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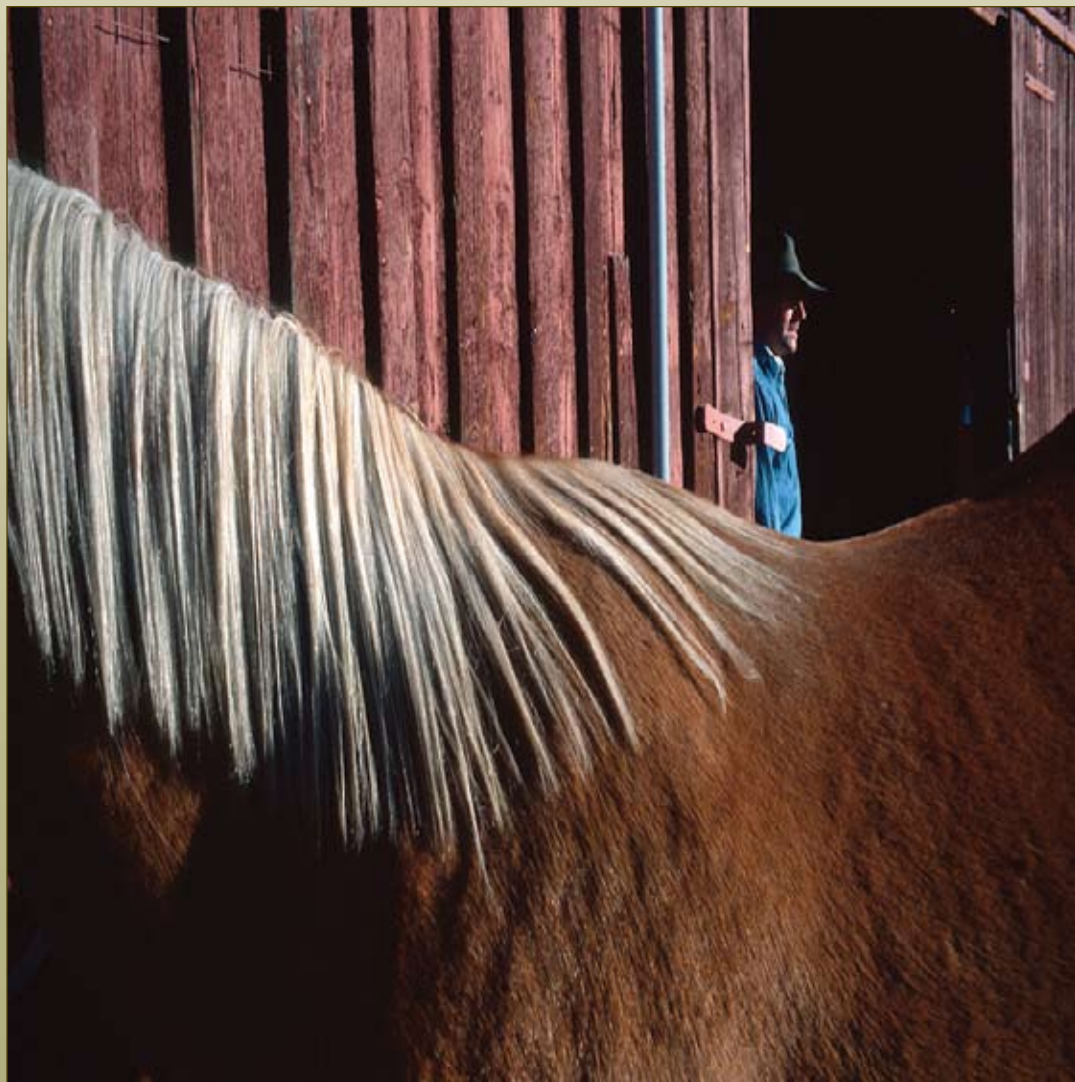
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---Courtney White

A New Land
Movement



From the Editor's Desk

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Welcome to our new Journal. For longtime readers of our previous publication, as you will quickly see, we've maintained our focus on thematic topics that delve deeply into issues of interest to ranchers, conservationists, public land managers, scientists and others. Our goal, as before, is to inspire and educate. After nine years, however, we decided it was time to use "fresh eyes" on the publication. I hope what you see and read meets your expectations.

To new readers, we hope you will find the material in these pages thought-provoking and inspirational as well. As the subtitle says, we are trying to foster a land health movement – a movement whose aim is to rebuild relationships between people, between people and land, and between ecological processes – starting at the level of soil, grass, and water. Key to this movement is the sharing of knowledge. It is our sincere hope that in this Journal you will find something of use for where you live and work.

And we welcome your feedback. If practical, in future issues we plan to include a Reader's Corner – so please send me your comments: executive@quiviracoalition.org.

The theme of this issue is 'A New Land Movement' which farmer and author Peter Forbes describes as being focused on the critically important job of saving relationships along with saving places. As each contributor suggests, we are entering a new era, one which heeds Wendell Berry's instruction that "You can't save the land without the people, to save either you have to save both."

I thank each of the authors for their help. I also want to thank Tamara Gadzia for doing the desktop publishing work. Her skill and diligence is hugely appreciated by all – myself especially!

And thanks to all of you for taking the time to read it!

Courtney

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A New Land Movement: Beyond Saving Places to Saving Relationships*

by Peter Forbes

I am both a farmer and a witness, which is to say that my relationship with the land runs deep and wide. My family and I rely, for a humble portion of our livelihood, on our ability to care well for animals and to grow good food. I am also a photographer and writer, for these are the ways that I express what I feel for the world.

And I am a father. Having two daughters requires me to speak the truth. My commitment to my children, and to your children, is the source of my work, which means I choose to act out of love.

And I'm also the very person you may feel divided from. I'm from the east coast, raised primarily in an urban context, and I spent 18 years working for a national conservation organization. I was once an urban person advocating for conserved lands in someone else's community, and now I'm farming in a state that is deeply impacted by urban values and ways of life.

I come from both worlds, and this is well represented in the messages I got from two friends when they learned I was going to be speaking here at The Quivira Coalition's annual gathering. One, a professor at the University of Oregon, begged me "not to let the romance of the story of ranchers take precedence over the profound losses created by their livestock grazing." She went on to say, "those of us who are in agony over the loss of native biodiversity somehow just don't make it into their stories."

Another friend, a former cattleman in the Klamath Basin, said to me over the phone, "Wish I could be there with you, but since I was forced to give up my days of working the land to join the environmentalists the only relationship I have is with my computer."

We are a house divided and full of contradictions. In *Black Elk Speaks*, John Neihardt writes, "I think I have told, but if I have not, you must have understood, that a man who has a vision is not able to use the power of that vision until he has performed the vision on earth for people to see."

I recognize the elements of an important vision

taking shape in the bone and muscle of what Quivira Coalition stands for, but you have the burden of making that vision real; not through words, but through performing it on the earth for people to see.

This is a vision about the health of the land, and it is a prophecy about the nature of our own purpose as humans. The vision says that the health of people and the health of land are inseparable. It says that people can do good, as much as they can do bad. It says that human care for the land can increase the diversity of life. The vision says that land is the foundation of our cultural house.

Please be alert as you make these powerful assertions because they challenge the broken underbelly of our lives and, yet, there are many good and thoughtful Americans whose experience of life says you are wrong. Because the stakes are so high there are many who deny, question, and attack. And this is exactly what they should be doing.

These are critical times, requiring our self-awareness, insight, and a steady hand. This is not a time to fight fire with fire; it's a time to fight fire with water. This is not a time to argue; it's a time to listen. This is not a time to speak of divides; it's a time to speak about bridges.

The environmental movement has not served the land well by assuming that conservation is more a legal act than a cultural act. *By that I mean, assuming we*

* Presented at the Quivira Coalition's 5th Annual Conference, "Bridging the Urban-Rural Divide", January 14th, 2006 Albuquerque, New Mexico. All photos courtesy of Peter Forbes.



can protect land from people through laws as opposed to with people through relationships. Laws exist for when relationships fail. And because so many of our relationships have failed, many have exchanged their faith in the notion of relationship for answers within the legal system.

This is both tragic and fatal.

Stories

My life experience of land, community and politics suggests that places and diversity of life endure best when cared for by humans in their daily lives, and that human ways of life are best preserved by simply living them. As a nation and as an environmental movement, we've spent too much time separating people and the land and precious little time being in dialogue about what is a healthy relationship between the two.

My life is an attempt to answer this question for me personally in Vermont and for my native region of New England. I have watched the diversity of life on our Vermont hill farm increase as we have built topsoil, grown food in the fields, heated ourselves from trees in the forest, and returned the health of our grasslands through our sheep grazing.

I've committed my life to helping people and communities strengthen themselves through a healthy relationship to land in my own native region where we receive 38 inches of rain across four seasons. I feel confident about how, with that healthy human relationship, the land can also benefit. But I can't say what's healthy here.

Like many Americans, urban and rural, I know very little about the health of land, water and people in the West. It defies my logic, and my sense of humanity, to destroy some land to protect others. As Wendell Berry puts it, it's like the famous three-legged pig that was too well loved to be eaten all at once. I see a connection between this joke and some cattle grazing in the arid West. To survive this impasse, all of us must have the courage to see freshly.

Together – environmentalists, ranchers, and

everyone in between – our objectives are quite simple: we want our country and our land to thrive. Our problem is also quite simple: we have not yet told a story that sticks. We have not yet told a story that speaks to everyone. We have not yet told a story that is about what we love, rather than what we fear. We have not yet performed that vision on earth for people to see.

If you have read Dan Dagget's books, there's not much I can add to your knowledge of relationship as a new paradigm for our healthy culture and for any movement toward healthy communities. What I would like to contribute is the knowledge that the divides may be different than you think, that you are not alone, that there are opportunities to connect across boundaries for greater health of the land and country.

Our country is a house divided today, but which of the divisions really threatens most the land and a land-based culture? One is the "urban-rural" but there are many other divides in this country: rich and poor, black and white, red state/blue state, and all of these are changing our land and our American culture.

Here are some of the symptoms of the divide: today there are more malls in America than high schools. Since 2004, we have more prisoners in this country than farmers. And today the top 1% of the US population now controls one-third of the nation's wealth.

All of these statistics point to us being a nation of consumers rather than producers. This problem is at the root of much of what concerns us. No land boundary will survive a suffering humanity. Nor will any land survive a humanity whose goal is to consume more than it can restore.

Vermont

I live in one of the most rural states in America – Vermont. Our largest city consists of 45,000 people and our capital has only 8,000, and yet a great divide is emerging in Vermont. Vermont is filling up with people living urban lives in a rural place.

