisan Cheese is an organic, 100% grass-fed cow dairy and cheese making operation. The NAP apprenticeship creates an opportunity for hands-on experience with all aspects of cheese production, including low-stress animal handling, milking, cheese-making, biological monitoring, marketing, financial planning, Holistic Management, and land stewardship.

**Tapetas de Lana:** Tapetas de Lana is a non-profit wool mill in Mora, New Mexico managed by founder, Carla Gomez. The organization produces locally-sourced fiber products, and serves as a vocational training program that is making a difference in the lives of many low income rural families. It demonstrates that the cottage weaving industry offers a fulfilling, empowering and economically-sustaining option, particularly for individuals who wish to remain in their rural communities.



Dan James of James Ranch Artisan Cheese, Durango, Colorado. (Photo by the James Ranch)



Skeens of yarn at the Tapetas de Lana store. (Photo by Avery C. Anderson)

#### 47 Ranch:

Dennis and Deb Moroney own and operate the 47 Ranch on 5,000 acres of private land, and 7,000 acres of state and Bureau of Land Management land. Their ranch



Dennis Moroney of the 47 Ranch, Sulphur Springs Valley of Cochise County, Arizona. (Photo by Avery C. Anderson)

encompasses four different biomes and 30 different species of native plants. Dennis grew up in Phoenix, Arizona, where he became a biology teacher, and Deb is a practicing physician, sheep rancher and fiber artist. They have two remarkable teenage children who are devoted to their family's land and are public advocates/leaders amongst their peers. As a family they raise grass-fed beef and sell their product in Tucson, Arizona and in other local markets. Dennis serves on the board of the Arizona Cattlegrowers Association and has started a local watershed group. He and Deb are a model for Quivira's collaborative conservation approach and it is important to them to include a public engagement element in their NAP apprenticeship.

San Juan Ranch, James Ranch Artisan Cheese, Tapetas de Lana and the 47 Ranch are ideal locations for aspiring agrarians. These operations are run by outstanding land managers, who are also teachers at their core, and they have demonstrated a genuine desire to mentor the next generation of agrarian leaders. With proven success under our belt, the Quivira Coalition now feels prepared and excited about the prospect of expanding our existing program to new operations in the coming year.

#### Success in 2011

In 2011, the New Agrarian Program successfully recruited, trained and graduated four NAP apprentices (Jo Myers, Amy Wright, Laura Hoffman, and Timothy Prow) and created a meaningful conservation internship opportunity for Regina Fitzsimmons in the Quivira Coalition office.

**Jo Myers:** Jo started her eight-month apprenticeship with James Ranch Artisan Cheese (Durango, CO) in April 2011. Jo's apprenticeship Capstone Project entailed pulling together an easy-reference handbook of naturopathic remedies for an array of cow and calf maladies that are specifically suited for the James Ranch.

She spent hours researching how to address different diseases and injuries and figuring out ways to apply that knowledge to the ranch. The result was a diagnostic reference book that explains the symptoms of each condition and the steps for treatment. This was a valuable learning exercise for Jo in that she now has a practical tool for caring for her own dairy animals. The final product is also an asset to the James Ranch and future NAP apprentices.

After graduating in November 2011, Jo and her new husband returned to Jo's home town of Salmon, Idaho. They are making preparations to start a grass-based dairy and artisan cheese operation. In Jo's final apprenticeship summary she wrote: "While I had many educational experiences, I think the biggest lesson I learned at the James Ranch is that with a little creativity and ingenuity, farming can be a profitable way of life. I come from a place where farmers and ranchers are barely making ends meet and the notion of small farms are quaint relics of the past reserved only for the hobbyist with deep pockets or extra time. The James family, however, is proving that paradigm wrong by being creative, having a good strategy, working together and building strong customer relationships."

**Amy Wright:** Amy started her year-long apprenticeship with San Juan Ranch (Saguache, Colo.) in February 2011. At the six-month mark in her apprenticeship, Amy was inspired by a conversation she had with Temple Grandin, and decided to focus her Capstone Project



on designing and building a portable corral system for the San Juan Ranch. In one of her quarterly summaries, Amy wrote: "Throughout the past months at the San Juan Ranch, we have moved the herd to a number of different locations for pasture. Many of these are wide-open farms without existing infrastructure for cattle. At each location we have needed a set of corrals to load and unload cattle, to sort off different classes of the herd, and facilities to vaccinate, wean or pregnancy test.





Each time we struggle with setting up a configuration of panels, to make shift a temporary yard just good enough to get the job done. Not having an effective system in place causes stress on the animals and in turn leads to a multitude of negative impacts. Some of these impacts can include: loss in meat quality due to stress hormones and bruises, increased injury to animals and their handlers, and negative financial implications from the consequent lower meat yields and higher insurance costs. For my Capstone Project I would like to create and implement a plan to construct a set of portable, low-stress cattle corrals. An efficient, easy to use system will reduce stress and injury to the cattle, create safer working conditions for the handlers, and also provide a quicker and more productive way to sort and handle cattle.” This Capstone Project also helped Amy to meet two of her personal goals: learning more about animal behavior AND becoming a competent welder – both crucial technical skills for a future rancher.

Reflecting back on her apprenticeship, Amy wrote the following in her final summary: “This apprenticeship has made this world accessible in the most profound way. Through the technical skills, business knowledge and decision making capacity, but also in the sense of confidence... I am so happy -- almost relieved -- to know this world of ranching is my world. I cannot imagine doing anything else.”

