

2010 ANNUALREPORT



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

We do so via four broad initiatives: (1) improving land health; (2) sharing knowledge and innovation; (3) building local capacity; and (4) strengthening diverse relationships.

Specifically, our projects include: an Annual Conference, a ranch apprenticeship program, a long-running riparian restoration effort in northern New Mexico on behalf of the Rio Grande Cutthroat trout, a capacity-building collaboration with the Ojo Encino Chapter of the Navajo Nation, various outreach activities, and the promotion of the idea of a carbon ranch, which aims to mitigate climate change through food and land stewardship.

Background

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, a Journal, the New Ranch Network, a small loan program, and an Annual Conference.

From 1997 to the present, at least 1 million acres of rangeland, 30 linear miles of riparian drainages and 15,000 people have directly benefited from the Quivira's collaborative efforts. We have also organized over 100 educational events on topics as diverse as drought management, riparian restoration, fixing ranch roads, conservation easements, reading the landscape, monitoring, water harvesting, low-stress livestock handling, grassbanks, and grassfed beef; published numerous newsletters, Journals, bulletins, field guides, and books, including a rangeland health monitoring protocol. Our most recent publication is a 258-page manual on riparian restoration titled *Let the Water Do the Work* published in October, 2009.

From 2006-2010 we managed the innovative Valle Grande Grassbank, located near Santa Fe, eventually becoming producers of local, grassfed beef.

But more importantly, the Quivira Coalition has lit sparks across the West that have grown 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 innovations, scientists to get more involved, and the public to support all of the above.

New Goal

As the world changes, we needed to keep changing too. Although no one knows 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 daunting and varied.

We believe that one response to these multiple challenges is to increase ecological and economic resilience of communities and landscapes. The dictionary

1



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.

Two concerns in particular stood out: **Reversing Ecosystem Service Decline and Relocalizing Food.**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.

The inevitability of rising energy costs mean more and more of our daily lives, from food production to where we work and play, will be increasingly relocalized at local and regional scales. This won't be by choice, but by necessity.

To help address these concerns, 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.

Today

Our work is focused in three Program Areas: Education & Outreach, Land and Water and Capacity Building and Mentorship.

From its inception, the Quivira Coalition has engaged in a variety of educational outreach activities, including an annual conference, a publications program, workshops, websites and public speaking engagements.

The Annual Conference. This upbeat event, which regularly draws over five hundred people – a third of whom are ranchers – 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 and many others.

Comanche Creek... Building Resilience to Survive Climate Change. 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 with the goal of improving the survival chances of the Rio Grande Cutthroat trout, New Mexico's state fish. Comanche Creek is typical of many areas that have historically experienced adverse human impacts, including poor timber management, overgrazing by livestock and mineral extraction. These activities created numerous poorly constructed roads, depleted vegetation in riparian zones and unprotected stream banks. The results of these land use practices led to increased erosion that has amplified the sediment load within the watershed. Today, the few remaining populations of Rio Grande 'cuts' face a significant new challenge: global warming, which includes a likely reduction in the abundance of clear, cold water that trout require for survival. To build resilience for the Rio Grande Cutthroat trout to meet the challenge of climate change, the project must: (1) expand the current habitat restoration work from selected segments of Comanche Creek to its entire 27,000-acre watershed;

2



and (2) implement a sustained effort over a sufficiently long period of time to ensure the population's viability. This includes repeated maintenance, monitoring, and assessments.

Other 2010 land health projects include treatments on the Dry Cimarron River, Mora River, Cañon Bonito Creek, Ponil Creek, the Valle Grande Ranch and Red Canyon Reserve (RCR), a successful "how to restore and maintain the ecological integrity of small land parcels" demonstration project.

Conservation and Ranch Leadership and Youth (CARLY). This is a leadership development program targeted at young people who have a sincere commitment to sustainable agriculture. We seek applicants who are willing to enter a year-long mentoring program that offers experiential training in all aspects of a resilient agricultural enterprise. Aspects of the curriculum include animal husbandry, range health monitoring, planned grazing, herding, road restoration,

range infrastructure maintenance, marketing grassfinished beef, business planning, small-scale gardening, and low-stress livestock handling.

Tribal Partnerships. In 2005, the Quivira Coalition was approached by members of the Ojo Encino Chapter of the Navajo Nation for assistance with a workshop aimed at developing long-term grazing plans for recently treated rangelands. What began as a two-day grazing workshop has blossomed into a multifaceted effort that includes stream channel restoration, grazing plans, vegetation management, monitoring and erosion control. More importantly, the community is reengaged in the management of their land and adjoining Navajo Chapters are interested in adopting the model. The ultimate goal of the Ojo Encino Project is to build sufficient organizational capacity within the Chapter so that members can develop strategic plans, implement projects and administer grants without outside assistance.

EDUCATION and **OUTREACH** Since our founding, Quivira Coalition's

principle work has been educational. Over the years, we have focused on finding 'teachable' moments for diverse audiences through our outdoor classrooms, workshops, demonstration projects, tours, lectures, conferences, publications and awards. Today, this program concentrates on (1) an annual conference, Clarence Burch and Radical Center Awards; (2) publications and web sites (3) the New Ranch Network; along with (4) speaking engagements and other outreach opportunities. In each, we strive to disseminate innovation as widely as possible while maintaining

9th Annual Conference

On November 10-12, 2010, the Quivira Coalition hosted its 9th Annual Conference: The Carbon Ranch: Using Food and Stewardship to Build Soil and Fight Climate Change.

our reputation for quality and integrity.

The inspiration for the conference came from a Report (#179) by the Worldwatch Institute, co-authored by Dr. Sara Scherr, who was one of our Conference speakers. The Report stated: "More than 30% of all greenhouse gases arise from the land use sector. Thus, no strategy for mitigating global climate change can be complete or successful without reducing emisssions from agriculture, forestry, and other land uses...improved land management could offset a quarter of global emissions from fossil fuel use in a year..."

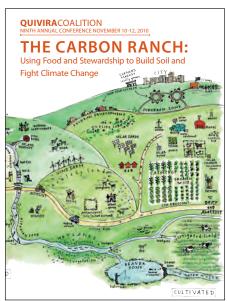
They wrote that the only possibility of large-scale removal of greenhouse gases from the atmosphere is through plant photosynthesis and other land-based carbon sequestration activities. Strategies include enriching soil carbon, farming with perennials, employing climate-friendly livestock practices, conserving natural habitat, restoring degraded watersheds and rangelands, and producing local food.

Which almost exactly describes the work of the Quivira Coalition!

This gave Executive Director Courtney White the idea for a carbon ranch, whose purpose, he wrote in an essay, "is to mitigate climate change by sequestering additional CO₂ in plants and soils, reducing greenhouse gas emissions, and producing co-benefits that build ecological and economic resilience in local landscapes."

We then created an idealized map of a carbon ranch, illustrated by artist Jone Hallmark and produced by Tamara Gadzia, which we debuted at the conference. The map tries to capture every carbon sequestering, greenhouse gas emission reducing, and co-benefit

producing activity we could think of, integrated into a landscape without the usual boundaries, conflicts or Us vs. Them choices that characterize western lands today. The resulting vision is one of stewardship, coexistence and resilience - all



with the goal of "Fighting Climate Change...One Acre at a Time" as we put it in an op-ed. Or as rancher John Wick, director of the Marin Carbon Project, and another conference speaker, likes to put it: "Carbon ranching has no downside."