The history of Vermont's relationship to the land is revealing



Urban gardens in Boston, MA.

and helpful. One hundred and forty years ago, Vermonters lived extremely close to the land and that relationship became overbearing. Ultimately, both the land and the people collapsed under a bad marriage. The last mountain lion was shot in 1881. Around that same time, black bear, fisher cat, turkey and deer were virtually extinct due to over-grazing and the deforestation of our hills.

The human population crashed in response, leaving tell-tale cellar holes in what is now forested land. Squirrel replaced venison in the dinner pot. The Norway rat, in 1900, became the most pervasive creature in Vermont.

Fast forward one hundred and twenty-five years and Vermont's human population has finally exceeded where it once was, and has created a more mutually beneficial relationship to the land. Biodiversity has also increased. Turkey, deer, bear are thriving. Nearly 80% of our landscape has returned to forest. The rivers are much cleaner than they were 50 years ago. There aren't as many farms, but those that are here are thriving.

The most important evidence of Vermont's success is that we have the highest percentage of people who earn some of their livelihood from the land. More Vermonters are in the woods, in the fields, on the land than in almost any other state in America.

Back in the 1970's, the people of Vermont, then one of the poorest states in the nation, asked themselves a critical question: what is a whole community and how do we get there? We defined a new, healthier relationship to the land and, frankly, we did that through a set of environmental laws that set limits on people. Vermont has prospered under those limits, but also because those laws encouraged our chosen ways of life, and defined our community-on-the-land.

And now Vermont is changing again. There are fewer and fewer of us who hunt in the fall, who sugar in the spring, who earn some portion of their livelihood from the land. The average Vermont six-year-old receives 30,000 advertisements before they enter first grade telling them what they should love and who they



Fence in Yampa Valley, CO.

should want to be.

My children are growing up at a time when rural Vermonters want to live like folks in New York. More and more Vermonters' experience the land by admiring her beauty through the window of their car as they drive to work, or on weekends when they run, hike, or ski.

There's nothing wrong with that relationship. It's good, but it's probably insufficient to engender the level of care and attention that the land needs in return. It hasn't become a mature relationship where both parties rely on one another, giving mutually to one another.

Vermont is quickly evolving from a land-based culture, one capable of producing what it needs to feed and shelter itself, into a consumer-based culture, one that is largely dependent on someone else's land and labor.

For example, although I live in a fertile agricultural valley dotted with farms, most folks eat food transported from thousands of miles away and purchased in a chain store with little connection to our community. Another way to describe this is that we're evolving from a whole community into a large collection of disconnected individuals. Writ large, we're evolving from a nation of citizens into a nation of consumers.

A colleague once said that rural communities are organized for production and urban communities are organized for consumption. But now we see our rural communities becoming consumers as they lose their relationship to the land. The urban/rural divide may not be so sharp after all.

What happens when people and communities lose that relationship with the land? Do the values stay? Do laws protect what's already left the heart? I think not. And that's the great misunderstanding of the conservation movement. Laws can not protect what's already left the heart.

The Land

All of our so-called environmental problems are people problems, which is to say that they concern the

yearnings of the human heart and soul. This is true about sprawl, about the loss of wilderness, about the decline in biodiversity. These very real problems are reflections of our own diminished selves: our isolation, our greed, our impatience, our lack of hope.

And one indication of this broken heart is that 42% of the private land in Vermont is now

posted no trespassing. I don't believe this is protecting that land; I believe it is encouraging the disconnection and further isolation that drives our people to become care-less, to slowly close their hearts to the land and to one another. Our Vermont landscape is being fragmented by good people wanting second homes to fulfill what is often a fantasy about living in a rural place.

Sound familiar? And what is it that threatens us? It's not urban thinking or city people. What threatens us is this competing story of what it means today to be an American.

And what is it that we're asked to give up in this new story of being an American?

In our pursuit of more of everything, we're asked to leave the land and much of what the land has to teach us about being human and living in community. Without the land to remind us of what is true, the story we follow is not the most honest or helpful one but simply the one that is told the loudest. It's the story where the only point of trees is board feet, the only point of farms is money, and the only point of people is to be consumers. In that story, we learn that the only person that matters is ourselves, and that the only time that matters is now.

We are told this smaller, isolated world is sufficient; yet we are rarely satisfied by it. So much of our lives seem to be about having more, but feeling less. We all recognize this personality of craving and desire, but few of us want it to be what carries our soul and spirit through the world. We want instead to be defined by our sense of compassion and justice and wholeness with the rest of life.

We want to be defined by our relationships; and



Subdivision on a former ranch in Colorado Springs, CO.

the most important, the most fundamental relationship is our connection to the land.

That fundamental choice between connection and disconnection is both epic and largely unspoken in our lives today. Every moment of every day the choice is made and the results play out. No one is left untouched, and the results are seen everywhere. This

is the struggle for the soul of our country.

How can we carry on this American experiment under these terms? What does success look like without some sense of relationship to the land and shared humanity? When one stops to look, it's not a pretty picture.

The Kingdom

Richard Louv's book The Last Child In The Woods is important for our era because he names the divide as our capacity for direct human experience, our willingness to struggle for a relationship with land and with one another. It's a divide most provocatively stated in the health of our children, but a divide felt none the less by many Americans. So many of us today, are children of a broken lineage.

Twice, now, I've returned as an adult to the childhood landscapes that most inspired me only to find them obliterated.

I remember a magical pond deep in the woods of Connecticut that I camped along, many times as a thirteen year-old. I can still find inside of me the sense of awe and excitement of coming upon this hidden spot and realizing that human hands had created it perhaps a hundred years before. There were giant oaks on either side of a stone dam wide enough, perhaps, to drive a mule and wagon across. There was a gentle rise of land overlooking this tiny quarter-acre pond and here my friends and I must have camped a dozen times in the summer of '74. The spot was so special to us that we did what young teenagers will do; we carved our names in the beech trees and called the place "The Kingdom".

I returned on a thanksgiving day twenty-five years later and wandered silently with my daughter for more than an hour through a sub-division, crossing cul-de-sacs back and forth, looking to find my pond. I was sure I was in the right place, but nothing around me was the same. The stream was gone, and the gentle ravine was gone.



Peter Forbes with mentor Bill Coperthwaite, Maine.

When I was about to give up and accept that this was no longer a place but now only a memory, I found myself oriented in just the right way so that everything clicked in place and even though the land had been transformed by bull-dozers beyond recognition, my body remembered. I re-connected with a place that had died.

Across a stretch of pavement and immediately adjacent to a two-car garage was an old beech tree with “the Kingdom” carved in it.

The woods behind Bull Run Farm did not contain any known threatened species of plant or animal, but they did have a profound impact on one little boy’s experience of growing up. I was that little boy. I can only remember how that land had helped me explore, learn, and use my imagination. What will it mean for the children who now live where I once grew up, who don’t have these natural places?

Many more Americans love the land than would call themselves environmentalists, and they feel this loss. To care about the land in this way is neither conservative nor radical; it is a form of consciousness. People who care conserve; people who don’t know, don’t care.

New Land Movement

Where does one take a stand? Those who believe in the market more than the relationship are not kind to small places. I take my stand with all those who still understand the power of relationship, and in fact there are urban people who crave that relationship and who are our allies, just as there are many rural people whom we have lost.

How do we then bridge this divide?

A new model of environmentalism is taking hold in the East and in the West that is intentionally and successfully bridging divides by showing that people, land and community matter most. This new land movement treats relationship as important as place, inspires action rather

than demands it, and is linked by values rather than divided by geographies and strategies.

This new land movement speaks to urban and rural people and asks them alike, what is a whole community and how do we get there?

It doesn’t matter if you call this work “finding that radical center” as they do in the West or “building whole communities” as we do in the East, we’re held together by three common approaches:

- 1) Commitment to see the problem with fresh eyes.
- 2) Commitment to think and act with the big picture in mind, in terms of how whole systems work.
- 3) Commitment to practical solutions that work on the ground.

Seeing the problem with fresh eyes requires rethinking who the opposition is. Just before coming here I received a message from an old friend, someone I trust, who wrote passionately, “What I really disagree with, Peter, is the characterization of those of us who want to see native systems functioning on lands where those native systems CANNOT function with cattle and sheep, as somehow unable to be graceful about the harmony of land with people. I’m a person, too.”

Indeed, she is. And we need her voice in this room. She is not against the relationship, she is merely asking us to see it from her perspective. To her, the question is not who loves this land more, but what is this land needing? She asks us, how do we restore our integrity by allowing the land’s integrity to be restored?

She is not the opposition, although it might not always feel that way. We share a love of the land; but when we argue with biologists and conservationists

we're squabbling about the terms of the relationship. There's a much tougher force out there that wants the relationship gone altogether, that doesn't care about land, period.

Our work is about putting these pieces back together again, and not just for us, but for everyone else, and for the land itself. That means working the contradictions and holding the tensions. Your truths are too important to be undermined by not being inclusive at this critical moment in time. Our strength comes not from the hardness of our positions, but from our ability to see across the divide to recognize allies.

Some of the most important work that can be done is to create the safe harbors where different people can have honest and sustained dialogue with one another, where people can ask reciprocal questions. Why do I need you and why do you need me? Why does the health of the land need us working together?

This is the work of Center for Whole Communities. Each summer, we gather hundreds of diverse leaders in the new land movement – ranchers, urban gardeners, food security advocates, wilderness advocates, politicians – to find shared values, better ways to collaborate and new tools for measuring our success.

The second defining characteristic of this new land movement is its commitment to re-think problems in the context of the larger systems in which they exist, and to see the sum of the parts. We call this “whole thinking”, and it's a radical departure from how the environmental movement has self-organized with specialists working on narrowly defined problems and with few who are able to see root causes or the big picture.

The Quivira Coalition's focus on land health is a great example of whole thinking. It makes a profoundly straightforward proposition: from the health of the soil come the health of our people and the health of our communities. Going from the small to the big helps people to see the connections and relationships be-

tween things; and by grasping those connections, we find the possibility of new ways of describing the values we place on land.

When viewed in its parts – the biota and hydraulic functions – the importance of soil can be lost to even well-intentioned people. But viewed through whole thinking, we begin to see soil for what it is: the foundation of our cultural house.

Relationships

When one absorbs this powerful map of interconnected relationships, one can not miss the truth that the connections between things are as important as the things being connected. And from this awareness comes the hallmark of the new land movement that conservation is about restoring healthy relationships – human and nonhuman – to create a land community that is a healthy whole.

We might be able to fence people out, but we cannot fence out the effects of people. It follows then that we can't save land through our separation from it, but only through our in-

tegration and our sense of belonging to it.

With relationships in mind, our vocabulary changes for the best. We drop sustainable and start using healthy. Would you want your marriage described as sustainable? We shy away from saving, “preserving”, because we're not trying to pickle anything or anyone. Instead, we use words like nurturing and cultivating. And all the words associated with restoration: renew, heal, revive, the one I like the most is repair. We re-pair the land by bringing ourselves whole again with it.

