



La Vida
Floresta

Ecology, Justice, and Community-Based
Forestry in Northern New Mexico

by Ernest Atencio

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**2004
Northern New Mexico Group of
the Sierra Club**

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Acknowledgments



"Keep the land healthy, and it will keep you healthy."—Northern New Mexico rancher **Virgil Trujillo**

Starting a project like this you never really know what you're getting yourself into. Natural resource disputes in northern New Mexico have turned to heated and passionate confrontation in recent years. The issues are particularly sensitive when they involve resources that are fundamental to rural livelihoods and the survival of traditional Hispano villages, like timber.

So I am especially grateful to those who put aside their suspicions and took the time to talk with me even after they found out I was working for an environmental group. These are gestures of genuine goodwill by people with only the best of intentions. They want more than anything just to see their communities and their forests thrive. Deepest thanks to Max Córdova, Manuel Gurulé, Gene Kuykendall, George Ramírez, and to the two others who asked that I not use their real names,

referred to in the report as Gabe Casados and Louie Salazar. These hardworking men are the true experts and voices of the community, I just do the research and write their story.

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Natural Resources Law Center at the University of Colorado; Questa community activist Roberto Vigil; Geraldine Tafoya of the Río Costilla Cooperative Livestock Association; the patient and helpful staff at the Taos Public Library; María García, David Johnson, Carveth Kramer, Ron Meyers, Dan Raél, Carol Raish, and David Seesholtz, all from various local and regional offices of the U.S. Forest Service; Kim McDonald of the University of Washington College of Forest Resources; and Rosemary Romero of Western Network. Thank you to those who took the time to review and critique the draft, including landscape ecologist Dr. Craig Allen of the USGS, Bryan Bird of the Forest Conservation Council, forester Jack Carpenter of the Carson National Forest, Cornell University sociologist Walt Coward, anthropologist Catherine Knott Grant of Oregon State University and Vecinos del Río, Kay Matthews of *La Jicarita News*, UCLA Geographer and Director of the Four Corners Institute Dr. Melissa Savage, Martha Schumann of The Forest Trust, professional forester Kurt Swearingen, University of New Mexico community planner and founder of Ganados del Valle María Varela, and a couple of anonymous reviewers at the Sierra Club. And thanks again to all those whose help I acknowledged in *Of Land and Culture*, because I recycled so much of that information into this report.

This project would not have taken place at all without the generous sponsorship of the Northern New Mexico Group of the Sierra Club. Doug Fraser, Norma, McCallan, George Grossman,

Barbara Johnson, Cliff Larsen, Paul Paryski, Lionel Sorocco, Courtney White, and others in the group have always been willing to do right thing and walk the Sierra Club talk about environmental justice, even if it's unpopular in the wider environmental community, and they supported the project throughout in more ways than just signing the checks. Thanks also for additional support from the Mexicano Land Education and Conservation Trust and The Quivira Coalition.

And a special thanks to Roberto Chené, from whom I first heard it said plainly that environmental health and community health are dual priorities — neither is more important than the other.

All these people helped support and guide this project in many ways, provided information, insights, suggestions, and money, but all opinions, conclusions, and errors within are mine alone.