Having graduated from her NAP apprenticeship on February 1, 2012, Amy made the decision to stay on with the San Juan Ranch for an additional five months. San Juan Ranch has hired Amy as their ranch foreman, and she will manage the 2012 calving season and serve as an additional mentor for the new apprentice on San Juan Ranch.

**Laura Hoffman and Timothy Prow:** Laura and Timothy started their apprenticeship with the 47 Ranch (McNeal, Arizona) in February 2011. Over the course of their apprenticeship, Timothy and Laura were fully immersed in the daily operations of the diversified 47 Ranch. They were mentored in cattle management, horsemanship, goat and sheep

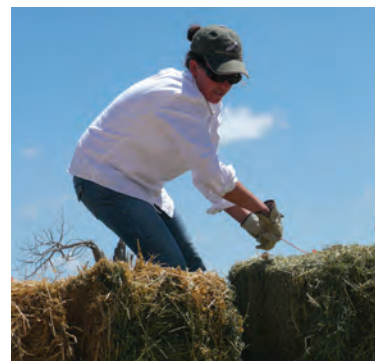


herding, small scale farming, Permaculture, marketing, Holistic Management, chicken farming, erosion control, irrigation, bee-keeping, low-stress livestock handling, land management and much more. Laura took on a Capstone Project that entailed creating a plan for renovating an animal handling facility at the 47 Ranch. This project necessitated research on animal behavior (sheep and cattle, specifically), coordination with the management of the 47 Ranch, taking measurements, creating to-scale drawings, and contacting appropriate contractors for bids. Laura’s project helped her meet some of her personal goals by giving her exposure to low-stress animal handling and the technical elements of infrastructure construction/maintenance.

Timothy’s Capstone Project was equally management intensive, but instead of dealing in infrastructure, Timothy worked on creating a management design for a landscape. Together with his mentor, Dennis Moroney, Timothy identified and surveyed (with a GPS unit) one particular watershed on the 47 Ranch property for the purpose of making a plan to control erosion. Timothy ultimately produced a map and priority ranking system for addressing erosion in the area and constructed some examples of appropriate hand-built erosion control structures. Timothy came to the apprenticeship with a background in construction, but was eager to learn more about becoming a competent land manager. His Capstone Project helped him engage with his CARLY mentor around a new subject area.

At the end of their apprenticeships, Timothy and Laura felt prepared and excited to move on to the next opportunity. They have recently moved to the Four Corners area and are using their working knowledge of Holistic Management, Permaculture and small-scale agriculture to start a demonstration site.

**Regina Fitzsimmons:** Regina Fitzsimmons was the Quivira Coalition’s fabulous Conservation Intern in the summer of 2011. She arrived in June for a six-week intensive learning experience. Unlike previous interns with the Quivira Coalition, we promised Regina general exposure to all aspects of Quivira’s work, but asked her to focus on two principal projects. To that end, Regina worked with



Executive Director, Courtney White, to compile and help organize his research for the Carbon Ranch Project. She also worked with Avery in the New Agrarian Program on a project that entailed organizing all of the knowledge that we have acquired to date about how to create successful mentor-apprentice relationships. The result of Regina's tireless efforts was an extremely helpful how-to guide for Avery's 2012 replacement in the New Agrarian Program.

Keeping up our end of the bargain, Regina also had exposure to Quivira's Land and Water Program, including our volunteer workshops and habitat restoration work in the Valle Vidal, and she played a role in helping to create a marketing plan for Quivira's Annual Conference. All in all, Regina was a tremendous asset to Quivira; we felt enriched by her valuable contributions.

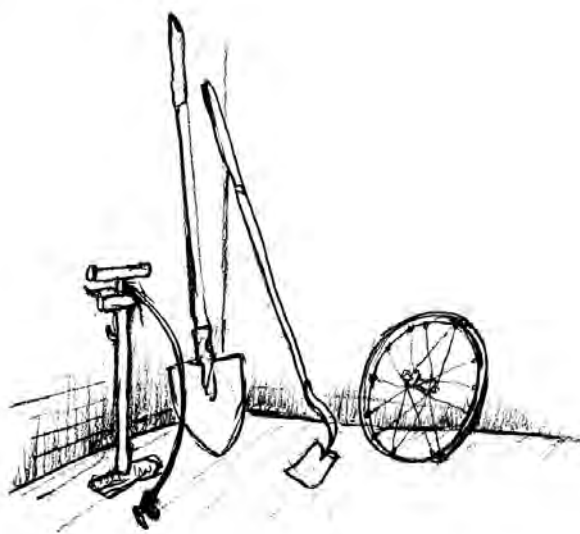
Lastly, we want to share our excitement over Quivira's newest publication – ***New Agrarian Education: A Handbook for Mentor and Apprentice.*** This how-to guide is a culmination of our collective knowledge accumulated over the last four years of the New Agrarian Program. Our goal for the Handbook is that it will serve as a template for new ranches contemplating participation in our mentoring program or perhaps starting their own mentorship program. Simultaneously, it should also prove to be a fundamental resource for young professionals seeking agricultural apprenticeships. We want to thank Regina Fitzsimmons for playing a leading role in the creation of this publication, as well as Patricia Jenkins and Jeremy Smith for the artwork they contributed. Lastly, this handbook wouldn't exist but for the incredible mentors and apprentices who have taught us so much over the last four years.

### **Building on NAP's Success in 2012**

In the first few months of 2012, we have placed two New Agrarian apprentices on the ground with San Juan Ranch and James Ranch Artisan Cheese. We are also planning to develop a second-year apprenticeship on a new ranch for one of our recent NAP graduates, Amy Wright.