Re-thinking conservation as the promise of more enduring relationships is seeing the world with new eyes. And this new worldview can create changes in our culture as important as any in the history of our species. Because, within all the sets of relationships that we call the land are the essential clues for living a responsible and joyful life today.

If we believe in these relationships, then we can



Five Star Garden, Harlem, NY - Before

see more clearly how the act of conserving land is also an act of conserving human values. Land is soil, of course, but land is also soul.

Relationship to land, therefore, is deeply connected to our sense of patriotism, citizenship, egalitarianism and fairness, and our sense of limits. This new land movement sees the conservation of land as a cultural act to sustain our democratic traditions, to conserve the role of the citizen, to nurture respect and forbearance, independence, and the source of our sustenance.

We can't do this by buying food at a national grocery store chain any more than we can do this by destroying the integrity of our soil.

This new land movement is also defined by its commitment to find practical solutions on-the-ground and to share the stories of people going forward to the land in a different way. And we've found that the most effective lever is food: proving our human relationship to the land three times per day.

Almost unbelievably, there are more than 2,000 community-supported farms in this country today when there were almost none just 15 years ago. There's one CSA operating in New York City that connects 120 farmers with 40,000 urban food subscribers. The number of Farmers' Markets has grown tenfold in the last decade.

Or what about the more than 1,200 public and private schools that have started their own school gardens?

And what about the last presidential campaign that divided our country into red states and blue states? That same election, 161 different communities across this country, conservative and liberal, passed bond campaigns to protect local landscapes. This is average people, with very different politics, going forward to the land to re-connect.

This desire to re-connect is seen in the growth of local land trusts: more than 1,600 land trusts created over the last twenty years. Now we have to help these

good folks to understand that relationship is as important as place, that they can best "protect" this land by helping people to love and understand it. There are now 100 Land Trusts in America who have working farms on the land they steward.

None of this was probable or even possible ten years ago.

The very best aspects of the American spirit – our sense of community, generosity, dependability – came from the traditions of how we lived on the land. The opposite is also true: our intolerance, our capacity for greed and inhumanity has been played out on the land. All of these possibilities are in us, and get written on the land to form our memory and our morality.

The soul of our country is borne from those epic choices around our relationship to land and to one another. And that relationship can be good, bad or plain ugly. It's good when the relationship is about respect, joy and limitations. It's bad when it shows us stealing from our children for ourselves, and it's ugly when it alienates anyone from their rights as humans.

To struggle for a healthy relationship with the land through how we

live, what we eat, and who we welcome at the table, is transformational because it ultimately is about love and healing. It's about relationship. And most people get this, without having to know all the science, because we humans -at our core- are more tuned to relationship than to isolation.

Harlem

Let me end with a story about this possibility. I want you to meet my friend, Classie Parker. She's a third-generation resident of Central Harlem in New York where she lives in the same building off Frederick Douglas Boulevard where her mother was born. Ten years ago she was flipping hamburgers at White Castle, barely able to keep her family together. She felt stuck on a street where nobody knew one another and



Five Star Garden, Harlem, NY - After

where the drug dealers ran everything. Classie especially feared for the future of her father who was growing old and needed some way to spend more time being active and outside.

She didn't aspire to be an activist and didn't have a grand vision about running a community program. But Classie got the radical idea to turn the vacant lot alongside her apartment building into a garden. That was almost ten years ago and today Classie produces food,

beauty, tolerance, and a relationship to land for more than 500 families in Central Harlem. Five Star Garden is almost absurdly small, just a quarter acre, but for the people of 121st Street, the garden is their own piece of land to which they have developed a very deep personal attachment. These are Classie's words:

"We think of ourselves as farmers, city farmers. Never environmentalists. Don't call me an environmentalist. We love people and plants; we love being with the earth, working with the earth. There is something here in this garden for everyone. And any race, creed, or color . . . now, can you explain that? This is one of the few places in Harlem where they can be free to be themselves. It's hard to put into words what moves people to come in this garden and tell us their life stories, but it happens every day. There's love here. People gonna go where they feel the flow of love.

"There is a difference. You come in here and sit down, Peter— don't you feel comfortable with us? Don't you feel you're free to be you? That we're not going to judge you because you're a different color or because you're a male? Do you feel happy here? Do you feel intimidated? Don't you feel like my dad's your dad?"

Classie boiled it all down: "Don't you feel like my dad's your dad?" I remember laughing a bit nervously as Classie said this because I wasn't prepared for her candor and hopefulness. I paused just a moment, and then looked up at her father, sitting ten feet across from me with his feet firmly planted on the earth, both hands resting on canes, eighty-seven years old, garden dirt on his face. "Don't you feel like my dad's your dad?"



Classie Parker and her mother.

Passing one another on the street, our eyes might not have met long enough to see one another's humanity. But there on that patch of earth, what we had in common at that moment was profound: it was the soil, that place, the love and hope that Classie held for us, and the awareness that my own pulse beat in his throat.

This is the soul of the land. It is also the soul of our country; the empathetic soul that I believe is there waiting to be spoken to. This is the generosity, respect and inclusiveness that come naturally to many Americans. You know these stories, too, because they are your stories.

Our relationship to land is still the enduring story of our lives whether we accept this truth or not. Few forces will have as much effect on the course of our lives as that relationship; the relationship between soul and soil.

Some walls grow higher each year, it's true. But others crumble down. The example of our healthy lives in relationship to land is what our world desperately needs to resolve, rejoin, render whole and, finally, to reconcile

Even though most relationships with the land are tenuous right now, the far majority of Americans know that their true wealth or security isn't in their bank accounts, but comes from the stories about the people and places in their lives; our true health and security comes from our relationships.

This is the way we will translate the soul of this land back into the soul of our country. 2

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In Praise, and in Appraisal of, the Working Landscapes of the West

by Gary Paul Nabhan with Ken Meter

The simplest fact about Western ranches is the one which most folks tend to forget: raising range-fed livestock is one of the few economic activities that produces food – and potentially ecosystem health and financial wealth – by keeping landscapes relatively wild, diverse and resilient.

Only a small percentage of the foods eaten by humankind come from wildlands. Yes, livestock are given supplemental feed during drought, pregnancy, or just before slaughter, but the bulk of the calories they convert into meat come from wild, solar-powered native grasses, forbs and shrubs.

It was once possible to claim that fish and shellfish also came to us primarily from wild aquatic ecosystems, but that day has nearly passed. The bulk of the shrimp, salmon, catfish and trout we eat now come from farms of another sort. In short, eating grass-fed and -finished beef, mutton and cabrito raised by local ranchers may be some of the surest means for keeping large wild landscapes intact and our rural cultures in place.

When we ponder the term working landscapes, we do not merely imagine lands where cowboys still find work driving and branding stock, mending fences, or breaking horses. Let us more fully imagine a land in which all the human residents are part of the cascade of solar energy through gramagrass and winterfat, through saltbush, buckbrush or greasewood, up through the mouths and guts of bull, ram, buck, cow or ewe, and on into human mouths, bellies, muscles and bones. In other words, rather than being nourished by something distant from us and from where we live, in working landscapes, if we commit ourselves to eating their bounty, we derive a good portion of our nourishment from the very ground on which we stand. We do not stand apart from the energy and water flows of our home ground. Instead,

“In short, eating grass-fed and -finished beef, mutton and cabrito may be some of the surest means for keeping large wild landscapes intact and their rural cultures in place.”

they work through us, and we work because of them. The land is not mere scenery suitable only for tourism and leisure. It is a functioning community in which we either live well or poorly, depending on how efficiently and conservatively we participate in the land’s work. As Thoreau once said it so succinctly, perhaps we are here to “meet the expectations of the land” and not the other way around.



Of course, it goes without saying that this vision of America’s value as a working, food-producing landscape is one that is increasingly at odds with the vision (if there is one) of the dominant urban majority. For the first time in history, our continent’s

human population gains more of its sustenance from food produced in foreign lands than it does from its own. In 1970, 4.1 percent of the vegetables eaten by Americans came from imported sources, but by the end of 2005, 14 percent of our vegetables came from other countries. In 1970, 21 percent of the fruits eaten by Americans were grown in distant lands, but as 2005 came to an end, 40 percent of our fruits were imported. The most fertile, productive continent on the face of the earth no longer produces most of the grain, beverages, fish or game consumed by its citizenry.

It does, however, continue to produce most of its own beef, between western rangelands, urban and ru-

ral feedlots, and Midwestern pastures. And yet, it can be easily argued that the West does not fully gain the nutritional and economic value of the meat produced from its own wildlands. A new case study from northern Arizona farms and ranches can painfully bring this point home.

One of us — Ken Meter of the Crossroads Resource Center — has been looking at just how much food — especially meat — is produced in the northern Arizona counties of Coconino, Navajo and Yavapai relative to what is eaten there.

In Coconino County, which includes Flagstaff, Navajo and Hopi lands, 93 per cent of its \$11.1 million agricultural sales in 2002 were livestock and its by-products, but in that year only 0.5 per cent of food products were sold by ranchers and farmers directly to local consumers. Compared to the \$10.3 million of livestock sales produced in Coconino County, the county's consumers purchase \$37 million of meat, poultry, fish and eggs, so that local consumers could absorb virtually all the meat produced in the county if it were more directly available to them.

But as Ken has learned from comparing the county's production data compiled by the Bureau of Economic Analysis with food consumption data produced by the Bureau of Labor Statistics, the commodities produced on Coconino County lands are now more valuable to outsiders than to local residents. The way the food economy is presently structured, Coconino County ranchers and farmers currently lose \$10 million each year by selling the bulk of the food they produce into the national (or globalized) commodity marketplace. Further they spend another \$6 million per year (as in 2002) buying outside inputs to raise some 33,000 cattle, and to harvest some 1,033 acres of crops, as well as other products. As county ranchers and farmers struggle with losses, county consumers spend \$21 million per year buying food from the outside, while they buy only \$53,000 of food products directly from their farming neighbors. As Ken has summarized, this is a total loss to the region of \$231 mil-

lion of potential wealth each year. This loss amounts to 14 times the value of all food commodities raised in the county.

These results are typical of the three counties that make up Northern Arizona. Let us look at the combined picture for Navajo, Coconino and Yavapai counties. Together, only \$343,000 of the food products in these three counties is sold directly to the region's consumers, while \$635 million of food is annually bought from outside sources. Roughly \$700 million of potential wealth that could be captured by the ranchers and farmers of Coconino, Yavapai and Navajo counties now drains away to other regions, impoverishing our own. One goal for these counties should be to replace imported inputs and food products with homegrown equivalents.