— Ernest Atencio



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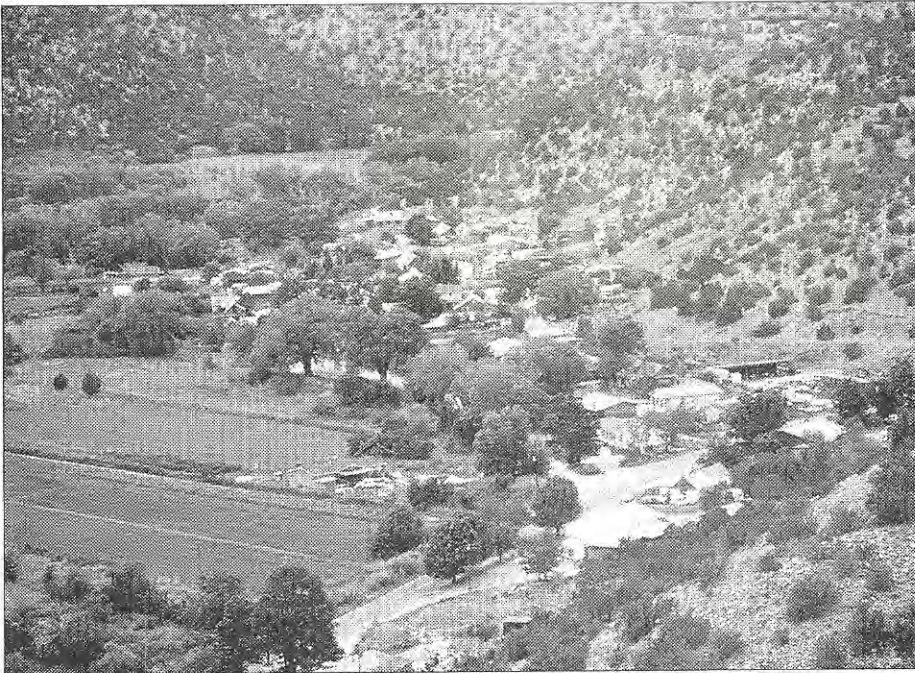
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Preface

Shades of Grey



"The environmental movement has been excellent in the sense that it makes us aware of our environment. But we've got to stop the nonsense of wasting all those resources, attacking each other, yelling at each other. Turn the situation around and let's start yelling for each other, for each other's health, so to speak."

— Northern New Mexico rancher
Virgil Trujillo¹

This report describes some of the complexities and shades of grey surrounding what some have cast as a black-and-white issue. Several national environmental organizations launched a national campaign in the mid-nineties calling for an end to all commercial logging on federal lands. This campaign, as currently framed, does not leave much room for dialogue. Commonly known as "zero-cut," it comes across as a declaration of war, instantly turning the issue into an either-or, good-guys-versus-bad-guys proposition. Sometimes the issues are that simple and clear, but not this time.

This report presents the alternative views and voices of traditional northern

New Mexico communities that have been largely left out of the discussion. It was not intended to systematically incorporate a balance of perspectives from the mainstream environmental community (though some of that view is nonetheless included), because I believe that those of us who follow this issue are very familiar with that perspective. And it is not simply "the other side" of the issue, because it is more complex than one side or the other. But it is a fair representation of public lands woodcutting issues in the context of northern New Mexico from an angle that has been ignored by the mainstream environmental community and might be new to many readers.



"An unconditional ECL approach to national forest reform glosses over important distinctions between the large and the small, the corporate and the local, the short-term profit-driven and the long-term sustainable. When we lump it all together, we succeed only in widening the rift between rural, land-based communities and the environmental community."

Here in northern New Mexico chronic local poverty and a long history of traditional local stewardship of what were until recently community-owned forest lands add a very different dimension to the issue. Not to mention the fact that forests here and elsewhere are badly in need of extensive thinning, which could easily become "commercial" ventures.

Black and White and Grey All Over

In 1996 Sierra Club members from across the country were asked whether the Sierra Club should "advocate an end to all commercial logging" on publicly owned federal lands in the U.S. Take a look at a few examples of abused and ailing forests under archaic Forest Service timber policies, and it's obvious that the time had come for serious reform. The membership overwhelmingly supported the End Commercial Logging (ECL) initiative with a vote of 66 percent in favor, 34 percent opposed.

There is no doubt that private industry has profited at the expense of taxpayers, and often at the expense of the health of our national forests. We have all seen images of landscapes devastated by clearcuts and mazes of logging roads, watersheds ruined by tons of eroding sediment. We've heard the indisputable facts and figures about timber sales sold for a song to wealthy corporate interests, subsidized by you and me. Given that information, Sierra Club members made the right choice. They took a stand to help save what's left of our national forests from unbridled corporate abuse and subsidized profiteering.