In addition, the Quivira Coalition has recently hired a New Agrarian Program Director, Virginie Pointeau. Virginie earned her BA in Spanish and French in 1996 at the University of Texas, in Austin. She then spent the greater part of 10 years working for Outward Bound in the Minnesota Boundary Waters during the summers and returning to New Mexico each fall. In 2008, she

## **New Agrarian Education: A Handbook for Mentor and Apprentice**



**QUIVIRA** COALITION

Quivira's newest publication - *New Agrarian Education: A Handbook for Mentor and Apprentice*. The first printing sold out at Quivira's 2011 Conference. A second printing is scheduled for 2012.

earned her M.S. in Forestry from the University of British Columbia. Wishing to merge her love for people, land health, ecology and sustainable systems into a single career path she returned to New Mexico and began volunteering at Quivira Coalition restoration workshops. We are delighted to have Virginie on board and believe that she will bring exciting new elements to the program.

As postulated back in 2008, there are few challenges more important at this moment in time than encouraging the next generation of leaders in conservation and agriculture, and few are more daunting than creating the opportunities they need to learn from mentors and put new knowledge to work. We are excited to have met and exceeded expectations in the fourth year of the New Agrarian Program, and we continue to be energized about supporting the next generation of agrarian leaders through NAP.



# TRIBAL PARTNERSHIP PROGRAM

## Building Bio-Cultural Resilience on the Navajo Nation

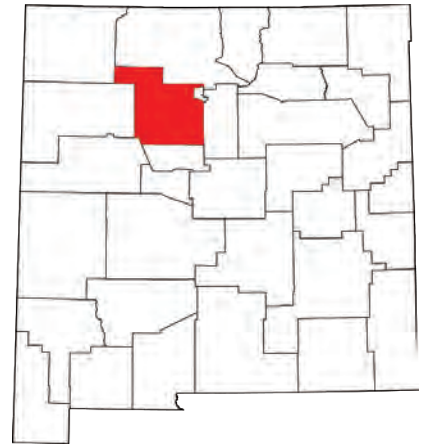
**Background:** The Ojo Encino, Torreon and Counselor Chapters of the Navajo Nation sit on the southern edge of the Colorado Plateau, 30 miles west of Cuba, New Mexico, encompassing more than 276,000 acres. Our work in this tri-Chapter region is focused around building on traditional resilience strategies to climate change by restoring *hózhó*—a Navajo word that means “walking in beauty” or living in a manner that strives to create and maintain balance, harmony, beauty and order. In essence, it’s about rediscovering a land ethic, and it requires building local capacity and testing strategies that make land-based activities economically viable and resilient in the face of climate change.

In the last six years, the Quivira Coalition has been actively working with the communities of Ojo Encino, Torreon and Counselor to build a resilient bio-cultural system that can be replicated by other communities on the Colorado Plateau as a model of how to confront a changing climate. The principal strategy that has emerged from our work involves engaging new and diverse conservation constituencies, and focusing our efforts on ecologically significant elements of the larger landscape.

In 2008, The Christensen Fund awarded the Quivira Coalition a grant in the amount of \$100,000 to implement a project entitled “The Tribal New Ranch Network.” The goal of the two-year grant was to assist tribal communities in expanding their efforts to build economic and ecological resilience, principally by helping them: (1) develop the capacity to plan and implement ecological restoration projects that use local materials and labor; (2) to plan and implement managed grazing of livestock, and (3) to begin a proactive management program for feral horses.

The overwhelming success of the endeavor, and financial support from the Christensen Fund, made it possible for the Quivira Coalition to apply for a follow-up grant from The David and Lucile Packard Foundation in 2009. The combined funding from both foundations enabled us to expand the bio-cultural resilience-building program. Specific projects funded under the first Packard grant (2009-2010) entailed restoring abandoned floodwater farm fields for the purpose of jump-starting a local food system, and simultaneously healing vital components (i.e. alluvial fans) of an otherwise degraded landscape. These activities dove-tailed, but did not overlap, with the objec-

Map showing location of Sandoval County, New Mexico, where Quivira is working with Tribal partners to build bio-cultural resilience.



tives set forth in the 2008-2010 Christensen Fund grant. The Christensen Fund was interested in addressing the implications of, and solutions to, feral horses on a Native landscape, while Packard was interested in tackling land restoration and building a local food system. We considered ourselves very fortunate to have found two sources of funding that were perfectly complementary to each other, without being redundant.

The Packard Foundation’s renewed support for work in the tri-Chapter area over the next three years (2010-2013) further complements and extends the effect of past support from The Christensen Fund, and will simultaneously match our collective effort going forward to address all of the elements necessary for creating a comprehensive climate change adaptation strategy for Native communities on the southern Colorado plateau.

Beginning in the fall of 2010, and projecting out over the next two years, we intend to: (1) identify and restore areas of high ecological potential on the south Colorado Plateau; (2) develop the capacity of Hasbídító as an emerging Navajo-run community 501(c)(3) organization that is capable of planning and implementing projects that build resilience on the Colorado Plateau; (3) engage Navajo youth and create new avenues through which the next generation of land stewards can receive hands-on mentorship in land health restoration techniques; (4) establish a formal Capacity Building program area within the Quivira Coalition, through which we can scale up our efforts to build resilience in other under-served communities on the Colorado Plateau; (5) restore traditional agricultural and stewardship traditions that will serve as building blocks in a re-emerging local food system; and (6) gain a better understanding of how to integrate the traditions of Native American dryland agriculture with modern land management practices through research.