Myrin Ranch Cattle, December, 2005.
(Photo by Deborah Myrin)

The good news, as we make this shift, is that by creating a vibrant local economy we create new livelihoods for local residents, who will build new social bonds and new wealth from the land by raising, processing, and trading food. This revitalization of our local economy is very promising indeed. Yet there are additional ways for us to create local wealth, as well — by consciously placing value on the ecosystem services the land also creates for us,

in its daily cycles of life. These ecological services also minimize the risks of environmental hazards, catastrophes and contamination.

Perhaps the most important service provided naturally by working landscapes in Coconino, Navajo and Yavapai counties, is to regenerate clean water in the Colorado River/Gulf of California watershed. These three counties high in the headwaters of Colorado River tributaries hold over 10 million acres of soil and natural vegetation. Rain and snow fall upon, filter through, and move across this entire watershed. Although rainfall may vary from four inches to forty inches annually, depending on elevation and other factors, let us assume for a moment that the average acre receives ten inches of precipitation, six of which is either immediately "shed" or infiltrates through shallow channels, later to be discharged into the region's streams. We

can calculate from this assumed average rainfall that each of those ten million acres of working landscape provides one-half acre-foot per year of water that generates services such as natural waste treatment through slow infiltration, reducing soil disturbance due to perennial vegetative cover, and riparian habitat use by wildlife and by recreationists, etc. These five-million acre-feet annually provide such “nature’s services” between the ranches where they are shed and the Colorado River delta, where they have historically spilled into the sea.

“We need a new benchmark by which to make decisions regarding land use and conversion costs in the West. Is the long-term value of the food and ecological services provided by large intact working landscapes ultimately of greater societal value than the income generated by a strip mall in which the bulk of the revenues flow back to some corporate headquarters distant from our local economy?”

Recently, Karl Flessa of the University of Arizona has estimated that each of these acre-feet, whenever it now flows across the Colorado River delta into the Gulf of California, has already generated \$200 of natural services. This is a total value of \$1 billion.

Flessa further notes that this value used to be greater. Prior to the damming and diversion of the Colorado, the ecosystem services of the water reaching the delta totaled \$2.7 billion per year. However, this water flow has diminished by an order of magnitude since dams were placed on the Colorado, disrupting ecosystem services for the entire delta.


Compare the \$200 per acre-foot of natural services with current U.S. agricultural water prices for Colorado River water. Farmers and some industries pay only \$16 to \$32 per acre-foot for water, while municipal users pay \$300 to \$880 per acre-foot. Whatever dollar value you choose to place on the water generated and cleansed by these ranchland ecosystems, it is clear that the cumulative societal value of large, intact working landscapes is underappreciated at this point in time. As a result of recent studies by ecological economists, we have begun to place greater value on these ecosystem services, but there is much more to be done in this domain, both in technical calculations, and in terms of educating our society about these values.

If our society did indeed fully value the food and ecosystem services provided by these working landscapes, would we be so prone to let them “fall out of work”, to let pavement and asphalt roofing absorb the sunshine which cascades down upon them, instead

of letting plants capture that solar energy? Would we have so easily let 10 percent of Yavapai County’s farms and ranches become converted to residential and commercial retail development between 1997 and 2002? Was any land use planner calculating the

value of the food as well as the ecosystem services lost for good when some 77,212 acres of the county’s working landscapes were put “out of work” in just five years time?

We need a new benchmark by which to make decisions regarding land use and conversion costs in the West. Is the

long-term value of the food and ecological services provided by large intact working landscapes ultimately of greater societal value than the income generated by a strip mall? For each mall, the bulk of profits flow back to distant corporate headquarters, while local authorities absorb water, sewer, fire and police costs. Are we willing to admit that we take for granted the many amenities which are imbedded within each working landscape that surrounds our cities? Don’t planners still treat ranches more like “open, developable space” rather than “already-productive places”? Until we change such perceptions, we will inevitably continue to lose much of what currently “works” in the landscapes of the West. 

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A West that Works

A Corner Turned: the Chico Basin Ranch

by Courtney White

In 1999, a corner was turned quietly in the ‘grazing wars’ when the state of Colorado awarded a 25-year lease on its 87,000-acre Chico Basin Ranch, located southeast of Colorado Springs, to ranchers Duke and Janet Phillips through a competitive process.

This wasn’t because they had beat out The Nature Conservancy for the lease. This was no political victory of industry over the environment, as many in the conservation community at the time feared it would be. (One anti-grazing activist complained that the Colorado State Land Board could have made “more revenue for public schools and better protect the ecological value of the land if it had opened up these ‘grazing lands’ to competitive bidding for non-ranching, non-extractive conservation purposes.”)

That’s because the Phillips had every intention of hitting high environmental standards on the ranch – a goal that has been admirably achieved despite a persistent drought.

But it wasn’t a victory for the New West of wealth, recreation, and latté, either. That’s because the Chico is no ‘hobby’ ranch. Duke and Janet Phillips are full-time ranchers and run the ranch as a full-fledged cattle operation, deriving the bulk of their income from beef sales and custom grazing.

In fact, their ability to turn a profit in dry times while delivering high environmental values, as well as diverse educational opportunities, is the reason their work represents something new under the sun in the West.

I’ll even go one step further – I believe it is a sign of the end of the ‘grazing war’ itself. The decision by the State of Colorado to award a lease to the innovative Phillips instead of (1) a traditional ranching operation, or (2) a conventional conservation ‘reserve,’ even with grazing included, means the “debate” is largely concluded.

Not the shouting, of course – that will go on for years.

The Chico Basin Ranch is demonstrating that the



Duke Phillips leading a tour of Chico Basin grasslands.

‘zero-sum’ arguments of both extremes in the grazing “debate” – that conservation can only advance as far as ranching retreats, as some in the environmental community assert, or that private property rights are paramount to state or federal ownership, as some in the ranching community argue – are rhetorical positions.

On the Chico, you can have your grass and eat it too.

But that isn’t all. Duke and Janet Phillips also set out to demonstrate that you can make a profit in cattle ranching, contrary to some popular opinion (especially by novice ranch owners). Their path to profitability was a simple one: deliver goods and services that society values, such as healthy food, recreational opportunities, open space protection, education, and healthy wildlife populations.

All they ask in return is compensation for their hard work – which allows them to maintain a livelihood they love with the freedom to make their own management decisions, and raise their four children in a rural setting.

Shouting, in other words, is seldom heard on this particular stretch of range.

A Model Ranch

The Phillipses had big plans for the Chico Basin Ranch right from the start: to be a model for the future of ranching in the Southwest. To that end, Duke and the staff employ nearly every progressive 'New Ranch' practice at work today, including:

- ∩ Planned, or short-duration, grazing by livestock;
- ∩ Low-stress cattle handling;
- ∩ Prescribed grazing (utilizing cattle to create specific environmental impacts);
- ∩ Goat grazing to control noxious weed infestations;
- ∩ Custom grazing a neighbor's cattle for a fee;
- ∩ Little or no predator control (including prairie dogs);
- ∩ Producing grass-fed beef for health-conscious urban markets;
- ∩ An internship program for young ranch managers;
- ∩ Guest ranch services for customers interested in birding, hunting, and fishing;
- ∩ Educational activities for local schools and other groups; and
- ∩ Media and other outreach work

This does not even include the varied conservation goals of the ranch, which, because it represents one of the largest contiguous blocks of shortgrass and sand sage prairie in Colorado, is the site of significant biological diversity. For example, over one hundred and fifty species of migratory birds have been identified in the ranch's grasslands, riparian areas, and wetlands.

This diversity is one of the reasons why the Rocky Mountain Bird Observatory, a nonprofit organization dedicated to conservation,



Old school house.

education, and research, signed up enthusiastically as an original partner with Duke and Janet Phillips, sharing their goal of "working together to live with the land." This partnership has produced an important link between city and county residents.

"We believe that a key to protecting the health of the land and food supply," said Duke Phillips, "is building bridges between people in urban and rural

areas so we can understand that we both desire the same thing: a diverse and healthy landscape that provides clean air and water, healthy food, and healthy and abundant wildlife."

As an example of their commitment to this philosophy, over the past seven years, the ranch has entered into partnerships with The Nature Conservancy, the Colorado Natural Heritage Program, the Colorado Division of Wildlife, the Native Plant Society, and many others.

But this is not 'feel good' stuff – on the contrary, Duke Phillips sees this bridge building as vital to the future of his profession.

"The rancher must understand that today he is not managing his land just for his family and business," he said. "As the world becomes a smaller place, he has to learn to deal with people from outside his ranch boundary fences, who are concerned about the effects of his management on the land."

The same could be said of the urban-based bird watchers who attend the workshops that Rocky Mountain Bird Observatory conducts on the ranch each year. As subdivision development makes open space increasingly scarce on the Front Range of Colorado (calculated at a rate of at least an acre an hour being lost), alliances with progressive landowners and managers becomes increasingly critical.

Partnerships are the easy part,



Hay rides for bird watchers.

however, when compared to the much more difficult task of making these relationships work economically. And it is here that the Chico Basin Ranch has turned another important corner.

New Economics

Twenty-five years after the rise of sustainable models of ranch management, fifteen years after the start of the collaborative movement, and a few years after the end of the grazing 'debate,' the principal challenge in front of many of us who care about the West is this: how to make conservation profitable (and thus sustainable).

Until recently, conservation as an activity was either subsidized by environmental organizations, government agencies, and wealthy landowners, or created as a byproduct of regulation or other administrative action. Rarely was it undertaken as a deliberate element of a ranch or farm management plan, mostly because traditional markets value short-term exploitation of natural resources over long-term sustainability.

But much of this has changed in recent years with the rise of models of sustainable use in a variety of ecosystems. The main question remains: how to get society, i.e., urban dwellers, to compensate rural land owners and managers financially for things that they value.

In other words, if urban wants it and rural has it (food, water, wildlife, open space, recreation, etc.) then urban should find a way to pay for it reasonably.

The alternative is to continue to subsidize conservation, often at very high costs.

For example: if the public values open space, wouldn't it be far cheaper to help a private lands rancher or farmer stay in business, often by assisting him or her to reform their land management practices, than to purchase the ranch when it comes up for sale at subdivision real estate rates?

Paychecks, it seems to me, are the most efficient, and long-lasting, form of conservation. Plus they have the critical benefit of providing for on-the-ground stewardship, which is increasingly important in this era of



Swimming in a Chico Basin pond.

multiple ecological challenges.

This question of paychecks is exactly what Duke and Janet Phillips had on their minds when they bid for the Chico. And they are making good progress on an answer.

Today, for example, 20% of the ranch's income comes from non-beef related enterprises, such as the guest ser-

vices, educational workshops, and other recreational activities. To push this total higher, they plan to form a 501(c)3 nonprofit organization to conduct additional research and educational outreach on the property.