Like most things in life, however, this is another one of those issues that's not quite black and white. That lack of clear resolution is a disappointing truth to those among us on all sides who would turn environmental issues into marketable either-or propositions: jobs versus owls, farmers versus fish, urban versus rural, recreation versus resource use. An unconditional ECL approach to national forest reform glosses over important distinctions between the large and the small, the corporate and the local, the short-term profit-driven and the long-term sustainable. When we lump it all together, we succeed only in widening the rift between rural, land-based communities and the environmental community. This might be fine if the two communities were true enemies, but they're not.

It is a common prejudice to assume that local people who make a living by grazing livestock or cutting timber or using other resources on public lands care less about those lands than environmentalists and recreationists. But it's clear that many of those people who rely on the land — especially here, after a legacy of four centuries and more — have a wealth of ecological knowledge and a very strong environmental ethic. It is not only an injustice to keep those voices and concerns out of the dialogue, but a loss to the diversity of the environmental community and a loss to the health of the land. It's critical for any long-term progress on environmental issues that we all get clear about where the real threats lie and quit spinning our wheels fighting the wrong fights with the wrong people. Learning to tell the difference



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is becoming an increasingly rare and valuable skill.

Local community reaction to the ECL initiative was strong and immediate. Whatever the broader intentions of trying to end rapacious commercial logging, the net effect on local people would essentially be zero-cut. And they see it as a direct threat to their already challenging rural livelihoods and an unwarranted attack on a way of life. Most people I approached for this project were wary and hesitant to talk to me once they learned who I was working for. Even though many of those folks understand that the Northern New Mexico Group and a few other local environmental groups are sympathetic to their concerns, just uttering the words “Sierra Club” is enough to raise hackles and close a few doors and minds.

These are by and large reasonable people who understand and care about environmental issues, but they view ECL and other such tactics as narrow, unreasonable, extremist, and confrontational. All of which only increases local suspicions about environmental groups and deepens what I believe is an artificial and unnecessary divide. It reduces the issue to an oversimplified fight between good guys and bad guys – you’re either for it or against it – and makes the work of protecting the environment harder for all of us. But it doesn’t need to be that way.

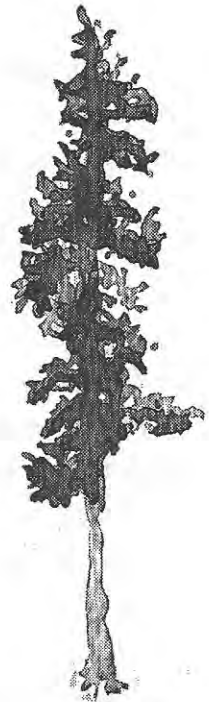
It may be risky business to be exploring grey areas at this time, with unaccountable corporate logging masquerading as the Administration’s fire policy or “Healthy Forest Initiative,” or questionable and vague

proposals to change forest management through the “Charter Forests” program, but it’s always a good time to try to bring more reason and rationality to the environmental community.

A Broader Approach

With a broader sensitivity to local concerns from years of environmental advocacy in northern New Mexico, several local environmental groups have taken the position that timber cutting is not an either-or proposition, and some have supported community-based forestry plans and timber sales. Soon after the 1996 ECL vote, the governing board of the Southwest Forest Alliance declined to throw their support behind it. Local groups have come under fire from other environmentalists over the years because of these divergent positions. Proponents should keep in mind that while promoting ECL, many of their organizations have also made a commitment to support environmental justice.

In 1993 the Sierra Club, as one example, formally adopted this statement on environmental justice: “The Board of Directors of the Sierra Club recognizes that to achieve our mission of environmental protection and a sustainable future for the planet, we must attain social justice and human rights at home and around the globe. The Board calls on all parts of the Club to discuss and explore the linkages between environmental quality and social justice, and to promote dialogue, increased understanding and appropriate action.” And in February of 2001 the club adopted a thoughtful, though by no means comprehensive, list of environmental justice principles to provide some guidance for



its 1993 statement.²

In northern New Mexico, and perhaps other places, an absolutist approach inevitably runs head-on into environmental justice issues, and that's one problem this report will explain. The issue deserves a fair and open airing, and this report is just that. This report is intended as a constructive contribution to the ongoing dialogue on logging and environmental justice, to "discuss and explore the linkages between environmental quality and social justice, and to promote dialogue, increased understanding and appropriate action." I hope it is read in that spirit.