To illustrate all of these points, we assembled an outstanding list of speakers, all of whom are 'carbon pioneers' in their own right. The list included:

- Steve Apfelbaum, Applied Ecological Services
- Dr. Bill Chameides, Dean of the Nicholas School of the Environment, Duke University
- Abe Collins, New Soil Matrix
- Dr. Jeffrey Creque, agroecologist with the Marin Carbon Project
- Brock Dolman, Director of the Occidental Arts & **Ecology Center**
- Dr. Christine Jones, Founder of the Australian Soil Carbon Accreditation Scheme (Keynote)
- Greg Judy, rancher and 'mob-grazing' educator
- Dr. David Montgomery, geologist and author of Dirt!: The Erosion of Civilizations

2010 Conference Statistics

- Jeff Moyer, Farm Director for the Rodale Institute, organic no-till
- Constance Neely, consultant for land, livelihoods and climate change
- Nancy Ranney, rancher, Ranney Grassfed Beef
- Sara Scherr, Ecoagriculture Partners
- John Wick, rancher and leader of the Marin Carbon Project
- John Kamanga, coordinator of the South Rift Association of Land Owners - Kenya, Africa
- Young Agrarian Panel

Both the topic and the speakers made the prospects for the conference very exciting, but still left a nagging question: would people attend? Climate change is a controversial subject in many quarters, especially among rural communities. Even though we were focusing on soil, food and stewardship in the conference, not climate change per se, we wondered how the event would be received. And not only how many would attend, but who would attend?

Well, we're very happy to report that it was another successful event, with nearly 500 participants, a third of who were ranchers and landowners. Nearly half hailed from outside of New Mexico as well.

A pre-Conference Workshop – *Improving the Carbon Cycle on Your Land* with Craig Sponholtz and Doug Weatherbee, and *Mob-grazing* with Greg Judy, a rancher and educator – drew 300 people. This was followed by an evening lecture by Dr. David Montgomery, a professor

of geology at the University of Washington and author of the book *Dirt: The Erosion of Civilizations*, that also drew a large audience.

In sum, the event both exceeded our expectations and raised the bar (again) for many participants. We tackled a complicated and unfamiliar topic, but thanks to the help of an outstanding roster of speakers, strong support from our sponsors, and a great sense of camaraderie and community among the attendees, we came away feeling like we had organized our best annual conference yet. This year we widened our conference outreach by utilizing social media platforms facebook, wiki and twitter.

Of 477 Attendees:	Number	 Percent
New Mexico	252	53%
California	55	12%
Colorado	52	11%
Arizona	26	5%
Texas	16	3%
Other Western States	31	6%
Eastern States	33	7%
International	10	2%
Agrarians	158	33%
General Public	80	17%
Environmentalists	76	16%
Academic	53	11%
Business	44	9%
Public Servants	32	7%
Tribal	24	5%
Media	3	1%
Foundation Representatives	7	1%



Participants at Quivira's 2010 Annual Conference. (Photo by Tamara Gadzia)

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, 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.

2010 Nominees included:

- Jim Crosswhite, Nutrioso, Arizona
- Joyce E. Dearstyne, Executive Director of Framing Our Community, Elk City, Idaho
- Earth Care, Santa Fe, New Mexico
- Framing Our Community, Elk City, Idaho
- Christopher Gill and the Circle Ranch, San Antonio, Texas
- National Center for Appropriate Technology, Butte, Montana
- Rio Grande Headwaters Land Trust, Del Norte, Colorado
- Don and Jane Schreiber, Blanco, New Mexico
- Tom and Mimi Sidwell, JX Cattle Company, LLC, Tucumcari, New Mexico

The 2010 (\$20,000) Clarence Burch Award was presented to the **Altar Valley Conservation Alliance** (**AVCA**), which is a land-based collaboration nonprofit of ranchers and other landowners located southwest of Tucson, Arizona during the Friday evening banquet. The Award will help the Alliance start an annual Altar Valley Watershed Research Fellowship, to encourage natural or social science research in the area.



Andy Dunigan, Mary Miller and Pat King (AVCA), Bill Zeedyk, Tom Sheridan (AVCA), Steve Carson, and David Seibert (AVCA). (Photo by Tamara Gadzia)

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.

The Quivira Coalition Board and staff were honored to award the "Outstanding Leadership" Award for 2010 to:

- RANCHING: Tom and Mimi Sidwell, JX Ranch located in northeastern New Mexico
- CONSERVATION: Dan Taylor directs the Water for Wildlife Project for Bat Conservation International (BCI)
- CIVIL SERVICE: Maryann Mcgraw, is the Wetlands Program Coordinator with the New Mexico Environment Department (NMED) Surface Water Quality Bureau
- RESEARCH: Christine Jones, Ph.D. is an internationally renowned and highly respected groundcover and soils ecologist from Australia



Maryann McGraw and Courtney White (Photo by Tamara Gadzia)

2010 New Ranch Network

In 2010, the New Ranch Network funded two projects for a total of \$8,000. The funds were granted to the Quivira Coalition for a small grants program from Region 3 of the USDA Forest Service. The grants specifically target projects, workshops and monitoring related to permittees in Region 3. 2010 projects were granted to: Bat Conservation International (BCI) for Water for Wildlife workshops conducted by Dan Taylor throughout the southwest from September, 2009 through August, 2010. These workshops target wildlife escape ramps in livestock drinkers to help optimize benefits for livestock weight gain and benefit bats as well as all wildlife (Photo below by Catherine Baca).



The Southwest Grassfed Livestock Alliance (SWGLA)

for a grassfed beef seminar in Tucson, AZ titled, "Beyond the Farmers Market: Marketing Opportunities and Production Possibilities for a More Successful Grass-fed/Local Beef Operation" (Photo courtsey of SWGLA).



The Valle Grande Ranch WHIP Project

In 2009, the Quivira Coalition contracted with the USDA NRCS WHIP (Wildlife Habitat Improvement Program) on its Valle Grande Ranch on Rowe Mesa. Quivira partnered with Bat Conservation International to develop water improvements on the ranch to help encourage and identify the bat population in the area.

In 2009, with the help of the Mike Jones, NRCS representative, and Dan Taylor from BCI, a pond designed for wildlife was built and water catchment system expanded to feed the pond. To complete the contract, in 2010, a catchment wildlife drinker was installed and brush management conducted. Future efforts to identify bat species are planned as first attempts were unsuccessful.





Top: Water harvesting system. Above: Wildlife drinker. (Photos by Catherine Baca)

Publications

The Back Forty, February 2010

There is a growing disconnect between the Front Forty and the Back Forty in America. Increasingly, the news from the Front Forty — Washington, D.C., Wall Street, state capitols, mainstream news outlets — has become both discouraging and unreal. That's because so little actual progress is being made anywhere on critical matters and because current events seem so utterly disconnected from how the world actually works – disconnected from the land, for instance.

In contrast, the news from the Back Forty is very encouraging. In many places people are solving on-the-ground problems with innovative ideas, cooperative efforts and abundant enthusiasm. For example, a Texas farmer had built a working hydrogen fuel cell battery in his barn from off-the-shelf parts. He looked like someone from a Norman Rockwell painting, proudly showing off his invention – a green energy gizmo!