## Success in 2011

In 2011, we took significant steps with our Native colleagues towards our project goal—develop a comprehensive climate change adaptation strategy that can be replicated in rural Native communities across the Colorado Plateau. Building capacity and resilience into both the ecological and cultural systems will mean that iconic communities on the Colorado Plateau will remain viable in the face of climate change. The long-term ecological and cultural significance of this project is immense and will require a variety of techniques, partners and funding sources in order to be successful.

**RESTORATION OF AN ICONIC LANDSCAPE:** We have continued our efforts to identify and restore areas that have inherently high ecological potential, with the goal of reinstating the full suite of appropriate ecosystem services – e.g., water and nutrient cycling, forage production, wildlife habitat and biological diversity. These pockets of high ecological value include historical Navajo agricultural sites and springs, wildlife corridors and ephemeral stream systems. We believe that this type of targeted restoration is the most effective way to address the impacts of climate change in an overwhelmingly degraded landscape.

**PROGRESS TO DATE:** In this first year of the grant, we focused our efforts on identifying historical Navajo agricultural sites and then selected four fields of high ecological and/or cultural significance upon which to focus. We then determined sources of impairment for each site, using consultants and experts from inside the community and the Quivira network. Sites were prioritized based on restoration potential, and restoration/management plans were developed for each of the four selected sites. In total, restoration plans were implemented for four locations in the Counselor, Ojo Encino and Torreon Chapters using youth crews and local contractors. Restoration techniques included road closure and drainage treatments, erosion control, water management, planting native species

and installing livestock fencing. It is our goal to complete restoration on 10 sites by the end of the three-year grant, and good progress was made towards that goal in 2011 (Year 1). In Year 2, the focus will be restoration efforts for endangered springs in the tri-Chapter area.

**DEVELOPING HASBÍDÍTÓ'S CAPACITY:** In 2009, start-up funding from the Packard Foundation helped our Navajo colleagues create Hasbídító, a Navajo-run New Mexico non-profit conservation organization dedicated to building economic and ecological resilience in the region. Hasbídító is now up and running in full force. They actively serve the Navajo Chapters of Ojo Encino, Torreon and Counselor, and their mission is to “create sustainable opportunities for their people through projects that utilize the communities’ talents, skills and knowledge.” Their ultimate goal is to build capacity for the sake of healthier landscapes and healthy people.

**PROGRESS TO DATE:** We would argue that our greatest achievement to date is helping in the creation of Hasbídító. In five years’ time, we expect them to be capable of fundraising for, planning and implementing all of their own projects. We are at a critical juncture in the evolution of Hasbídító as a self-sufficient Native American-run non-profit conservation organization. They are determined to develop a strong Board of Directors and build a budget that is capable of supporting three part-time staff. In addition, they are applying for their federal IRS 501(c)(3) status, but in the meantime have secured a reliable fiscal agent (Rio Puerco Alliance).

In 2011, we successfully helped to build Hasbídító's organizational capacity by re-distributing a significant

portion (40%) of the total funds granted to Quivira (as per our grant proposal to the Packard Foundation in 2010). Quivira made two payments to Hasbídító over the last 10 months – one in the early spring of 2011 in the amount of \$30,000, and a second at the end of August 2011 in the amount of \$10,000. As per the budget in our grant application, the total amount re-granted to Hasbídító was \$40,000.



2011 Ojo Encino Summer Youth Erosion Control Team.



**YOUTH ENGAGEMENT:** Support from Packard and others over the last five years has enabled the community of Ojo Encino to develop and scale up their Summer Youth Erosion Control Program. This successful eight-week, youth-based erosion control program has tackled significant watershed restoration projects with minimal outside technical support. The projects use erosion control techniques taught in workshops sponsored by the Quivira Coalition, but adapted for local materials and conditions.

In the summer of 2011, there was a competitive application process to become a member of the crew, and the applicants selected were not only from Ojo Encino, but also included youth from neighboring Chapters. The crew leaders attended workshops led by watershed restoration specialist, Craig Sponholtz (Dryland Solutions, Inc.). They then struck out on their own during the summer—taking responsibility for site selection, design and construction of erosion control treatments. Over the course of the summer, they built dozens of structures, and when assessed at the summer's end, Sponholtz commented that “not only was the rock work outstanding, but the treatment designs laid out by the crew demonstrated their real understanding of the way that water and sediment move across the landscape.”

**PROGRESS TO DATE:** Quivira provided technical assistance, in the form of instructors and workshop materials, to the 2011 Ojo Encino Summer Youth Erosion Control crew. We also facilitated several events where elders and youth had an opportunity to interact and exchange ideas (i.e. Native Foods Day — ranch/farm tours, backyard garden assistance, livestock expo and a compost tea workshop).

In the next two years, our colleagues at Ojo Encino would like to take this summer program to the next level. Efforts will center on building more bridges between elders and youth so that traditional ecological knowledge is passed on to the next generation of resource managers. We also plan to encourage more technical resource man-

agement training through workshops, internships, and other educational opportunities. Two former participants in the Summer Youth Erosion Control Program have full scholarships to attend New Mexico State University's Resource Management Program, and we hope to facilitate similar opportunities for other interested students.