This report can be taken as one case study within a much broader context. The environmental justice issues discussed here very likely extend beyond the traditional cultural enclave of northern New Mexico to other forest-dependent communities. These same arguments and conclusions will apply in any context where traditional-use access to basic resources on ancestral lands is at issue, which is obviously true where Native American communities rely on public lands, in northern New Mexico or elsewhere. This report focuses on local Hispano communities, however, because what was once a substantial land base legally granted by the Spanish and Mexican governments has been almost completely lost due to the government's failure to honor international treaties after the U.S. conquest a hundred and fifty years ago. Local Pueblo tribes have certainly suffered great losses in land and otherwise, but most of the Pueblo land grants provided by Spain and Mexico under the same system as that for Hispano villagers — analogous to the

U.S. reservation system — remained largely intact and in several cases have increased in size.³

One colleague tells me that the issues presented here are a close parallel to the situation in Appalachia, short of the land grant history. A unique local culture has endured in that region for centuries, similarly intermarried and culturally intertwined with native tribes, and communities have sustained themselves through bleak economic conditions with a locally appropriate land-use ethic that includes sustainable timber harvesting.⁴ Other comparable examples no doubt exist.

Beyond the focus in this report on Hispano communities, it's important to remember the fact that local communities relying on the land, and many of those individuals involved in a burgeoning movement for sustainable resource use are not exclusively Hispano. "I don't think you can say they're Hispanic or Anglo, or what," says fourth generation logger Gene Kuykendall. "They are working people from northern New Mexico that this thing has affected."⁵

This report is essentially a companion piece to *Of Land and Culture: Environmental Justice and Public Lands Ranching in Northern New Mexico*, a project I completed on behalf of The Quivira Coalition and the Northern New Mexico Group of the Sierra Club. Along the very same lines, *Of Land and Culture* looks at the environmental justice consequences in northern New Mexico of ending public lands ranching.⁶ The two reports really belong together as an interconnected project, but are separate due to the

"This report is intended as a constructive contribution to the ongoing dialogue on logging and environmental justice, to 'discuss and explore the linkages between environmental quality and social justice, and to promote dialogue, increased understanding and appropriate action.' I hope it is read in that spirit."



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nature of funding and who commissions what for which purposes. Still, the general background, cultural and political history, economic information, public land issues, and environmental justice issues all overlap so much that in some cases I simply copied entire sections verbatim from the ranching report. I won't bother citing that report every time, but I plagiarized it thoroughly in these pages.

Notes

¹ This and subsequent quotes of Virgil Trujillo not otherwise cited are from an interview by the author on August 8, 2000.

² Sierra Club 2001.

³ DeBuys 1985; Wright 1997.

⁴ Catherine Knott Grant, personal communication, August 22, 2001.

⁵ This and all subsequent quotes and citations of Gene Kuykendall are from an interview by the author on December 10, 2000.

⁶ E. Atencio 2001. *Of Land and Culture: Environmental Justice and Public Lands Ranching in Northern New Mexico* was commissioned by The Quivira Coalition and the Northern New Mexico Group of the Sierra Club in response to a national "zero-grazing" movement. It is available from The Quivira Coalition in Santa Fe.



A Note from the Northern New Mexico Group

The report you are about read was several years in the making and extended through the terms of three Group Chairs. While the opinions expressed herein do not necessarily reflect those of the Group, it is offered for your consideration as a point of view that we believe will be constructive in the continuing dialogue about how we can best act as stewards of our forest lands.