It confirmed the feeling that American ingenuity and can-do spirit is alive and well – on the Back Forty. You just never hear about it in the Front Forty press.

In this issue of our Journal, we tried to correct this imbalance a little bit by offering stories of actual progress from the Back Forty.

The Cuivira Journal A Voice of the New Agrarianism No. 35 February 2010 The Back Forty and the Big Picture* Grady Grissom P.3 Colloquium The Back Forty Down Under: Adapting Farming to Climate Variability* — Christine Jones P. 11 Building Resilience Resilience on the Praine Edge: the 77 Buffalo Ranch* — Kirk Gadras P. 17 A View from the Back Forty Thousand" — Tammy Hoernal — Tam

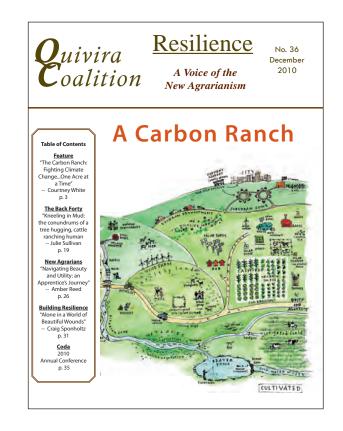
A Carbon Ranch, December 2010

In this issue we introduced a new title, a new purpose, and a new idea. The title is **Resilience** which reflects the ongoing mission of the Quivira Coalition to build ecological and economic resilience on western working land-scapes.

Accomplishing this mission, however, 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, *Resilience*, as a way to give voice to this critical new movement. For this inaugural issue of *Resilience*, we are also introduced a new idea: The Carbon Ranch. Its purpose is to mitigate climate change by sequestering additional carbon dioxide in plants and soils, reducing greenhouse gas emissions and producing co-benefits through good land stewardship.

It's all about building resilience. It's also about a land ethic – which is why we decided to include three essays here that were delivered at our 2009 annual conference, which celebrated Aldo Leopold. It's all part of the new agrarianism — the why and the how.



LAND and WATER Our 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 to local food production. Today our work concentrates geographically on north-central New Mexico (Comanche, Cimarron, and Mora watersheds), our Red Canyon Reserve and the Santa Fe area. Additionally, we participate in various committees and coalitions that are also committed to implementing land health projects.

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. Work in Comanche Creek is designed to support the goals of the Comanche Creek Rio Grande Cutthroat Trout Habitat Restoration Project. These goals are to improve the condition of the Comanche Creek watershed to meet New Mexico water quality standards and to restore normal hydrologic function to Comanche Creek and tributaries while improving habitat for the Rio Grande cutthroat trout (RGCT), other native fish and aquatic species and terrestrial wildlife.

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



Comanche Creek channel realignment during construction, July 15, 2010. (Photo by Michael Bain)

Comanche Creek Volunteers: The highlight of each year's work in the Valle Vidal is the Comanche Creek Workshop. In 2010 45 volunteers gathered to spend two days and donated a total of over 800 hours performing vital maintenance work on the in-stream structures and exclosures that have been constructed during the last 9 years. A critical need for 2010 was to repair damage to 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. This commitment from our partners and volunteers will insure that the resources invested in past work will continue to improve the watershed's resilience.

RERI Multi-Basin Project Completed: In addition to the work done at the 2010 Workshop, the implementation phase of the Comanche/Gold portion of Riverine Ecosystem Restoration Initiative (RERI) grant was completed. As part of the restoration treatments, Rangeland Hands, Inc. successfully re-aligned a meander of Comanche Creek that was causing severe erosion, bank de-stabilization, and threatening Forest Road 1905 with collapse. In addition to this work, a culvert and dirt



New channel alignment with after construction and rain event, July 20, 2010. (Photo by Michael Bain)



Volunteers help construct bank stabilization treatments on Comanche Creek. (Photo by Michael Bain)

embankment associated with a old wagon road that was being undermined and threatening to fail, was removed from Gold Creek. This culvert removal also reconnected the stream for free passage of RGCT in to the upper reaches of Gold Creek.

Future Work in Comanche Creek: Our work to support the goals of the Comanche Creek Rio Grande Cutthroat Trout Habitat Restoration Project entered a new phase in 2010. As the effects of climate change and the amplification of natural drought cycles in the Southwestern U. S. become better understood, the need to reconnect fragmented stream habitat is emerging as a critical need to help ensure the continued survival of the RGCT. This need will be addressed by strengthening our efforts to build resilience into the watershed's ecosystem by 1) expanding the current habitat restoration work from the main-stem of Comanche Creek to the entire 27,000 acre watershed; and 2) by implementing a sustained effort over a sufficiently long period of time to ensure the habitat is in place to maintain a viable population.

In 2010, this effort was moved forward as the results of a three year habitat impediment survey of the middle and upper reaches of the Comanche Creek watershed were converted to GIS mapping layers and presented to the Questa Ranger District (QRD) staff. The survey revealed a wide-spread pattern of headcutting and bank destabilization in Comanche Creek and its tributaries. After reviewing this data, Quivira and the QRD worked with partners to write a 3-year RERI grant to address reconnecting stream habitat in the upper Comanche Creek and its tributaries. The grant, which was awarded

in September, consists of a prioritization of treatment areas based on the impediment survey for a National Environmental Policy Act (NEPA) analysis of treatment sites and methods. After this analysis there are two field seasons of treatment implementation work planned. As a large part of this work area is not readily assessable by heavy equipment, our volunteers and the manpower they bring will be core component of these restoration efforts.

RERI Multi-Basin Mora River Project

The companion project to Comanche Creek Multibasin RERI is on the Mora River at Wind River Ranch in Mora County, New Mexico. Wind River Ranch is owned by the Thaw Foundation and is dedicated to wildlife preservation and conservation. In 2010 treatment implementation by Dryland Solutions was finalized by adding over one acre of wetlands to the river's riparian area and the addition of a ~300 foot re-route of the river to restore sinuosity to the artificially straightened channel. In addition, over 20 volunteers worked an excess of 320 hours during a workshop to install 12 one rock dams in Falcon Canyon, a tributary to the Mora River. These one rock dams will help slow runoff and increase water infiltration into the soil resulting in an increase in riparian vegetation in the canyon and a more stable flow regime from the canyon into the Mora River. This work under the RERI grant, was also leveraged into additional funds by Wind River Ranch and Dryland Solutions from the U.S. Fish & Wildlife Service for work immediately downstream of the RERI project area.



Wind River Ranch, Mora River, New Mexico. Craig Sponholtz and Bill Zeedyk discussing riparian vegetation establishment with workshop volunteers, May 2010.



A "mega" Zuni bowl being built by Craig Sponholtz to heal a headcut on Windmill Draw, Red Canyon Reserve, May 2010. (Photo by Tamara Gadzia)



Volunteers help build erosion control structures on Windmill Draw, Red Canyon Reserve, May 2010. (Photo by Tamara Gadzia)

Red Canyon Reserve

2010 was a great year for the rangelands of Red Canyon Reserve. The native grasses exploded in impressive display of species composition and shear biomass. A walk-thru by the RCR Steering Committee members Steve Carson, Kirk Gadzia, Cullen Hallmark and Frank Hayes reviled over 40 species of grasses and forbs. Discussions among the Steering Committee are now turning toward how to best manage the range to maintain and promote this increase in biodiversity and resilience following this very successful period of rest.