More significantly, was the decision in 2005 by the Colorado State Land Board to substantially reduce the lease fee as a reward for the effective ecological management and social outreach conducted on the ranch. The ranch newsletter, the partnerships, the outreach work, and the good will that Duke and Co. have developed all mean something tangible and important to the State.

This decision translated into something tangible economically to Duke and Janet Phillips, who recently added on to their modest home and are now confronted with the costs of putting their kids through college.

There is no silver bullet, however. There is no simple formula for profitability, or for managing land. Every landscape is different, every ranch family is distinct, and every challenge unique.

But as the Chico Basin Ranch demonstrates, the broad strokes are clear, especially if we share the common vision of linking social and environmental health for the long-run benefit of urban and rural resident alike. 2

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A View from the Field

An Ecotone, Not a Divide

by Julie Sullivan

My mom sits in the hospital with a clot of pooled blood in her lung. Habits of a lifetime resisted change, and here she is in crisis. She isn't unique: we all have habits that resist change, since change requires facing fear.

The urban-rural divide isn't empty; it is filled with fear: of the unknown, of the opposite, of change. For all our supposed delight in adventure, we humans often cling to what we know and the paradigm that affirms who we already are, what we already believe to be true—the paradigm that knows us. The murky mess of opposition holds no appeal. Worse, it challenges us at our core.

The great exception to our aversion for the unknown is human love. It is said that opposites attract, and so it is with George and me; he's a cattle rancher and I was a cattle-free-in-'93 environmental educator vegetarian from the city. Substantial differences in seeming opposition.

To consider something new, be it our regular coffee shop or a cultural understanding, requires humility: the ability to consider that our earlier idea was wrong—or at least not right enough. Or that it limits our options. Many of us would rather lose the ranch, the spouse, or even the planet, than publicly acknowledge our ignorance or force ourselves to change. So what can compel us to reach beyond our known world?

Love. Love for the land led me to fall in love with a rancher. And with the immediacy of a life lived directly with and from the land. Deep as it was, my relationship with land became deeper as I learned what it takes to raise food. To span the gap between my earlier life and my current one, I've listened to the locals, the ranchers and farmers with lives and views often radically opposite to my own. Slowly I've begun to share my own views, though most locals aren't interested. And my environmentalist friends think I've gone over to the dark side. No matter who I have coffee with, I'm the heretic. This bridge business is damn lonely and doesn't get easier over time.



George Whitten and Julie Sullivan on their San Juan Ranch near Saguache, Colorado.

Maybe the problem is the metaphor of a bridge—a span arcing over the divide of difference, squabble and confusion. A bridge allows transit back and forth, but doesn't encourage dallying in the middle. Cross over, get business done, go home; we remain ignorant of one another. We won't 'bridge the gap' by lofting ourselves above the messy fray of differences. To build a relationship instead of a bridge, we need to settle in for a spell with each other and our disagreements.

We need a destination rather than a bridge: bus station, tidal flat—some place where things meet and mingle. Someplace not so lonely.


I propose ecotone: the meeting of two or more ecological systems or habitats. Possibilities increase in the overlap between systems: more diversity of species trying new relationships with one another. In the ecotone, we're all there looking for something we want or need, and our choices aren't limited to your idea or mine. We've an array of options beyond the scope of our habitual, and often polarized, beliefs.

George and I were growing towards one another long before we met. We followed our love of land into

the terra incognita of alternative views, enemy views. Imperceptibly, our personal habitats enlarged until they overlapped. We didn't lose a thing by reaching beyond our known values and beliefs; we added to them. I'm still a liberal Deep Ecologist who believes the cows, grass, trees, and sun are not here solely for my benefit, but for their own purpose. I'm also a rancher who knows the hard work and heartache of a life many consider contrary to my ecological values.

Love not only got me to walk in someone else's shoes, but to get a pair for myself. Ignorance fuels the urban-rural divide and causes us to inadvertently hurt people and the other-than-human aspects of our world. I hurt people when I advocated for the forest, and in the same way those who work with the land often harm the other-than-human in their well-meaning efforts to feed people, clothe their kids, and make the house payment. None of this is intentional; none of this is what we want. My mom didn't want to end up where she is either, but she did. Due to habit embedded, due to beliefs unexamined, due to the basic human hesitation to change when change is hard.

My mom works hard every hour, breathing into the plastic machine that measures her lung function. She's trying to change. If she can do that, surely I can creep further into the ecotone created by rural and ur-

ban, wilderness and working landscape, you and me. Rancher, environmentalist, recreationalist, urban or rural, however we label ourselves we are losing what we love. Rather than stick with the positions we know while bemoaning the crises we face, let our love of the land propel us beyond the boundaries of habitual identity and ignorance into the ecotone where you and I overlap, and explore the possibilities generated by the fertile meeting of opposites. 

Julie Sullivan teaches environmental education for the Audubon Expedition Institute at Lesley University and ranches with her husband George Whitten in the San Luis Valley of Colorado. She's glad to be meeting other heretics in the ecotone provided by The Quivira Coalition.

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PrePostindustrialism: or Getting from Here to There

by Courtney White

“Polyface Farm is a postindustrial enterprise. You’ll see.” – farmer Joel Salatin, quoted in Michael Pollan’s The Omnivore’s Dilemma.

I want to say this right up front: I believe our nation is headed for what the Chinese euphemistically call ‘interesting times.’ In fact, I believe they’ve already begun.

I’m not talking about global warming. I’m talking about a gathering oil crisis. Oil is a finite resource and as such is a one-time gift of incalculable wealth to the human race. Our response, apparently, has been to spend this unique inheritance as quickly as possible. When world oil production passes its ‘peak’ and begins to decline, which is about to happen according to the experts, the destabilizing effects of the crisis will accelerate. That’s because, as one oil expert has put it, there is no Plan B.

Technology will not save us. That’s because fundamental issues of entropy, physical limits, and human nature are at work. The laws of physics don’t bend. Hybrid cars, more efficient home appliances, nanotechnology, even the Internet cannot beget more oil. At best, technology and alternate fuels can help ease the pain of what is being called the “powerdown” of society. But they are inadequate replacements for the bounty we call ‘black gold.’

Also, every course of action, whether it is the expansion of an alternate energy source (wind, solar, hydrogen, nuclear) or the implementation of a change in policy (conservation, a carbon tax, increased automotive fuel efficiency) carries an economic, environmental, or political cost that makes it unpalatable to many Americans and nearly every national leader.

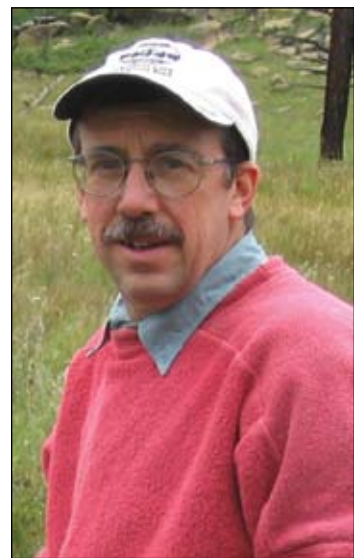
Complicating physics is human nature. We’ve become so addicted to the easy life brought to us by cheap oil that we’ll resist mightily any disruption to our com-

fort. And not just comfort – our co-dependence on cars and trucks for work requires cheap fuel. For both reasons, resistance will saturate nearly everything we do in the upcoming decades. As the Vice President of the United States put it recently “The American way of life is non-negotiable.” According to the experts, this is why a global struggle among nations over access to oil has already begun and is likely to escalate.

The Industrial Age is synonymous with oil. Nearly all of the miracles of modern life, including the food we eat, the medicines we take, the vehicles we drive, the skyscrapers we work in, the suburbs we go home to, the movies we watch, the clothes we wear, even the water we drink, have their origin in cheap fossil fuel.

For all its miracles, however, industrialism produced plenty of sin too. Take the human carnage of World War I, for instance. It was the first industrial war in history – a tragic confluence of 19th century military strategy and 20th century industrial technology, featuring tanks, airplanes, massive guns, and chemical poisons. The result was the efficient slaughter of over thirty-five million people.

It is not a coincidence that nearly every alarm bell we hear today is tolling for some aspect of industrialism, whether it is obesity, globalization, endangered species, toxic dumps, or another modern predicament. If cheap oil gave us penicillin and the family vacation, it



also is responsible for DDT and melting glaciers.

My point is this: the end of cheap oil means the end of Industrialism – the good along with the bad – and we will enter a new era.

This should not be news. As any student of history or archaeology can tell you, all societies, whether they ultimately endure or collapse, move through definable periods, eras, and Ages – each with a discernable beginning and end. Populations rise and fall along with empires and democracies. Cycles of stagnation, decline, renaissance, and progress create tangible boundaries to the histories of every society.

What will the Postindustrial period be like? No one knows – that’s because nobody can accurately predict what’s coming next. Possible scenarios range from the inconvenient to the apocalyptic – from nothing more than rising energy prices forcing unhappy changes in our lifestyles, to whole societies breaking down. Either way, it is clear life as we know it will be different in the Postindustrial era.

Just how different it will be depends on what we do today. That’s why I’ve begun to call the current era ‘PrePostindustrial’ – in other words, we live in the ‘run-up’ to what’s coming next. The main premise of PrePostindustrialism is not how to avoid the upcoming contraction of society – because its arrival looks to be inevitable – but how to prepare for it properly.

As futurist Lester Brown wrote recently, “We are entering a new world. Of that there can be little doubt. The real question, for anyone truly concerned about our future, is not whether change is going to come, but whether the shift will be peaceful and orderly or chaotic and violent because we waited too long to begin planning for it.”

Going Local

A place to start is with conventional ideas of sustainability. To prepare properly we need to ask ourselves: what are we actually trying to ‘sustain?’ If it’s a standard of living built on a foundation of cheap oil, then we’re in for a rude awakening. I suspect that significant portions of modern life are not sustainable – at least not at the levels to which we are comfortably

accustomed.

I worry that the public has conflated ‘sustainability’ with the desire to stretch out the Industrial Age as far as possible. Buying a biodiesel vehicle, eating organic lamb flown in from New Zealand, or even installing solar panels on your roof are not acts of sustainability if they don’t help us get from ‘here to there’ – with ‘there’ being what’s coming next. If we do these things to merely ‘sustain’ an entropic status quo, then I think we’re not preparing ourselves for the turmoil ahead.

As an engineering friend of mine likes to note, in the physical sciences sustainability is a principle, not a value. “Either way,” he told me, “practices that are unsustainable will stop regardless of how we feel about them.”

What is truly sustainable then?