**LOCAL FOOD:** Historic agricultural sites represent areas of high ecological and cultural significance in a landscape that is otherwise largely degraded. These old agricultural sites were important not only for the food they produced, but also for the diversity of medicinal plants that grew in the nutrient-rich soils. Community members from Ojo Encino, Counselor and Torreon are now coming forward with an interest in these old fields, not only as a means to feed their families “real” food, but also for their value as building blocks in a re-emerging local food system.

**PROGRESS TO DATE:** In 2011, we devoted a good portion of our time to listening and facilitating conversations about what a local food system might look like on the Eastern Navajo Checkerboard. In a place where “food system” currently means Sysco trucks and food stamps, this is considered a radical process. In our grant application, we talked about “vibrant seed banks” and “farmer's markets.” These things are coming, but we are not there yet, and this was an important lesson for us in YEAR 1 of the grant. We started off focused on end products (seed and veggies), but quickly realized that we were getting ahead of ourselves. Therefore, we started by engaging a small, but enthusiastic, group of farmers

in the communities of Ojo Encino, Torreon and Counselor who stepped forward because they wanted to become better food producers. Some of those farmers had large (one-two acres) fields, and others wanted to do intensive backyard gardening. Recognizing the rarity of people who are committed to growing food in that area, we welcomed producers of all types and scales.



Restoration Specialist, Craig Sponholtz, works with the Ojo Encino Summer Youth Erosion Control team to lay out a Media Luna on contour.



Hasbídító hosts a tour of local backyard garden sites in Ojo Encino, Torreon, and Counselor. (Photo by Avery C. Anderson)

Rather than focusing on end products like seeds and produce, we started at the beginning—appropriately with soil and roots. We hosted a three-day compost tea workshop taught by soil biology expert, Doug Weatherbee. Mr. Weatherbee successfully engaged the workshop participants with classroom time, as well as field demonstrations. The entire workshop was translated into Navajo to make it accessible to older members of the community. During the workshop, the Hasbídító Staff were trained in brewing compost tea for application on agricultural fields throughout the growing season.

All in all, it was a tremendous event with nearly 20 participants each day. Lastly, Packard funds made it possible for us to play a support role in working with Hasbídító to establish an Edible School Yard program at the Ojo Encino Day School. The next two years will focus on efforts linking together Hasbídító and Native American agricultural experts from the Colorado Plateau to exchange traditional ideas/techniques for successful dryland agriculture.

### QUIVIRA COALITION'S CAPACITY BUILDING

**PROGRAM:** The Quivira Coalition is actively looking to build upon and expand the reach of our successful Capacity Building Program. Our Navajo colleagues have taught us a great deal about how to do this important

work, and we are planning to scale up our efforts to build resilience in other under-served communities (Native American, Hispanic, etc.) on the Colorado Plateau.

**PROGRESS TO DATE:** We enthusiastically sought out new and diverse sources of funding, as well as maintained vital relationships with previous funders. The Christensen Fund granted Quivira \$100,000 between 2008 and 2010, and in 2011 we applied for another two-year grant (2012-2014). As mentioned above, the interests of the Christensen Fund and

the Packard Foundation are similar in some ways, but different enough that they dovetail nicely, and provide the necessary resources for exploring all of the diverse components of a resilient bio-cultural system.

Together with our Navajo colleagues, we have also continued our effort to build relationships with new communities, Counselor and Torreon. In the coming two years, we would like to expand that circle to include two more communities on the Eastern Navajo Checkerboard. The final two points go without saying: Quivira is in a constant state of pioneering innovative techniques (i.e. watershed restoration, collaborative partnerships, and apprenticeships) with the goal of building resilience on western working landscapes. In doing so, we are also constantly building our credibility to carry out successful projects in a diverse array of communities by gaining practical experience on the ground. We are honored that the Packard Foundation acknowledges the importance of this underlying work, and we are grateful that they have allowed us to direct a portion of this grant to sustaining our work.

**RESEARCH:** The restoration and management of traditional Native American dryland agriculture is largely uncharted territory in the scientific literature. We are actively working with New Mexico Highlands University



faculty (principal investigator, Dr. Craig Conley) on better understanding the unique ecological potential of these sites. Ultimately, understanding how these sites function agriculturally helps us to better understand their important ecological role in the landscape.

**PROGRESS TO DATE:** In 2011, Dr. Craig Conley worked closely with the Quivira Coalition and Hasbídító to begin scientific investigation of Navajo dryland agriculture. He used the map of all identified sites with high ecological potential to help select the specific sites that he would focus on for his research. He then installed four soil moisture and temperature monitoring stations (HOBO software) to begin collecting data on nutrient cycling, moisture, and temperature, among other factors. In 2012, Dr. Conley plans to submit a comprehensive grant application to the USDA-AFRI (Agriculture Food Research Initiative). The overarching goal of the proposed research project, Traditional Navajo Dryland Agricultural Systems, is to support Navajo farmers in restoring traditional farm plots and revive culturally important agricultural practices in today's biocultural environment. To accomplish this, it will necessitate understanding basic soil moisture and nutrient cycling dynamics and the factors that limit crop production in these traditional, low-input, dryland farming systems.