RCR also hosted a May workshop that drew 27 volunteers who donated over 430 hours of hard, rewarding work installing one rock dams, Zuni bowls, and media lunas in Windmill Draw. A highlight of the workshop was the installation, by Dryland Solutions, of large Zuni bowl to stop the upward progression of a headcut through Windmill Draw.

A project plan to install wildlife drinkers and continue erosion control work was finalized and will be implement in 2011 as part of a Partners for Fish & Wildlife Grant from USFWS.

Dry Cimarron River

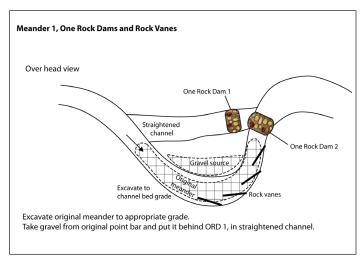
Background. Throughout the American Southwest and across arid landscapes of the world, rivers are undergoing an epoch of channel down-cutting characterized by the loss of floodplain access, reduced sinuosity, accelerated rates of streambed and bank erosion, reduced bank storage, radical fluctuations between flooding and no flow events, loss of wetlands

and wetland habitats, and declines in wildlife and fish species diversity and abundance. In addition, our current understanding of the local effects of climate change include a significant increase in the severity and intensity of precipitation events, increased stream water temperatures and earlier snowpack run-off — all of which will increase stress on and put at risk riverine and riparian systems. If this ecosystem decline is not addressed in a proactive manner, there is the sobering probability that the associated ecological services will suffer degradation as well.

The Dry Cimarron River flows through four states (New Mexico, Oklahoma, Colorado, and Kansas), is a tributary of the Arkansas River system and extends over 698 miles (1123 km). The headwaters of the Cimarron River originates 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 Dry Cimarron Project reach on Rainbow Ranch has been affected by hydro-modifications, grazing practices and the removal of riparian vegetation. The result of these actions caused the channel to straighten, down-cut and create high eroding banks without stabilizing riparian vegetation

The primary goal of the Dry Cimarron Riverine Restoration Project, a 2008 State of New Mexico River Ecosystem Restoration Initiative Grant (awarded May, 2009), is to restore and maintain in-stream and riparian ecosystem functions and the associated ecosystem







Top: aerial map of meander 1. [Google Earth by Trish Jenkins]
Middle: schematic of Meander 1. [Graphic by Trish Jenkins]
Looking upstream of Meander #1, Dry Cimarron River, Rainbow Ranch.
(Photo by Avery C. Anderson)

services. This will be accomplished by restoring the natural meander system of a targeted subreach (approximately 5,680 feet). This in-stream restoration will result 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 are water filtration, 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.

Three meanders, that have been interrupted by human manipulation of the river channel or as a result of upstream denuding of rangeland, will be reinstated.

2010 Progress. The final project design was completed thanks to the restoration expertise of Bill Zeedyk (Zeedyk Ecological Consulting), Steve Vrooman (Keystone Restoration Ecology), and Craig Sponholtz (Dryland Solitions, Inc.). In addition, Steve Vrooman completed all of the pre-implementation geomorphological and vegetation monitoring necessary to set baseline riparian health levels. Avid birder, Deanna Einspahr, and a colleague from the National Audubon Society completed a base-line bird survey in the Fall of 2010, and plan to do a second survey before work begins in the Spring of 2011. In an effort to track the visual effect on the landscape photo monitoring points were established and, pre-implementation photos captured. Lastly – GIS expert, Patricia Jenkins, compiled all of the above data into a single GIS file from which we are able to create useful maps.

Pre-implementation data collected provided the information necessary to write an application to the Army Corps of Engineers for a Nationwide 27 404 Permit. This permit, in addition to archaeological clearance, is necessary before work can begin. With the permit in hand, the implementation phase of the project will commence in early 2011.

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.

Land and Water Partnerships

In additional 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 will involve USFS land in the Valle Vidal Unit of the Carson National Forest and consist 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 proposal would benefit both local communities and federal lands. Land and Water also supports and is a Board member of the Southwest Grassfed Livestock Alliance.

2010 Partners:

- Carson National Forest, Questa Ranger District
- New Mexico Environment Department
- Patagonia Corporation
- New Mexico Department of Game & Fish
- Cimarron Watershed Alliance
- U. S. Fish & Wildlife Service
- Zeedyk Ecological Consulting
- Rangeland Hands
- Resource Management Services
- Dryland Solutions
- Keystone Restoration Ecology
- Trout Unlimited, Truchas Chapter

Valle Grande Ranch

The Rowe Mesa Grassbank was created in 1998 by Bill deBuys and the Conservation Fund as a pilot project to demonstrate the potential



of grassbanks as a conservation tool on public land and to support rural economies in northern New Mexico. The expectation was that a successful demonstration would lead to other public lands grassbanks being created on other forests. In 2004, the Valle Grande Ranch and the Rowe Mesa Grassbank project was handed over to the Quivira Coalition.

However, after eight years in operation, there were no other federal lands grassbanks in operation or on the drawing boards that we were aware of. By far the greatest challenge was financial. The second was leveraging conservation benefits effectively. On both fronts, the Rowe Mesa Grassbank ultimately fell short (for more information see "Grassbank 2.0" on the Quivira web site (www.quiviracoaliton.org).

In 2006, the Quivira Coalition transitioned the grassbank into the Valle Grande Ranch, which included a grassbank component. The goal was to run a sustainable grassfed beef operation on public land while accomplishing the original goals of the grassbank. Beef sales were conducted in 2007 and 2008. In 2008, sales were down by half from 2007 sales, probably due to the recession, which hit in the fall. The entire Quivira Coalition cattle herd of 56 head was sold.

We continued to grassbank in 2008, hosting 177 cattle from the neighboring Barbero Grazing Association for the summer to allow time for a 1200- acre meadow burn to recover. Also, eleven Criollo and twelve angus cross cattle from the USDA's Jornada Experimental Range grazed for data collection to be used to develop a larger, more rigorous experiment that compares the performance of Criollos with popular European breeds.

Because of financial constraints, in 2009 and 2010 and also range conditions in 2010 Quivira took a non-use option from the Forest Service. The Barbero herd was allowed to graze both years as a grassbank for restoration benefits on their home allotment.

The VGR's inability to produce income created a burden on the overall budget of the organization. In December 2010, the decision was made to sell the Valle Grande Ranch in order to recoup losses incurred over the six years of ownership.

CAPACITY BUILDING and MENTORSHIP Part of

the Quivira Coalition's mission is to encourage mentoring and capacity building for the next generation of agrarian leaders. To this end, we have formalized our Capacity Building and Mentorship Program. Within this program, we have implemented our Conservation and Ranching Leadership and Youth (CARLY) Program, which places aspiring agrarians in year-long apprenticeships with resilient agricultural operations around the Southwest. This comprehensive leadership-training program provides apprenticeships in sustainable ranching, grass-based diary and artisan cheese-making, and locally-sourced fiber production. In addition, through the Capacity Building and Mentorship Program, we have collaborated with the Ojo Encino Chapter of the Navajo Nation to rebuild ecological, cultural, and economic resilience on the reservation lands west of Cuba, New Mexico. The CARLY Program and our work on the Navajo Reservation are good examples of leveraging resources for the benefit of the land and the next generation of land stewards.