For clues – and inspiration – we can look to those individuals and enterprises choosing to “opt out” of Industrialism, to borrow a phrase from farmer Joel Salatin (some, such as the Amish, never “opted in” of course). Why they chose to “opt out” is not as important as how

they did it, and what lessons they can teach the rest of us.

Take Polyface Farm, for instance. Together with his father, Joel Salatin took 550 acres of industrially-degraded land in the western hills of Virginia’s Shenandoah Valley and revitalized it with an innovative mix of cows, pigs, chickens, turkeys, rabbits and humans all working in concert and in harmony within nature’s model.

According to Michael Pollan, on 100 acres of grassland and 450 acres of woods, Salatin and his family now produce:

- ☞ 30,000 dozen eggs
- ☞ 10,000 broilers
- ☞ 800 stewing hens
- ☞ 50 beeves (25,000 pounds of beef)
- ☞ 250 hogs
- ☞ 1,000 turkeys
- ☞ 500 rabbits

And they do so without the use of ANY chemical fertilizer, pesticide, or other industrial product, other than a little diesel. Salatin calls himself a ‘grass farm-

“We are entering a new world. Of that there can be little doubt. The real question, for anyone truly concerned about our future, is not whether change is going to come, but whether the shift will be peaceful and orderly or chaotic and violent because we waited too long to begin planning for it.” -- Lester Brown

er’ – through the miracle of photosynthesis he helps nature transform ‘free’ solar energy into high-value food energy. And he sells this energy locally in the form of good food.

As an economic, social, and moral enterprise, Polyface Farm is the mirror opposite of Industrialism.

“Grass farming done well,” writes Pollan, “depends almost entirely on a wealth of nuanced local knowledge at a time when most of the rest of agriculture has come to rely on precisely the opposite: the off-farm brain, and the one-size-fits-all universal intelligence represented by agrochemicals and machines.”

To demonstrate this contrast, Pollan compares Polyface Farm to a Corn-belt farm in Iowa that he visited:

Iowa Farm

- γ Industrial
- γ Annual Species
- γ Monoculture
- γ Fossil Fuel
- γ Global Market
- γ Specialized
- γ Mechanical
- γ Imported Fertility
- γ Myriad Inputs

Polyface Farm

- γ Pastoral
- γ Perennial Species
- γ Polyculture
- γ Solar Energy
- γ Local Market
- γ Diversified
- γ Biological
- γ Local Fertility
- γ Chicken Feed

The key is to go local, which, Pollan writes, “by definition is a hard thing to sell in a global marketplace. Local food, as opposed to organic, implies a new economy as well as a new agriculture – new social and economic relationships as well as new ecological ones.”

Creating healthy, local food isn’t the only way to “opt out” of the Industrial Age. In my work with The Quivira Coalition over the past nine years, I’ve seen many other inspiring examples of genuine sustainability, both social and ecological, including the progressive ranching practices of many landowners, the rise of democratically-enthused collaborative groups, creative ideas for the production of local energy, new water harvesting techniques, and the innovative restoration methodologies of a new generation of scientists, consultants and entrepreneurs.

Much of this “opting out” began in the mid-1990s, and although it happened for a variety of reasons, many shared Salatin’s core rejection of the Industrial status quo.

The rise of watershed groups around the region is particularly illustrative. Not only is this collaborative



“Betty the Bold” - chickens behind Courtney’s house.

movement embracing many of the nonindustrial models listed above, but if an energy crisis does result in a societal contraction at some scale, then watershed groups will be on the front lines of the hard, but necessary, task of ‘relocalizing’ our food, fuel, and economic needs.

That’s why I take heart in the work of groups such as the Rio Puerco Management Committee (RMPC), a multi-party collaborative effort focused on the 4.5 million acre Rio Puerco watershed, located northwest of Albuquerque. Once called the ‘breadbasket’ of New Mexico, the Rio Puerco watershed degraded so alarmingly over the decades, due to the industrial effects of highway construction, overgrazing, and other forms of overuse, that Congress officially authorized its restoration in 1996. Since then, the RPMC has employed a variety of innovative ‘Best Management Practices’ to revive the land and the people who depend on it.

As part of their effort to realize their goals, the RPMC recently completed a vision for the watershed for the next fifty years – a declaration that could easily be the mission statement for PrePostindustrialism. It reads in part:

“It is 2006, and we are a group of people learning how to live on the land. As residents in the watershed, we are working together to restore the land, to complete a transition from a wornout watershed to a healthy stream system, and to maintain a healthy way of life in harmony with the Earth...We want to build understanding of what a watershed is, how it works, and

how it nourishes the community. The result will be native grasses and springs in abundance, to protect the land, and to provide for its use by all living beings.”

The House Of Resilience

It’s more than sustainability, however. The Pre-Postindustrial “powerdown” of society means we need to think about ‘resilience’ too, which is defined in the dictionary as “the ability to recover from or adjust easily to misfortune or change.”

As the tragedy in New Orleans demonstrated, sustainability doesn’t mean much if a hurricane destroys your house. Communities need to be sustainable and resilient.

In ecology, resilience refers to the capacity of plant and animal populations to handle disruption and degradation caused by fire, flood, drought, disease or insect infestation. And that’s only the dramatic stuff. Resilience also describes a community’s ability to adjust to change, which can be slow or fast, such as a slow shift in rainfall patterns, or a rise in global warming (and a lack of resilience is a key factor in extinction).

The most resilient communities are ones that possess the ability to adapt to changing conditions. For example, in nature two highly resilient communities are grasslands and forests. In North America, the former has been around for a mere 66 million years at least, while the latter has in place for over 300 million

(and both survived the catastrophic meteor strike that wiped out the dinosaurs).

If damaged by drought or fire, grass and trees have the strength to recover. If blessed with good rains, they flourish. The same can be true of communities of people.

Michael Pollan makes this point when he describes the role of Polyface farm in the local community: “The great virtue of a diversified food economy, like a diverse pasture or farm, is its ability to withstand any shock.”

Of course, a community needs to know that a shock is actually taking place – which is where the metaphor of the frog in boiling water comes in. Hopefully, when we decide to jump out of the pot we won’t discover that the sides are too high!

Like grass, or grass farming, we need to build communities that can ride out the bad times and flourish in the good ones. In addition to local food, this means a healthy local democracy, a regenerative economy, shared goal setting, and work that strengthens the bond between people and the land – all built upon a foundation of healthy land in what ecologists call ‘proper functioning condition.’

On this foundation we can then build our “cultural house,” as conservationist and farmer Peter Forbes suggests. And the goal of construction – as it is with any house – is to build something that will last.

I believe the four walls and roof of this house should be composed of the following:



Sam, Jerrod, Joycelyn, Savannah and Michael from the Gallup, NM Youth Conservation Corp (YCC) help build riparian restoration structures along Comanche Creek in the Valle Vidal Unit of Carson National Forest, New Mexico.

Wall One:

Local Food and Energy. If a societal contraction, even on a small scale, is in our future then it makes a great deal of sense to invest time and money now in localizing our food and energy. This means everything from growing a garden to supporting local farmers and ranchers (and encouraging them to be good stewards) by eating in local ‘foodsheds’ as much as possible. It also means developing local sources of energy, such as biomass and solar. And since all of this will be difficult to achieve at scales necessary for cities to survive – we should get started now.

Wall Two:

Restoration. Resilience depends on our ability to repair our damaged local ecosystems so that they can support our needs, as well as the

needs of the natural world. Restoration means revitalization – restoring to health, which includes key ecological processes, such as fire, and key native species. Our cultural house depends on a strong ecological foundation. But revitalization is also economic – restoration creates local jobs and provides key educational opportunities for children, youth, and adults.

Wall Three:

The Decline of Federalism and the Rise of Regionalism. The era of top-down bureaucratic control from a distant land, the product of a different historical period, is drawing to a close as federal deficits grow and budgets shrink. No one I know believes that a reversal of this trend will occur. What will rise in its place will be city/county government alliances, abetted by new rural/urban links, and innovative private enterprises co-managing landscapes for ecological and economic health. The net result will be increased local control over resources and a shared future.

Wall Four:

Reconnecting People with Nature. Industrialism, with all its creature comforts and poor eating habits, had the net result of moving us dangerously far away from nature. Unfortunately, this separation is augmented by an environmental movement that de-emphasizes the positive role of people and work in nature. We need to reverse these trends, starting at the level of soil, grass, and water. We need to become 'land literate' again and actively re-engage with the natural

world through, among other things, food production and restoration.

Roof:

Build the Radical Center. Going local will encourage a rebirth of civic responsibility and action among community members. Individuals and organizations interested in exploring our common interests instead of arguing our differences will gravitate to the Radical Center. This is where problems get solved. It is also where the leaders will come from to help us get from 'here to there.' I don't see a sign that either major political party, or any specific political leader, understands the coming crisis and, therefore, none can provide the necessary leadership. The leaders will come from our ranks instead.

No one should think that building a House of Resilience will be easy or cheap – only that it must be done if we are to transition to the Postindustrial era with as little pain as possible. What encourages me when I think about the hard work ahead is the knowledge that many of the construction materials as well as architects, already exist. And not only exist – they are being put to good use in many places and in many different situations.

The shape of each House will be as different as each community constructing it – but they will be bound together by one common purpose: to help us get from 'here' to 'there' and stand strong as the winds of change begin to blow. ㄿ



Annalise and Kylie Olsen connecting with nature on the Myrin Ranch, Inc., Altamont, UT.
April, 2006 (Photo by Beth Myrin)

Restoration Working Paper No. 1*

Seeing the Forest *and* the Trees:

a Review of a Collaborative Restoration Project on Rowe Mesa, San Miguel County, New Mexico

by Courtney White

Between 2001 and 2005, a collaborative, science-based restoration treatment project – called Rincon Ortiz CFRP – was successfully implemented on three hundred acres of ponderosa/piñon-juniper woodland on Rowe Mesa, near Santa Fe, New Mexico. Equally important was the success of the social goal of the project: to involve local residents in economic and educational activities related to a forest health restoration effort so that the link between cultural continuity and the restoration of natural ecological processes can be strengthened. Combined, the goals yielded two major lessons learned: 1) how to do the work properly, and; 2) an indication that ecological restoration might not necessarily come with significant social cost and conflict.



Trouble In The Woods

Decades of fire suppression by government agencies and overgrazing by livestock, beginning early in the twentieth century, combined with unusually wet years led to the development of thick stands of small trees in many of our southwestern ponderosa pine forests. The return of severe drought in the late 1990s, coupled with increased public activity on forested lands, raised both the likelihood and the consequences of catastrophic forest fire.

Today, crown fires – very hot fires that result in high rates of tree mortality – are much larger and more frequent than they were historically, and often threaten human communities as well as ecosystems. As the acreage burned in destructive crown fires has increased across the West, a broad consensus that something must be done has emerged among scientists, public land managers, landowners, politicians, and members of the public, thanks to widespread media coverage of the big fires. This consensus was translated into action.