**LOOKING FORWARD:** As we postulated at the start of this project in 2010, the chances for successful implementation of the proposed project are excellent. The increasing eagerness of people in the communities of Ojo Encino, Counselor and Torreon over the last six years has been inspiring. In 2011, four areas of high ecological significance were restored and the process of selecting our targets for next year began. Quivira helped build the capacity of Hasbídító by empowering



Tammy Herrera and Lula Castillo, Project Leaders for Hasbídító, work with Restoration Specialist, Steve Vrooman, in surveying local springs. (Photo by Avery C. Anderson)

them to manage their own budget, staff and projects – vital components necessary for Hasbídító's viability after the grant is over. We provided the technical skills and materials necessary to take the Summer Youth Erosion Control Program to a new level and we helped Navajo farmers start to think about soil health — a necessary first step in re-building a local food system. We doubled down on strengthening Quivira's Capacity Building Program by increasing our fundraising efforts and the reach of our existing programs. Lastly, we made our first entry into the realm of scientific analysis – an approach that is certain to improve the rigor and outcomes of our efforts.

Creating a comprehensive climate change adaptation strategy for rural Native communities on the Colorado Plateau is no small undertaking. We are fortunate that we have formed such a remarkable partnership with Hasbídító. To date we have found that the combination of our organizations' individual strengths makes us a highly effective team. Communities like Ojo Encino, Torreon and Counselor are often left out on the margin of society, but in this project – they are proudly representing the rest of the Navajo Nation as climate change resilience innovators.

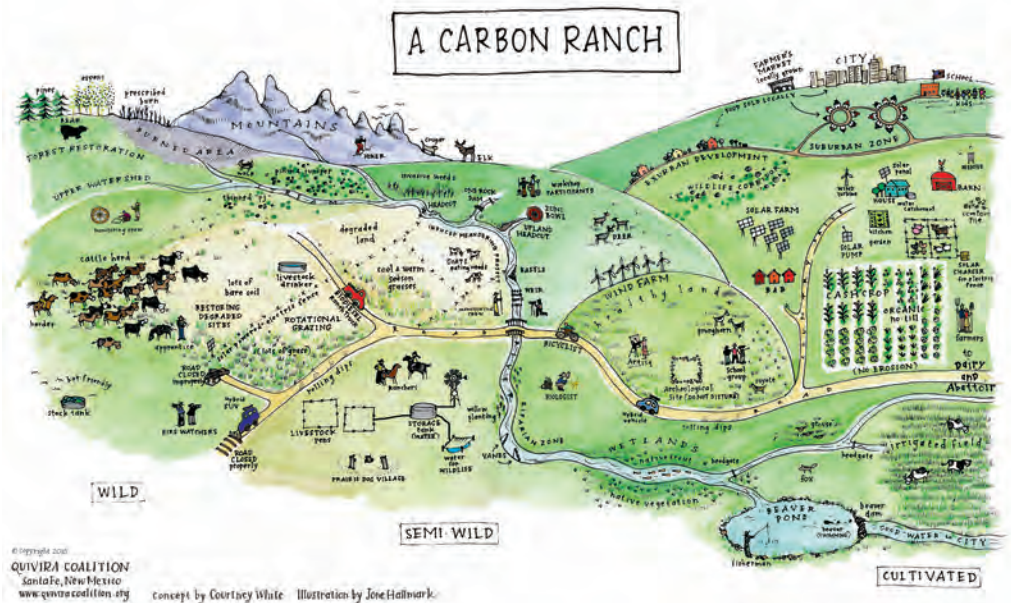
# CARBON RANCH PROJECT

The Carbon Ranch Project (CRP) began in November, 2010, with the Quivira Coalition's 9th Annual Conference in Albuquerque, New Mexico, which was titled *The Carbon Ranch: Using Food and Stewardship to Build Soil and Fight Climate Change*. The conference explored strategies that use food and stewardship to build soil, sequester CO<sub>2</sub>, reduce greenhouse gas emissions and build resilience in local landscapes. It was inspired by recent research on the role grasslands can play in sequestering CO<sub>2</sub> in soils. The conference drew nearly 500 people from across the West. As part of the event, Courtney White wrote an extended essay on the Carbon Ranch, which was published in Quivira's December, 2010 Journal. A shortened version was published in Rangelands magazine in April, 2011.

A prominent feature of the conference was the Carbon Ranch map that we produced for the event. This map became the basis for the Carbon Ranch Project.

In late 2010, we received funding from the Compton Foundation to launch the CRP in 2011. This funds were matched by the New Cycle Foundation Fund, Santa Fe Community Foundation; and, the Lydia B. Stokes Foundation, located in Santa Fe. Combined, these grants enabled Courtney to accomplish the following:

- Author a concept paper for the County of Santa Fe on the possibility of carbon ranching its 470-acre property near La Cienega.
- Become a Keynote speaker for a conference on ranching and soil carbon in Australia.
- Present a talk on the Carbon Ranch at a retreat for graduate students in the Resilience Program at the University of Alaska, Fairbanks.
- Begin the research and writing of the book, *The Carbon Puzzle: Reassembling Land and Livelihoods in the 21st Century*. The intended audience includes ranchers, landowners, conservationists, agency personnel, and members of the public.



- Fund Regina Fitzsimmons, a summer intern with Quivira, who compiled and researched articles and other source material for a new web site for the CRP. The web address is: [www.carbonranching.org](http://www.carbonranching.org) and is now “live” in 2012. This site will serve as a ‘library’ for ranchers, landowners, members of the public and anyone else interested in the idea of carbon ranching.