CARLY 2010

Our food system is at a crossroads. We are excited that there are thousands of young, enthusiastic people ready to learn and be part of the new sustainable food movement, but worry about how and where all of these eager new farmers and ranchers will get the mentorship they need. The Quivira Coalition is responding to this challenge by creating on-the-ground opportunities to train with successful practitioners so that vital, experience-based knowledge can be transferred to a new generation of agrarian pathfinders.

Background. In 2008, the Quivira Coalition partnered with several ranches and farms around the Southwest to launch CARLY – Conservation and Ranching Leadership and Youth. While the CARLY program was originally established with a focus on the intersection of conservation and ranching, the program now offers aspiring young agrarians a broad range of agricultural experiences. We seek to pair eager apprentices with experienced mentors in sustainable agricultural operations around the Southwet. The CARLY 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.

With generous support from the Thaw Charitable Trust, the Dixon Water Foundation, the Davidson Foundation, the Barbara Roastingear and Harry Oliver Family Foundation and the Albert I. Pierce Foundation, the CARLY Apprentice Program has blossomed over the last three years to become 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 CARLY Mentors on four different agricultural operations, presented the accomplishments of the CARLY Program at a national conference in Washington D.C., and recruited, trained, and graduated three CARLY Apprentices -Amber Reed, Sam Ryerson, and Daniel Escutia – from the CARLY Program. These three individuals represent the essence of "agrarian" and the hope for the future of the sustainable agriculture movement.

Meet the CARLY 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



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

teaching. Together they have developed a successful business model. Their 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.

The CARLY curriculum implemented on San Juan Ranch includes animal husbandry, range health monitoring, pasture rotation planning, Holistic Management, herding, road restoration and maintenance, range infrastructure maintenance, finishing process for grass-fed animals, marketing grass-finished beef, business planning, low-stress livestock handling and small-scale gardening. In addition, the curriculum includes a series of professional development opportunities. Apprentices emerge from the program with tangible skills, both technical and interpersonal, that are essential for successful employment as a ranch/land manager.

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 forty-eight years. Three generations of the James family now cooperatively produce: 1) grass-fed and finished beef from Red Angus cows (Dave and Kay James), 2) artisan cheeses made of raw milk from Jersey cows raised and milked right on the ranch (Dan and Becca James), 3) pasture-raised pork from heritage breed pigs on the farm (Dan and Becca James), 4) brown &



Dan and Rebecca James of James Ranch Artisan Cheese, Durango, Colorado. (Photo by Becca James)

green eggs from pastured chickens (Julie and John Ott), 5) vegetables, flowers, and fruits (Jennifer and Joe Wheeling), and 6) mature, naturally grown, native spruce trees for landscaping (Julie and John Ott). This growing family collectively uses Holistic Management to guide the management of their operations, and their mission statement encompasses considerations for the land, their animals, their family, their finances and their future: "The integrity and distinction of the James Ranch is to be preserved for future generations by developing financially viable agricultural and related enterprises that sustain a profitable livelihood for the families directly involved, while improv-

ing the land, and encouraging the use of all resources, natural and human, to their highest and best potential."

The CARLY curriculum implemented by James Ranch Artisan Cheese includes animal husbandry (dairy cows, heritage breed pigs, and chickens), pasture health monitoring, pasture rotation planning, Holistic Management, low-stress livestock handling, dairy infrastructure maintenance, milking, making cheese, marketing, business planning and small-scale gardening. The curriculum also includes a series of professional development opportunities. Apprentices emerge from the program with tangible skills, both technical and interpersonal, that are essential for successful employment as an agrarian leader, and eventual owner-manager of their own dairy operation

TAPETAS de LANA: Tapetes de Lana is 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 by demonstrating that the cottage weaving industry offers a fulfilling, empowering and economicallysustaining option, particularly for individuals who wish to remain in their rural communities.

The CARLY apprenticeship with Tapetas de Lana is somewhat different in nature than the other CARLY Agrarian apprenticeships in that a majority of the apprentice's



Tapetas de Lana, a nonprofit wool mill in Mora, New Mexico. (Photos by Avery Anderson)



time is spent in the wool mill, rather than out on the land with livestock. We feel, however, that this apprenticeship with Tapetas offers a truly unique experience where apprentices are exposed to the value-added process associated with fiber production and fiber arts. In addition, Quivira believes in the mission of Taptetas de Lana, and thinks that fiber is a crucial component of a resilient agrarian economy. In the apprenticeship with Tapetas, apprentices are exposed to all aspects of the mill's work and manage-

ment, and they also have the opportunity to explore the possibility of small-scale farming on an irrigated property along the Mora River in Holman, New Mexico.

THE 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 BLM land. Their ranch encom-

passes four different biomes and 30 different species of native plants. Dennis grew up in Phoenix 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 fam-



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

ily'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 they plan to include the public engagement aspect of ranching in their CARLY Apprenticeship.

San Juan Ranch, James Ranch Artisan Cheese, Taptetas de Lana, and the 47 Ranch are ideal locations to place aspiring agrarians. Not only are these operations run by outstanding land managers, but they 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, Quivira now feels prepared and excited about the prospect of expanding our existing program and launching a long-awaited CARLY Apprenticeship on the 47 Ranch in 2011.

CARLY's Success in 2010. In 2010, the CARLY program successfully recruited, trained and graduated two CARLY Apprentices (Amber Reed and Sam Ryerson) and placed a third CARLY Apprentice (Daniel Escutia) at a wool mill in Mora, New Mexico.

AMBER REED: Amber Reed, from Leadville, Colorado, was the first CARLY Ranch Apprentice. We had nearly 60 applicants for that first CARLY position, verifying our suspicion that we were fulfilling an unmet need for young agrarians.

Amber began her twelve-month apprenticeship with San Juan Ranch on April 1, 2009 and graduated a year later on April 1, 2010. In her six-month progress report Amber wrote: "I am dividing my learning into thirds: practical skills, management, and on-the-ground application. This division also suits my learning style. I like to observe how/

why something is done, practice with someone and then complete the task on my own."

In addition to acquiring all of the basic ranch skills, Amber successfully completed her CARLY Capstone Project - an element of the CARLY program intended to strengthen leadership skills. She spent the last year immersed in the logistics of creating a logo, USDA label, website, as well as a local farmer's market presence for San



CARLY Apprentice, Amber Reed and CARLY Mentor, Dan James, putting weaning nose ring on calf. (Photo by Avery Anderson)

Juan Ranch beef. In her final report for the CARLY Program she wrote:

"My apprenticeship on the San Juan Ranch with George and Julie was a watershed experience. The experience started a cascade of ideas, events, and knowledge, which have, and will continue to, focus on a real purpose: to prepare me for life as a serious agrarian with resilience, scope and ingenuity... I am proud of what I have accomplished here, and I feel that after a second year in the CARLY Program -- working on a progressive dairy, I will be ready to run my own operation."