Congress, for example, has responded to this crisis by: (1) maintaining and increasing fire suppression activities across the region; and (2) funding the implementation of restoration projects on public land, especially in those areas located in the urban-wildland

interface. Restoration of ponderosa pine forests includes the reintroduction of frequent, low-intensity fire. This usually requires fuel reduction through thinning and burning in prescribed fires.

But restoring southwestern forests presents agencies with a variety of challenges.

In the first place, fire suppression is becoming increasingly difficult, ineffective, and costly, especially as human encroachment into the woods expands in the form of new and enlarged homes. There is also the public's concern that prescribed fires might burn out of control. Linked is a growing concern about air pollution among the public – all of which reduces the ability of land management agencies to set prescribed fires or manage for natural (lightning-sparked) fire regimes.

Secondly, there is now a scientific consensus that we need to work at a scale that will make a difference across large landscapes. “We can no longer constrain our thinking to hundreds of small, independent fuel-reduction projects,” writes Dr. Tom Sisk and others. “We need coordinated, strategic efforts linking individ-

**The purpose of this occasional Series is to provide background information, analysis and lessons learned from evolving, on-the-ground restoration projects in a format that falls in length between a short article and a long report so that others may benefit.*

ual projects to the larger objective of managing landscapes.”

But working at a landscape scale means more than simply knowing which tool to pull from the restoration toolbox; it means collaboration, education, and communication. For example, working across jurisdictional boundaries – federal, tribal, state, county, municipal, and private – requires a complex democratic process where diverse values drive decisions.

Lastly, successful ecological restoration will require the integration of scientific knowledge with local traditions, wisdom, and economic activities. While we have today a wealth of forest management experience, sound ecological understanding, and increasingly powerful tools for landscape planning, the main challenge is implementation – which requires a wholly different set of skills and depends as much on economics, politics, culture, history, and human relationships as it does on geology, ecology, and precipitation.

This is where a three-hundred acre restoration project on a mesa southeast of Santa Fe, New Mexico, comes in: to explore the blending of science and culture in a successful demonstration of implementation.

Scientific Underpinnings

The science behind the Rincon Ortiz Community Forest Restoration Project (CFRP) represents a consensus of decades of research on ponderosa pine forests in the Southwest. This consensus falls along two lines: first, that these pine forests have been radically altered by human activity which has resulted in dense populations of young trees increasingly vulnerable to destructive crown fires; and second, that there a strong sense of urgency that these forests be restored to an ecological condition called the ‘natural range of vari-

ability’ (NRV), as quickly as possible.

Much of this consensus is summarized in a paper “Ecological Restoration of Southwestern Ponderosa Pine Ecosystems” by Dr. Craig Allen, and others.

According to the authors, anthropogenic change in forests over the past century-and-a-half, due to the effects of overgrazing, fire suppression, logging, and road construction, have substantially altered the ecological structure, composition, and the fire regime of southwestern forests.

For thousands of years, prior to these changes, southwestern ponderosa pine forests were shaped principally by frequent surface, or “cool,” fires, as well as periodic droughts, wet spells, and insect infestations. After the arrival of the railroad to the Southwest in 1880, which opened national markets for local meat, wood, and

wool, major alterations of forest structure and function took place.

If these conditions and trends are allowed to continue, they argue, serious ecological damage to ponderosa pine ecosystems will accumulate. Restoration efforts to date have not been sufficient so far. “Although prescribed fire programs have been underway for several decades,” they write, “the scale and intensity of these restoration efforts have been inadequate to reverse the overall trends of degradation in Southwestern pine forests.”

The key to effective ponderosa pine forest health is the restoration of the key ecological process of frequent, low-intensity fires, to what is called the ‘natural range of variability’ – or the degree to which a system can absorb disturbance before it shifts into a fundamentally different behavior.

To the authors, there are two keys to restoring the NRV in Southwestern ponderosa pine forests. The first is to aim at heterogeneity, which they describe is a diverse, mosaic-like landscape of variable tree densities,



Young pinyon pine and juniper trees have recently encroached into natural meadows.

including some areas of relatively high densities, which can accommodate a diversity of wildlife species.

The second key is getting fire back on the land.

“In the long term,” they write, “the best way to align forest conditions to track ongoing climate changes is to restore fire, which naturally correlates with current climate. Some stands need substantial structural manipulation before fire can safely be reintroduced, but in many cases fire can then do the preponderance of the work of ecological restoration, recreating the natural interaction of structure and process.”

They consider a successful restoration to be one that sets ecological trends in the right direction, which in ponderosa pine forests means reducing tree density and ladder fuels, protecting large trees, restoring surface fires, and increasing ground cover and overall biodiversity levels.

The need for action at the landscape scale is urgent. The consensus on the “why” of restoration is clear. Now the question is: how does implementation actually work – while acknowledging that there is no single way to achieve restoration?

While the foundation of scientific knowledge about restoring pine forests in the Southwest to health is strong enough now “to get started,” the challenge is to mesh this knowledge with local culture and economics in order to create long-term benefits for all.

On this front, northern New Mexico has both an advantage and a disadvantage. Its advantage is that much of its rural population maintains a strong link, both economically and culturally, to the land.

For example, in a recent report on livestock ranching in the region, researchers Carol Raish and Alice McSweeney wrote: “The permittees with whom we spoke consider the ranching way of life vital to maintaining their cultural heritage and traditional values, as well as to passing those values on to future generations.

There is a strong sense of responsibility to land, livestock, family, and community, with land often viewed as part of the family and upholding traditional values are regarded more highly than material possessions or monetary gain.”

The disadvantage is a century of hard use of the land – overgrazing by livestock after 1880, for instance. This is precisely the type of anthropogenic change that the scientists say contributed to the disruption of natural fire conditions in the region’s ponderosa pine forests.

As historian Bill deBuys has pointed out, overgrazing was not the only woe afflicting the land.



Community members harvest small-diameter trees for fuelwood.

“The mountain forests also suffered destruction on a large scale,” he writes, “often with severe damage to soils and watersheds. Loggers...cut the timber from tens of thousands of acres, with no thought for regeneration, in order to satisfy the territory’s ferocious appetite for railroad ties, mine props, and sawtimber.”

This historical condition is not peculiar to northern New Mexico,

however. Short-sighted hard use, he observes, has a long history around the globe.

Nevertheless, the lesson he takes from the mountains of northern New Mexico is this: “Self-restraint was self-punishment: it inevitably allowed someone else to reap the harvest, and the riches, first. Until the government stepped into the business of land management, the western commons were harshly abused, both by those who cared nothing for the land and by those who loved it.”

For Rowe Mesa, the era of federal management began in 1906 when Forest Assistant H. O. Stabler officially proposed including the mesa in an expansion of what was then called the Pecos National Forest. He listed two principle reasons for the additions: (1) proper regulation of the range for livestock interests; and (2) the conservation of timber resources.

It is worth quoting some of his observations here:

“On the northern part of Glorieta Mesa some of the piñon is large enough for ties and in a few years it will certainly pay to cut it. In many places it seems probable that a thinning of the juniper and piñon would lead to reproduction of the pine. When stumpage prices become still higher and the private holdings are exhausted there will be a demand for this timber.”

“There have been no fires of any consequence in any part of the proposed addition, at least, there have been none for a great many years. Evidence of light ground fires is occasionally seen but these covered only small areas.”

There is some controversy about the cultural bias built into these, and other, observations made by non-indigenous foresters of the era. What is beyond dispute, however, is how they reflect the growing mood in the early twentieth century across the nation for protection of natural resources by the federal government for regional, and national, constituencies.

What is also beyond dispute is the conflict that arose eventually from the clash of interests of local villages, the federal land agencies, and urban-based recreational and environmental groups.

Meshing the historical and economic needs of an area in which poverty persists while achieving natural resource sustainability and protection remained an elusive goal. And too often, the natural resources themselves took the brunt of the conflict.

As an example, deBuys cites the issue of fuelwood gathering. By the late 1960s, he says, the woodlands of the Sangre de Cristos had been devastated by centuries of unrestrained firewood cutting and range conversion activities (chaining, for instance).

In the late 1970s, the Penasco District of the Carson National Forest inventoried its woodlands and determined that 250 cords of green piñon-juniper wood could be harvested sustainably each year. Then they checked the permits being issued for fuelwood and discovered that over 1700 cords were being cut annually, almost all of it by local villagers. Almost certainly, an additional amount was being cut unofficially.

In sum, deBuys drew two lessons from

the history of land use in northern New Mexico.

“The first is that in some instances a measure of ecological harmony and stability can only be won at the painful cost of cultural and social conflict. It is also clear, however, that a society cannot long preserve its culture without also conserving the resources that give it life.”

Thus, the question of “sustainability” – as well as ecological restoration – in northern New Mexico is inextricably intertwined with issues of economic necessity, history, regulation, protection, and land health, as it is in many other parts of the globe.

CFRP

In 2000, partially in response to an escalating clash of interests in the forests of northern New Mexico, Congress passed the Community Forest Restoration Act, sponsored by Senator Jeff Bingaman (D). The purpose of this Act is to fund projects on public lands that restore forests, improve the use of small trees, collaborate with multiple stakeholders, implement best management practices, monitor results, reduce the threat of wildfire, improve watershed conditions, and create jobs and training for local communities.

In 2001, a proposal from the Four Corners Institute



Spreading the word on forest restoration was an important part of the project.

and the Conservation Fund, owner of the Valle Grande Grassbank on which the restoration project would be located, was approved by the CFRP Review Committee. The goals of the project included:

- Establish conditions that will sustain low-intensity fire on a regular, frequent basis similar in effect and timing to those that occurred within a range of natural variability before significant fire suppression activities.
- Reduce excessive fuel loads in ponderosa pine stands in order to create more natural structures and reduce the risk of crown fire.
- Provide a scientifically-guided fuelwood program for local community users.
- Bring together people with a wide variety of perspectives on forest use, including people from neighboring villages and ranches.
- Create training opportunities for members of a youth crew who will participate in the restoration by preparing the site for prescribed burning after fuelwood collectors have thinned the site.
- Burn the treated site in a prescribed fire to remove slash and create conditions for a natural low-intensity fire.

The methodology included: the creation of a treatment design based on ecological principles, including the retention of big and old trees; thinning and slash



Thinning small trees left large amounts of slash on the forest floor. Fuelwooders and control fire were needed to remove the slash.

clean-up implemented by local crews directed by Forest Guild; removal of downed wood by local community fuelwooders; a prescribed burn in the appropriate season conducted by the Forest Service; and educational outreach conducted by The Quivira Coalition.