The title of the book refers to the map, which has been cut graphically into puzzle pieces. Each piece will be a chapter in the book. The following is an excerpt from the book's introduction:

*An author I admire once said every book should try to answer an anguished question. Today, I'd extend this idea to businesses, non-profits, web sites, art projects, political debates, community efforts and any other creative or social endeavor trying to make a difference in our increasingly tumultuous era. There's certainly plenty of worry to go around. The question I try to answer here is this: is it possible to write a book about a solution to climate change and its associated troubles without actually using the words climate change or global warming?*

*The question is anguished because the climate crisis has been politicized to the point where (otherwise) sensible people have adopted insensible attitudes to this terribly important problem. For others, it prompts a fingers-in-the-ears response or a 'what-can-I-do?' shrug of the shoulders. For still others, the topic is*



yesterday's news or has become just plain fatiguing. Not that again. Meanwhile, the emergency itself is deepening quickly, as the science clearly demonstrates. Time is short, we are told by anguished climatologists, and getting shorter. Action is required, they warn – prompting more fingers-in-the-ears.

This situation presents a dilemma: how can we talk about the crisis-that-shall-not-be-mentioned without actually talking about it? Fortunately, there is a way. We can if we talk about how to build topsoil, grow local food, fix creeks, create jobs, restore livelihoods and return health to land and people. Each has a positive impact on you-know-what (such as sequestering carbon dioxide in soils), but each is worthy of doing in its own right. They may also be necessary in their own right to solve other growing challenges in the 21st century. In other words, the answer to my anguished question is yes – if you write a book about soil, water, grass, food, riparian restoration, cattle grazing, wildlife corridors, erosion, bears, beavers, artists, wind power, wilderness, chickens, bats, birders, goats, weeds, wolves, wetlands, fires, foxes, students, cities, and young farmers and ranchers.

In short, it's possible if you write a book about carbon. That's because it is everywhere— in the soil beneath our feet, the plants that grow, the land we walk, the wildlife we watch, the livestock we raise, the food we eat, the energy we use, and the air we breathe. It is the essential element of life. Without carbon we die, with the just right amounts we thrive, with too much we suffer. For eons, carbon has been a source of life and joy to the planet. A highly efficient carbon cycle captures, stores, releases and recaptures biochemical energy, making everything go and grow from the soil up, including plants, animals and people. In the last century or so, however, the carbon cycle has broken down at critical points, most importantly among our soils which have had their fertility eroded, depleted and baked out of them. Worse, carbon has become a source of woe to the planet and its inhabitants as excess amounts accumulate in the atmosphere and oceans.

Carbon also became a source of conflict. That's because we disassembled a healthy carbon landscape — broke it into pieces, set one use against another, divided into camps, fought, argued and debated with each other over whose carbon was superior to the other: organic versus conventional; livestock

versus wolves; wilderness versus jobs; native versus non-native; work versus play; urban versus rural. We lost all sense of interconnectedness, that it was all carbon. Instead, we engaged in a zero-sum game of self-destructiveness—arguing that one use of carbon could only advance if the other retreated. If you were for wildlife, for instance, you had to be against cattle ranching. Or vice versa. And the struggle ensued.

Meanwhile, industry dug and burned up fossilized carbon with abandon, poisoning the air, sea, us and the land in the process. Fossilized carbon also stoked divisions and brawling among citizens by fueling an economy that efficiently disassembled land and people into independent units. Many people like to point fingers at corporations for this, but we have only ourselves to blame. In the end, we allowed ourselves to be pulled apart. Divided, we fell. The land broke into pieces.

Which raises perhaps the real anguished question of this book: can we reassemble the land, and thus ourselves?

In 2012, we will continue to put the carbon ranch research on the new web site; to network with regional, national and international carbon and climate projects and disseminate our ideas via public speaking engagements. Courtney will complete researching and writing the book and will begin to plan an educational program for the Carbon Ranch Project in 2013.



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# Foundation, Government, Organizational and Public Support

Special thanks and appreciation to those who contributed to the Quivira Coalition in 2011.

## COMMUNITY - \$10,000+

Compton Foundation  
Dixon Water Foundation  
Lillian Goldman Charitable Trust  
Sylvia Y Jespersen  
Judith McBean Foundation  
McCune Charitable Foundation  
The David and Lucile Packard Foundation  
State of New Mexico River Ecosystem  
Restoration Initiative  
Thaw Charitable Trust  
USF&W - Partners for Fish and Wildlife Program  
U.S. Forest Service - Cedro Creek Restoration Project  
U.S. Forest Service - New Ranch Network



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## ANIMAL - \$5000+

Adelante Consulting, Inc.  
Bybee Foundation  
Patagonia  
Beth and Rick Schnieders  
CHS Foundation  
Apache Foundation  
Truchas Chapter, Trout Unlimited  
Grasslans Charitable Foundation  
The Patrick A. Dunigan Fund of The Dallas Foundation  
New Cycle Foundation Fund,  
Santa Fe Community Foundation  
Barbara Roastingear/Henry Oliver III  
Family Foundation  
Lydia B. Stokes Foundation  
New Mexico Department of Game and Fish

## PLANT - \$2500+

David Levi and Nancy Ranney  
The Moore Charitable Foundation  
Spur Lake Cattle Company  
Taos Soil and Water Conservation District  
Central Colorado Educational Trust  
The Nature Conservancy Worldwide

## SEED - \$1250+

Dennis A. O'Toole Family Foundation  
Martha-Ellen Tye Foundation  
McBride Family and Aspen Business  
Family Ctr. Foundation

## SOIL - \$500+

Betsy Brown  
John Blueyes  
Bullitt Foundation  
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Frank Hayes, Heart & Horn Ecological Services, LLC  
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Mesteño Draw Ranch  
Pete Pulis, Starcreek Ranch  
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Virginia Smith  
The Sulica Fund  
Tim A. Sullivan  
Ellie Trotter



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# Quivira Coalition 2011 Supporters

Many thanks to the following individuals and organizations for helping to make 2011 a success.