In its original incarnation, CARLY was a two-year program. In a single year, apprentices have a chance to experience a four-season operation, but staying for a second year enables them to see the repercussions of decisions made in their first year. In Amber's case, as she neared the end of her time on the San Juan Ranch, she was certain that she would need a second year – but this time on a grass-fed dairy. Utilizing the Quivira network, as well as contacts that she had made through professional development opportunities provided by the CARLY program, Amber found and negotiated a second-year CARLY Apprenticeship on a progressive grass-fed dairy near Durango, Colorado. This is a significant accomplishment for both Amber and the CARLY program. In five years, Amber

sees herself managing (and eventually owning) a small grass-fed dairy, and the CARLY Apprentice program is equipping her with the various tool-sets that she will need to face the challenges of managing her own operation.

Amber completed her second year CARLY Apprenticeship with James Ranch Artisan Cheese in November 2010, and headed back to New Eng-



Amber Reed milking the girls at the James Ranch, Colorado. (Photo by Avery Anderson)

land to seek out her next dairy opportunity.

SAM RYERSON: Following on Amber's success, the Quivira Coalition and San Juan Ranch hired a second CARLY Ranch Apprentice. On December 1, 2009, Sam Ryerson from Red Lodge, Montana, began his year-long apprenticeship. Sam came to the CARLY Apprentice Program with a solid background in basic ranch skills, but was looking for an opportunity to mentor with a ranch where he could sharpen his understanding of the business end of a profitable and sustainable ranch operation. Even given his experience in ranching, Sam expressed his appreciation for the education provided through the CARLY Program in his first quarter report he wrote:

"I have watched veterinarians palpate cows many thousands of times before, but I was always backed up the alley on a horse, working cattle to the chute. None of that compares to actually reaching inside the cow and feeling for a fetus myself. George took the time one afternoon to show Amber and me how and what to feel for. We ran a few old cows into the corral to practice on. The animals, themselves, were mostly very patient. I won't beat a trained vet for efficiency or accuracy at this kind of thing, but it helps to know the process firsthand, so at least I can speak the same language."

We faced an unexpected challenge in the CARLY Program during the sixth month of Sam's apprenticeship when he received an unsolicited job offer to manage a large, progressive ranch in western New Mexico. For Sam, it was the opportunity of a lifetime. We hadn't anticipated that CARLY Apprentices would be sought out before the end of their terms, but to Sam's credit, he decided to stick with the CARLY Program, understanding the value of this unique educational experience. Ultimately, we were able to work with Sam and the soliciting ranch to impress upon them that Sam was worth waiting for, and to negotiate a delayed start date.

For Sam's Capstone Project, he took ownership and leadership in managing the San Juan Ranch's herd on the Baca Wildlife Refuge. The Baca Wildlife Refuge manager approached the San Juan Ranch several years back to ask for their assistance in using cattle to improve the health of some of the overgrown pastures on the refuge; their goal was to produce more grass and make the land more attractive for elk and ground-nesting birds. In his second and third quarter progress reports, Sam wrote:

"The Baca remains an interesting project. It's another chance to study the best ways of balancing animal performance with ecosystem health and with the specific needs of a Federal agency. We are establishing a biologi-



Sam Ryersen, CARLY apprentice herding cattle on the San Juan Ranch. (Photo by Avery C. Anderson)



Sam Ryersen, CARLY apprentice with San Juan Ranch Mentors Julie Sullivan and George Whitten. (Photo by Elaine Patarini)

cal monitoring protocol that incorporates fundamental ecosystem processes defined by Holistic Management principles and the specific habitat management concerns of refuge management. For instance, we are looking at the links between grazing impact, litter accumulation and bird-nesting habitat. This ongoing process will constitute my capstone project, which I hope might be of some beneficial use to both the ranch and the refuge."

As Sam neared the end of his CARLY Apprenticeship on the San Juan Ranch, he was humbled by the variety of different employment options available to him because of his participation in the program. In his final report he wrote:

"I came to the CARLY Apprenticeship on San Juan Ranch with the aim of preparing myself to manage the best kind of a progressive ranch. The thing I like most about this type of ranching is the constant challenge of thinking about all the different dimensions and scales of a ranch at the same time. I like that challenge. But it can also be the most frustrating part of ranching. Sometimes the part I like the best about ranching is just sitting on a horse in the hills watching some cows."

Sam graduated from his CARLY Apprenticeship on San Juan Ranch in November of 2010 and now serves as the ranch manager for the Spur Lake Cattle Company in western New Mexico. We are very proud of Sam and Amber, and further enthused about the success of our program in launching dedicated young agrarians into viable careers in sustainable agriculture.

DANIEL ESCUTIA: In the summers of 2009 and 2010, the Quivira Coalition partnered with Earth Works Institute, another Santa Fe conservation group, to host a joint Conservation Internship Program with both organizations. The purpose of the internship was to advance the careers of promising young adults through on-the-job mentorship. Our collaboration over the last two years has enabled us to run a highly successful program for a group of remarkable summer interns. The partnership between Quivira and Earthworks enabled us to leverage the funding for the Internship program and create a much richer internship experience than either organization could offer on their own. We understood this on a conceptual level as we entered into the first time partnership in the summer of 2009, but demonstrated for a second time in 2010 how well our two organizations could work corroboratively to serve eager young agrarians.



CARLY Apprentice, Daniel Escutia working fiber at Tapetas de Lana. (Photos by Avery C. Anderson)

The 2010 intern, Daniel Escutia, gained experience in building outdoor classrooms, restoring riparian ecosystems, field monitoring and organizing community stewardship activities. Additionally, Daniel was exposed to non-profit administration and management by assisting with grant writing, project coordination and budgeting/financial management.

When summer internship came to an end in the fall of 2010, Daniel's joined the CARLY Program as a CARLY Agrarian Apprentice with Tapetas de Lana in Mora, New Mexico. Daniel has an EXTREME fondness for wool and fiber arts, and comes from a strong background in small-scale farming. The apprenticeship with Tapetas de Lana has exposed him to all aspects of a successful wool mill. In addition, the mill manager, Carla Gomez, has rented Daniel a small farm where he plans to operate a market garden.

Building on our success in 2011. In 2011, we will place four new CARLY Agrarian Apprentices on the ground with San Juan Ranch, James Ranch Artisan Cheese, and 47 Ranch. In addition, Tapetas de Lana has decided to extend Daniel's successful apprenticeship in 2011.

As we 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 ranching 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 first two years of the CARLY Program and we continue to be energized about supporting the next generation of agrarian leaders through CARLY.

Building Bio-Cultural Resilience on the Navajo Nation

The goal of our efforts on the Navajo Nation is to develop a comprehensive climate change adaptation strategy that can be replicated in rural Native communities across the southern Colorado Plateau.

In 2010, we partnered with three Chapters of the Navajo Nation (Ojo Encino, Counselor, and Torreon) to establish a model for economically sustainable land restoration and management of tribal lands by connecting land health restoration with local food production and community involvement. Beginning on the fall of 2010, and projecting out over the next three years, we intend to:

- 1) identify and restore areas of high ecological potential on the south Colorado Plateau;
- 2) develop the capacity of Hasbidito 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;
- 6) gain a better understanding of how to integrate the traditions of Native American dryland agricultural with modern land management practices through research; and
- 7) improve the health of the rangeland by managing the feral horse population.