“The greatest benefit of the project lies in the potential to inform and educate stockmen and residents of northern New Mexico villages about the pathways of forest degradation,” wrote Melissa Savage in the project proposal “and to persuade them that forest rehabilitation is the most important tool for creating a defensible space for protection from crown fire and the most secure basis of a sustainable livelihood.”

There were other benefits. Environmentalists would be exposed to the real needs involved in making a living in small northern NM towns, and the collaboration would bring together rural and urban cultures in a way that can foster a common understanding of healthy ecosystems supporting sustainable livelihoods.

“The project has the potential to change fuelwooding behavior and to persuade fuelwooders that they can be a positive force for landscape renewal,” Savage concluded. “The project will demonstrate that ecologically sound treatment can occur in the context of resource use and economic benefit.”

Rincon Ortiz

At 7500 feet in elevation, Rowe Mesa is characterized as a woodland environment interspersed with upland meadows. The project area was a woodland environment consisting of stands of pinon-juniper and young to middle-aged ponderosa pine, dense scrub oak, and sagebrush meadows. The overstory is composed of piñon pine, one-seed juniper, mountain juniper, ponderosa pine, and Gambel oak. The understory consists of blue grama, sideoats grama, ring muhly, snakeweed, cheatgrass, prickly pear, sagebrush, and cholla.

The climate is semiarid and arid continental with low humidity. The area experiences moderate to strong winds and most of the precipitation falls in the summer monsoon season. Warm summers and cold winters predominate, with large diurnal temperature swings. The average annual precipitation is 17 inches.

Culturally and historically, Rowe Mesa has been the site of human activity for over

10,000 years. A recent archaeological survey of Pecos National Historical Park, located below Rowe Mesa, documented sites from every significant period of northern New Mexican history, including hunter-gatherers of the Folsom Period (10,000 B.C.), the rise of village formation in the early Puebloan Period, (600-1100AD), the rise of the imposing Pecos Pueblo (1100-1600AD), the period of Hispanic colonization and homesteading (1600-1846), the Anglo-American period (1846 to present), as well as Santa Fe Trail ruts, a Civil War battlefield, a historic archaeological excavation at Pecos Pueblo, and modern activity.

By its proximity to the Pecos Valley, as well as its abundant game, fuelwood, and other natural resources, Rowe Mesa felt the collateral effects of all this human activity. For example, during the early, and often violent, contact between Spanish conquistadors and native populations (1540-1598AD), the inhabitants of Pecos Pueblo often fled to Rowe Mesa for refuge.

The Rincon Ortiz CFRP began in 2002 with the issuance of the Scoping Notice by the US Forest Service, as required by the National Environmental Policy Act (NEPA). Here is an outline of subsequent activity:

- Baseline archaeological and biological assessments were conducted (2002)
- A forest thinning prescription was written (2002)
- Thinning was implemented by a commercial crew (2002-2003)
- A YCC crew scattered slash and raked needles away from big trees (2003-2004)
- Fuelwood gatherers removed downed wood (2003-2004)
- A prescribed fire was successfully implemented in the project site (Spring 2005)
- Pre- and post-treatment monitoring was conducted (2002-2005)

In 2005, Steve Harrington, of Forest Guild, which coordinated much of the thinning work, conducted a review of the project's economic outcomes. They include:

- Service contracts were filled by commercial operators from the towns of Mora and Tres Piedras. Local crews treated 165 acres by felling trees according to a restoration prescription. The

thinning work totaled \$220/acre. Slash treatment on 80 of the 150 acres was conducted by two crews...the total cost was \$125/acre. Slash treatment on the remaining 70 acres was done by A YCC crew, for \$46/acre.

- Seven youths in the YCC crew were trained in restoration activities and performed slash treatment.
- A locally-based ecological restoration curriculum was also developed for use in local elementary and high schools.
- Public meetings, workshops, tours and field days engaged roughly 60 stakeholders, from adjacent communities and Santa Fe and further afield. While an exact count of individuals participating in restoration practices on the ground is impossible, it can be assumed that between the various crews and fuelwooders there were roughly 150 or more. About 200 newsletters were distributed.

Harrington concludes: "The Project was clearly successful in achieving a number of its goals. The Project provided work and resources to several work crews and over 100 fuelwooders and grazers, as well as consultants and other professionals. Dozens of rural families were provided with an important source of heat and fuel. The project also provided understanding and experience with restoration practices to dozens of rural stakeholders."

Monitoring specialist Will Barnes conducted both pre-treatment and post-treatment monitoring assess-



A prescribed fire burns beneath the canopy of a restored ponderosa pine stand.

ments of the ecological conditions. They include:

- Pre-treatment data show tree density to be between 240 and 308 stems per hectare. Mean diameter at breast height was 4.7 inches for piñon and 9.6 inches for ponderosa.
- The majority of the piñon and juniper trees in the forest were less than 100 years old.
- Pre-treatment grass cover ranged between 15% and 18%, while forb cover was less than 1%. By contrast, grass cover in 2001 in the piñon-juniper savanna across the road from the Rincon Ortiz project area ranged from 43% to 46%, while forb cover ranged from 5% to 6% (Barnes 2004).
- Data collected in June of 2005 from the control sites describe a system in continuing decline. Forest density increased from 308 to 352 stems per hectare.
- The treatment sites present a marked contrast. Estimated forest density declined significantly from 240 stems per hectare to 95 stems per hectare.
- In the overstory, the changes are more dramatic, and where piñon pine had been the dominant plant by almost three to one over ponderosa, now ponderosa outnumbers piñon by two to one.

Barnes concludes: “This series of treatments was clearly effective at re-structuring the overstory in this forest. The overstory canopy is now dominated by widely spaced mixed age ponderosa. The size of the trees has increased, while the density has decreased substantially. There are now wide gaps in the canopy, more space and light for understory production.”

Local Impressions

In the summer of 2004, Armando Nieto, a graduate student at Colorado State University and an intern with The Quivira Coalition, conducted interviews with nineteen grazing permittees and sixteen free-use-permit fuelwooders about the educational effectiveness of the project. Some of his findings include:

- The majority of respondents recognized the role of restoration treatments in the health of the ecosystem and in the maintenance of their livelihoods, and expressed strong support

for further treatments with continuing community involvement.

- By their own estimates, 50% of respondents gathered one-and-a-half to two cords of free fuelwood in the fall of 2003. 25% (four) collected three cords. The remainder either collected one cord, or were not sure how much they collected. Nearly all (15) reported using the wood exclusively for personal or family use.

- Only six out of 15 interviewees reported having been informed about any forest restoration projects being carried out on Rowe Mesa. Two said they learned about the CFRP project when they obtained their permit at the Ranger office. One learned from a sign at the project site.

- Thirteen respondents agreed that there was a link between the wood collecting they did under the free-use permit and the health/condition of the forest. Five interviewees commented that the wood collecting helped reduce fire threat in the area; three thought it helped improve grass production and grazing. Ten saw room for improvements to the project.

Nieto concluded: “The Rincon Ortiz project succeeded in changing perspectives and informing the stewardship ethic of public land users in the community. Still, opportunity abounds for increasing the involvement of the stakeholders in future restoration projects.”

He also recommended that for these projects to continue functioning in a way that meets their goals and has a beneficial effect on their stakeholders,



A restored forest stand, with an open, sun-dappled forest floor.

multi-party monitoring of socioeconomic and ecological effects should remain an integral part of all forest and range restoration projects.

“As an element of adaptive management,” he writes, “monitoring is the only way to know where to take the next step, and without effective monitoring, restoration projects run the risk of losing sight of their mission, neglecting their intended beneficiaries, and allowing the continuance of the socioeconomic and ecological trends they originally sought to halt.”

Lessons Learned

First and foremost, there is an important lesson to be learned from the Rincon Ortiz CFRP about how to do restoration. The science of forest ecology has a great deal to tell us about potential prescriptions for restoration: ideas about how many trees to remove, what size trees to leave behind, what to do with the slash, when to burn, how often to burn, how and what to monitor. But it is often at a loss about how to go about doing the work in a way that engages both local communities and the profit motive.

The Rincon Ortiz project addressed both successfully. The prescription employed in the project successfully reversed the degradation of forest function, as the initial round of post-treatment monitoring demonstrated. It is probably safe to say that the threat of catastrophic crown fire has been significantly reduced as a result of the treatment. Whether or not a ‘natural’ fire cycle can be restored over the long-run remains to be seen, but early indications suggest that it is on the right track.

The social element of the restoration work seems to have been successful too. In a sense, the main goal of the project was not simply to treat a patch of forest but to develop local capacity to do restoration work. This was accomplished by the employment of local crews in the thinning work, including a youth corps. The role of the fuelwooders in the project also demonstrated a successful blending of cultural tradition with scientific prescription.

The successful combination of the two, social and scientific, leads to a second lesson learned: that “ecological harmony and stability,” as author and historian Bill deBuys has described it, might not necessarily come with significant social cost and conflict.

Forest rehabilitation and social stability, and social justice too, are not zero-sum activities – for one to advance, the other must retreat. On the contrary, the

integration of centuries-old economic activity with the latest scientific thinking about forest health can be accomplished relatively smoothly.

Which brings us to the third lesson: the key to success is education, mutual respect, collaboration, and the willingness to learn among the partners. In our experience, the value of collaboration primarily lies with its diversity – each person or organization involved will bring a unique perspective to bear on the problem at hand. For these perspectives to be effective, however, mutual respect needs to be in operation, especially a willingness to consider ideas that challenge set opinions.

Fourth lesson: on public land, restoration must be a collaborative effort. The capacity of the Forest Service to do restoration work is inadequate to the scope and scale of the challenges. The Rincon Ortiz CFRP demonstrated that a public/private partnership can work smoothly when everyone brings a part of the solution to the table.

Fifth lesson: monitoring must never stop, even if the project does. But the money for this type of work is always short.

Despite the project’s successes, however, it needs to be noted that there is no ‘silver bullet,’ or set prescription, for restoration work in ponderosa pine forests. Local variability – socially, economically, and ecologically – will necessarily influence the restoration activity. Restoration should be placed-based. While we have a great deal of ecological knowledge now it is by no means complete. As a result, all implementation actions need to be reviewed and modified as local conditions warrant. In other words, restoration is a process, not a product. It is an open-ended learning experience, and as such requires humility, flexibility, and, above all, perseverance.

In its experimental blend of jobs, science, culture, outreach, and implementation, the Rincon Ortiz CFRP opens a small, but important, window on the potential of future restoration work in ponderosa pine forests. The main challenge will be developing strategies for ‘scaling up’ the project to a point where treatments can be effectively conducted at a landscape level. And it is only at this scale that serious progress can be made on the ecological and economic fronts. 2

This article and bibliography can be downloaded from The Quivira Coalition website: www.quiviracoalition.org.

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