47 Ranch, McNeal, Ariz.  
Albuquerque Wildlife Federation  
Michael and Julie Bain  
Tony Benson, Wolf Springs Ranch,  
Taos, N.M.  
Boy Scout Troop 97,  
Albuquerque, N.M.  
Betsy and Reeves Brown  
Bybee Foundation  
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The Greenhorns  
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Frank Hayes  
Laura Hoffman, NAP Apprentice  
James Ranch, Durango, Colo.  
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Keystone Restoration Ecology, Inc.  
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Surface Water Quality Bureau  
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Patagonia, 1% for the Planet  
Patagonia, World Trout Initiative  
Philmont Scout Ranch  
Timothy Prow, NAP Apprentice  
Pete Pulis  
Questa Ranger District,  
Carson National Forest  
Quivira Coalition Board of Directors  
Rainbow Ranch, Folsom, N.M.  
Rangeland Hands, Inc.  
Nancy Ranney and David Levi  
Resource Management Services, LLC  
Rio Puerco Alliance  
Barbara Roastingear/Henry Oliver III  
Family Foundation

San Juan Ranch, Saguache, Colo.  
Santa Fe Garden Club  
Santa Fe Watershed Association  
Beth and Rick Schnieders  
Sally B. Searle  
Jeremy Smith  
Southwest Grassfed  
Livestock Association  
Lydia B. Stokes Foundation  
The Sulica Fund  
Tapetas de Lana, Mora, New Mexico  
Taos Soil and Water  
Conservation District  
The Nature Conservancy Worldwide  
Ellie Trotter  
Beezhan Tulu  
Dan Taylor, Bat Conservation  
International  
Thaw Charitable Trust  
Townsend Archaeological Consultants  
Trout Unlimited, Truchas Chapter  
Western Native Trout Initiative  
USDA Forest Service, Region Three  
Wild and Scenic Film Festival  
Wind River Ranch, Watrous, N.M.  
Amy Wright, NAP Apprentice  
Zeedyk Ecological Consulting, LLC  
Zia Diner

We want to acknowledge all 121 volunteers who participated in Quivira Creek Restoration workshops and other projects in 2012. You contributed 1,254 volunteer hours. Thank You.

AND TO THE ENTIRE QUIVIRA COMMUNITY, THANK YOU FOR YOUR CONTINUED SUPPORT.

Many thanks to Cullen Hallmark and Steve Carson for all their work on behalf of the Quivira Coalition and Red Canyon Reserve.

# 2011 Cash Financial Report

Assets, Ordinary Income and Expenses ending December 31, 2011: All financial documentation is shown before 990 tax reporting and annual audit. Quivira Coalition completed the sale of the Valle Grande Ranch (VGR) in 2011. Proceeds from the ranch sale will be used to increase organizational capacity through long-term investments including professional development, addition of personnel and computer resources and establishment of a working capital fund. Administration includes the expenses associated with a critical strategic planning process for the overall organization.

## EXPENSES

Advertising and Promotion	\$21,079
Computer Hardware/Software	\$2,238
Event Food	\$33,151
Organizational Insurance	\$11,164
Licenses and Fees	\$14,964
Program Materials and Supplies	\$17,969
Payroll Expenses and Benefits	\$299,848
Postage and Delivery	\$2,260
Professional Fees	\$195,549
Printing and Reproduction	\$11,076
Venue and Equipment Rental	\$14,826
Resale Products	\$2,418
Communications and Utilities	\$9,224
Travel	\$52,902
Maintenance and Repairs	\$6,147
Valle Grande Ranch Expenses	\$13,841
Donations and Grants Given	\$144,399
Other	\$2,132
<b>Total Expenses</b>	<b>\$855,186</b>

## ASSETS

Current Cash	\$555,260
Fixed Assets	\$1,183,703
Other Assets	\$16,687
<b>Total Assets</b>	<b>\$1,755,650</b>

## YEAR END LIABILITIES

<b>Total Liabilities</b>	<b>\$299</b>
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## INCOME

Program Contractual	\$38,927
Program Grants	\$530,949
Public Contributions	\$82,481
Registration Fees	\$57,949
Product Sales	\$11,386
Rent	\$29,493
In-Kind	\$6,823
Other	\$14,945
Net Cash Proceeds from Sale of VGR	\$300,000
<b>Total Income</b>	<b>\$1,072,952</b>





# 2011 Board and Staff

## Board of Directors\*

**Joan Bybee, Chair**

Educator, Rancher

**Sid Goodloe, Vice Chair**

Rancher

**Frank Hayes, Secretary**

Heart and Horn Ecological Services, LLC

**Craig Conley, Treasurer**

Professor, New Mexico Highlands University

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Biologist

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**Arturo Sandoval**

Center for Southwest Culture

**Beth Schnieders**

Sustainable Food Advocate

\*Affiliations of the board members are listed to convey the breadth of experience that these individuals bring to the governance of the Quivira Coalition.

## Staff

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Executive Director

**Catherine Baca**

Education and Outreach Program Director

**Michael Bain**

Land and Water Program Director

**Avery C. Anderson**

Capacity Building and Mentorship  
Program Director

**Tamara Gadzia**

Publications Director

**Ellen Herr**

Office and Membership Coordinator

**Deanna Einspahr**

Business Manager



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