"Hózhó" is a Navajo word that means "walking in beauty" – or living in a manner that strives to create and maintain balance, harmony, beauty and order. This single word captures the essence of Navajo philosophy: the purpose of life is to achieve balance, and to nurture harmony in our lives. This concept forms the founding principal for understanding ecological and cultural resilience on Navajo land. Hózhó is similar to, but much richer in meaning than, the term "conservation" as it implies a deep connection between people and land. One cannot be restored without the other. In essence – hózhó is Navajo for "land ethic" – a term made famous by Aldo Leopold in his book

A Sand County Almanac (1949).

Quivira's work on the Navajo Nation embodies the Navajo principle of hózhó. We are actively "building resilience of the conservation infrastructure to withstand the impacts of climate change" (www.packard.org) by partnering with the communities of Ojo Encino,



Map showing location of Sandoval County, New Mexico.

Torreon, and Counselor to conserve biologically important areas of the Navajo Nation landscape, and simultaneously building social and economic capacity within the community so that they are more capable of implementing conservation-minded management in the future.

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, representing more than 276,000 acres. Our work in this three Chapter region is focused around building on traditional resilience strategies to climate change by restoring hózho. It's about restoring land health and cultural health by reconnecting people to land. It's about creating new land and water management systems. It's about feeding the community. It's about maintaining traditions. It's about re-engaging youth. 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.

CHALLENGES: The challenges facing these communities, and many others in Navajo Country, are wideranging and daunting. Many of the challenges (ex. the



The Ojo Encino summer youth crew, specializing in erosion control techniques. (Photo by Avery Anderson)

over-population of feral horses, the creation of permanent ranch units in the 1930s that immobilized an otherwise nomadic culture, the maze of roadways that has significantly modified surface hydrology and nutrient cycling at the landscape scale, etc...) directly explain the conservation challenges we see in Navajo country today – but are too highly politicized to adequately address with limited time and funding. This is not to say that these types of institutional challenges should be ignored, because they are repeated in Native American communities across the Colorado Plateau, and have certainly impacted our own work in the communities of Ojo Encino, Counselor and Torreon. In order to be effective, however, we have had to identify and focus in on challenges where we can affect positive change at a local scale and on a realistic timeline. Here are several of the challenges that we have chosen to address:

First and foremost, is poverty. Many people in the communities of Ojo Encino, Counselor and Torreon live without running water or electricity, and subsist on commodity food provided by the federal government that is causing obesity, diabetes, and ultimately death. As one elder recently said "we have known imbalance for so long, harmony feels unnatural." Finding solutions to the social, economic and political issues that plague this community will be a necessary component of restoring bio-cultural resilience – or hózhó - in these communities.

The second daunting challenge is that most Navajo people no longer depend on the local land base for sustenance. While it is certainly not our intention that these communities return to subsistence agricultural economies, there are cultural practices associated with agriculture that clearly sustain the health of the community and the health of the landscape. When land provides something that you NEED – it is natural that you would want to take good care of it! One of the biggest factors affecting land health is a rampaging population of feral horses. We



Feral horse herd at Ojo Encino. (Photo by Avery Anderson)



Landscape view around Ojo Encino. (Photo by Avery C. Anderson)

are actively addressing this challenge through the administration of the PZP (mare birth control) vaccine. As the Navajo have gone to an increasingly cash based economy, they have neglected the land that once sustained their ancestors.

The third challenge is getting young people involved in their communities, and demonstrating that there is meaningful work to be done in the community. One elder captured the challenge perfectly with the statement, "Our youth no longer see the land, they just see the road out of here." There are few opportunities for youth to make a good living on the reservation, and a crucial element of restoring hózhó will be re-engaging the imaginations and creativity of the next generation of land stewards.

And lastly, without question the challenge of a changing climate is already adversely affecting Native communities and landscapes across the Colorado Plateau. On average, the area around Ojo Encino, Torreon and Counselor gets approximately 10 inches of rain annually. Elders in the community of Ojo Encino remember a time when a five mile walk between the Ojo Encino Chapter House and home required making a conscious effort to stay on high ground because the low lands were too marshy to



Feral horse youth program at Ojo Encino. (Photo by Avery Anderson)

navigate on foot. Today, that same route is a wasteland of sagebrush and bare soil. If climate change follows current predictions, the southern Colorado Plateau is going to be completely void of live water, making human existence on this iconic cultural landscape increasingly difficult.

SUCCESSES TO DATE: In the last five years, Quivira has been actively working with the communities of Ojo Encino, Torreon and Counselor to build a resilient biocultural system that can be replicated by other Native communities.

In 2005, we were approached by a group of Ojo Encino ranchers who were running out grass, running out of money, and running out of time to reverse the degrading trend. Fortunately – they were also running out of patience with conventional land management dogma, and came to us with the sincere desire to be stewards of their community's resources. With the support of The Ojo Encino Rancher's Committee, The Quivira Coalition and the Rio Puerco Alliance, our Navajo colleagues have spent the last five years laying the groundwork for resilience in their community.

In 2008-2010, support from the Christensen Foundation enabled us to focus on the land health degradation issues associated with the large unmanaged feral horse population, and respond with a compressive plan that involved a change in management techniques, an effective birth control for mares (the PZP vaccine), and a new 4-H program in Ojo Encino targeted at reconnecting rural youth with traditional horse practices.

In 2009-2010, support from The David and Lucile Packard Foundation enabled us to expand the program beyond the borders of Ojo Encino, and we began to work with the communities of Counselor and Torreon, as well. Specific projects 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.

The community of Ojo Encino has successfully developed a summer youth crew that knows more about erosion control than many engineers, a community-wide plan for land and livestock management, a strategy for managing feral horses, and a commitment to reengaging with local agriculture. Perhaps the greatest success of 2010, was the emergence of Hasbidito. Our Navajo colleagues created Hasbidito, a Navajo-founded, Navajo-run conservation non-profit dedicated to building economic and ecological resilience in the region. Hasbidito is unique because is the ONLY Navajo-run non-profit organization





Dryland farm fields in Counselor (top) and Torreon (bottom). (Photos by Avery C. Anderson)

that has EVER existed in this community, and they have wisely positioned themselves to be adaptive to their communities' changing needs. Their ultimate goal is to build capacity for the sake of healthier landscapes and healthy people.

Based on the success of their first grant (2009-2010), The David and Lucile Packard Foundation has made a significant commitment for support in 2010-2013. We intend to share those funds (40% of the total in Year 1, 50% of the total in Year 2, and 60% of the total in Year 3) with Hasbidito in order to accelerate their trajectory towards independence. Ultimately, it is our goal that Hasbidito is capable of taking over a majority of our tasks, and that they become the facilitators of capacity building in their own community. We want to work ourselves out of a job!

Quivira's relationship with Hasbidito has been a real partnership, in that we have both learned a great deal from each other. Our Navajo partners have taught the Quivira Coalition, an organization dedicated to restoring land health, a number of valuable lessons about strategies for conservation in rural communities.

First, the only way to achieve durable ecological conservation in Native communities at a landscape scale is to approach people, culture and land as equal parts of the same system. You cannot go anywhere on this landscape without seeing artifacts of human presence. Land and culture are truly intertwined. To a large extent, the degradation we see on the landscape of the Eastern Checkerboard is the result of a forced separation between people, culture and land (hózhó). The most effective way to achieve conservation results is to pull those pieces back together through integrated bio-cultural resource management.

Second, we have learned from our Navajo colleagues that our success is dependent upon our understanding the way that Native people assign value to land. In Navajo culture, the sanctity of land is directly tied to utility. The two ideas cannot be separated. Sacred places were ones that served some crucial role in the practice of religion or provided some essential resource. Flood water farm fields are a perfect example of the type of sites that link people, land and culture, and the ecological restoration of these fields simultaneously helps to restore their utility – and therefore their sanctity. The success of our restoration efforts in the past year gives us a strong indication that our holistic approach to restoring hózhó is cost effective, produces immediate results on the land, and directly responds to the goals of the local community to build a more sustainable future by closing the cultural separation of people from the landscape through the development of a locally sustainable food system. While we do not intend to provide all of the food needs of the community

through this food system, we see the production of food in a locally adapted system that depends on landscape health as critical to the success of this effort.

Creating a comprehensive climate change adaptation strategy for rural Native communities on the Colorado Plateau that incorporates each of the six elements listed above is no small undertaking. We are fortunate that we have formed such a remarkable partnership with Hasbidito, and on projects 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.

LOOKING FORWARD: In the next three years, with significant support from The David and Lucile Packard Foundation and others, it is our goal to build on this success by working with our Navajo colleagues to develop a comprehensive climate change adaptation strategy for rural Native communities on the southern Colorado Plateau. The long-term ecological and cultural significance of this project is immense. Building capacity and resilience into both the ecological and cultural systems will mean that Native communities on the Colorado Plateau will remain viable in the face of climate change.



Our Navajo colleagues, Watson and Weston Castillo, work with restoration specialist, Craig Sponholtz to plant fruit trees, Torreon, New Mexico. (Photo by Avery C. Anderson)



Tammy Herra, Hasbidito Task Leader, delights in a worm that she discovered in her garden at Ojo Encino. (Photo by Avery C. Anderson)

Foundation, Government, Organizational and Public Support

Many thanks to those who contributed to the Quivira Coalition in 2010.

COMMUNITY - \$5,000+

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New Cycle Foundation Fund at the

Santa Fe Community Foundation

The David and Lucile Packard Foundation

Patagonia, World Trout Initiative

Rangeland Hands, Inc.

River Ecosystem Restoration Initiative

Robert Jesperson and Sylvia Y. Atencio Jesperson

Santa Fe County Community Funds Grant

Lydia B. Stokes Foundation

Thaw Charitable Trust

Trout Unlimited

USDA - Forest Service Region 3

USDA -NRCS (WHIP and CIG)

Paul H. Klingenstein

The Moore Charitable Foundation

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The Nature Conservancy Worldwide

Sierra y Llanos, LLC

Virginia Smith

The Sulica Fund

Courtney White, "A West That Works"

Julia Landres

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John and Joan Murphy Family Foundation

Pete Pulis

Pleiades Foundation

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Santa Fe Garden Club

Sangre de Cristo Mountain Works

San Juan Ranch/Blue Range Ranch

Susan and Thomas Simons

Stacey Sullivan

Tim A. Sullivan

Sunny Hill

Ellie Trotter

2010 ANNUAL REPORT 23

Quivira Coalition Supporters

We send special thanks and appreciation to the following for helping make 2010 a success.

47 Ranch, McNeal, Arizona

Mike Archuleta Gene Baca Julie Bain

Tony Benson, Wolf Springs Ranch

Boy Scout Troop 189,

Albuquerque, New Mexico

Cañon Bonito Ranch
Cañon Rio Creations, LLC
Carson National Forest
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The Christensen Fund

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Margo Cutler Craig Conley

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USDA NRCS Las Vegas Office Keystone Restoration Ecological KUNM Community Powered Radio

La Montanita Co-op

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Department- Surface Water

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Southwest Grassfed Livestock

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Taos Soil and Water
Conservation District

Tapetes de Lana

Dan Taylor, Bat Conservation Int'l Trout Unlimited - Truchas Chapter

Beezhan Tulu

US Fish & Wildlife Partner's Program

US Forest Service, Region Three

Wind River Ranch

Zeedyk Ecological Consulting, LLC

2010 Conference Speakers 2010 Conference Volunteers

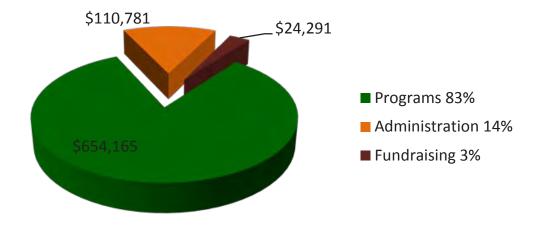
And all those volunteers who participated in outdoor workshops!

Many thanks to Cullen Hallmark for all his work on behalf of the Quivira Coalition.

2010 Cash Financial Report

All financial documentation is shown before 990 tax reporting and annual audit. Assets, Ordinary Income and Expenses ending December 31, 2010. Quivira Coalition completed the sale of the Valle Grande Ranch (VGR) in 2010 and agreed to carry a note payable for \$350,000. Proceeds from the ranch sale will be used to increase organizational capacity through long-term investment in professional development, addition of personnel, computer resources and establishment of a reserve fund.

EXPENSES		ASSETS	
Advertising and Promotion	\$3,036	Current Cash	\$329,663
Computer Hardware/Software	\$665	Fixed Assets	\$1,315,727
Event Food	\$46,841	Other Assets	*\$418,681
Organizational Insurance	\$6,001	Total Assets	\$2,064,071
Licenses and Fees	\$12,088		
Program Materials and Supplies	\$14,971	CURRENT LIABILITIES	
Payroll Expenses and Benefits	\$312,253	Total Liabilities	\$7,009
Postage and Delivery	\$6,525		
Professional Fees	\$144,176	INCOME	
Printing and Reproduction	\$18,764	Program Contractual	\$56,455
Venue and Equipment Rental	\$16,761	Program Grants	\$385,136
Resale Products	\$4,383	Public Contributions	\$105,809
Communications and Utilities	\$10,101	Registration Fees	\$65,599
Travel	\$4,1954	Product Sales	\$33,132
Maintenance and Repairs	\$3,230	Rent	\$25,472
Valle Grande Ranch Expenses	\$46,464	In-Kind	\$23,788
Donations and Grants Given	\$91,090	Net Cash Proceeds from Sale of VGR	\$126,687
Other	\$9,934	Other	\$3,421
Total Expenses	\$789,237	Total Income	\$825,499



2010 ANNUAL REPORT 25

2010 Board and Staff

Board of Directors*

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Patricia QuintanaRural Economic Development Planner

Nancy Ranney Rancher

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Catherine BacaEducation and Outreach Program Director

*Michael Bain*Land and Water Program Director

QUIVIRA COALITION

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Avery C. Anderson

Capacity Building and Mentorship Program Director

Tamara GadziaPublications Director

Ellen Herr

Office and Membership Coordinator

Deanna EinspahrBusiness Manager

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