The health of our forests is a particular concern for those of us in northern New Mexico, where we have been devastated recently by severe drought, large wildfires and major bark beetle infestation. As you will see in this report, there are large numbers of people who have lived in northern New Mexico for many generations, indeed several centuries, eking out a very modest livelihood from various forest products. They, too, are very concerned about the health of our stricken forests. We believe that we need to work with our friends and neighbors, not against them, to help return our area to resilience.

We have shared the draft of this report with a number of our fellow environmental groups and several wish to add their support: The Quivira Coalition, The Four Corners Institute, Audubon New Mexico, and the Mexican Land Education and Conservation Trust.

We particularly want to thank all the contributors to this study, the various reviewers, author Ernie Atencio, and Barbara Johnson for her editing and layout.

—Norma McCallan, *Group Chair*

—Jan Kindel and Doug Fraser, *former Chairs*



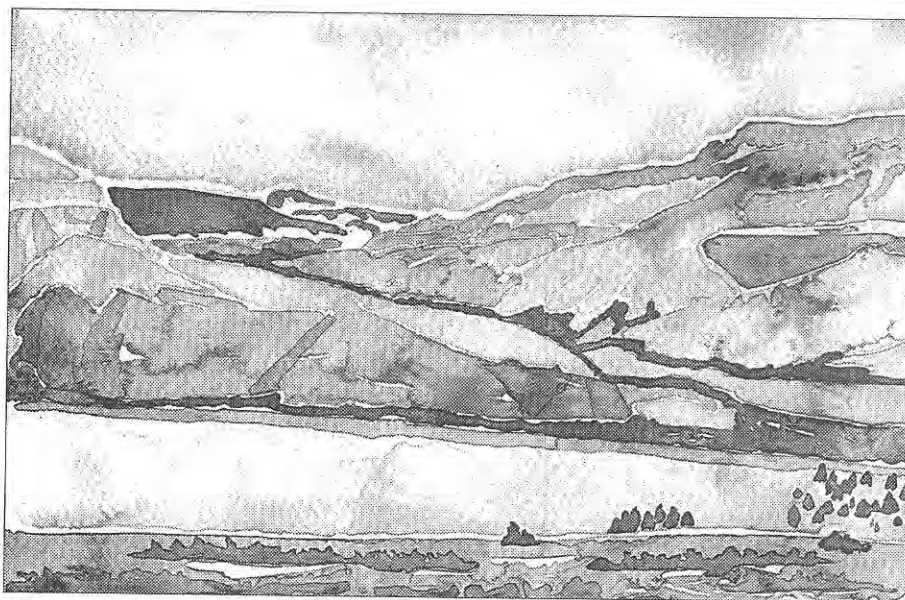
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Chapter One

Environmentalism in Northern New Mexico



I recently picked up a copy of *Forest Advocate*, a publication of the National Forest Protection Alliance furthering the cause of ending commercial logging on national forests. The cover photo shows the atrocity of a swath of clearcut in a northwestern forest, with the caption, "Public Lands Under Assault." Similar photos and statements, along with sensible and sincere articles about the myriad problems of public lands logging, fill the pages. Nowhere in the numerous articles does it mention differences in scale of "commercial" logging, or compare the industrial model with the homegrown local model, or suggest that any scale of logging might be

ecologically sound and sustainable.²

A recent report published by the same National Forest Protection Alliance, titled *The Economic Case Against National Forest Logging*, uses very detailed and convincing economic accounting to argue against public lands logging. Again, it is an argument that makes good sense in many situations, but it similarly ignores issues of scale and locally appropriate wood use. It is based on the unacknowledged assumption that **all** logging and woodcutting **anywhere** is equally destructive to the environment. Period. It's framed in the black-and-white terms of "winners and losers." It ranks employment from wood products-related jobs against outdoor

"Now we have environmentalists who have no concept of our history and who want to teach us how to care for the land."

— Northern New Mexico historian and farmer
Estévan Arellano¹

recreation-related jobs as if the two are mutually exclusive. And it concludes by saying that ending all commercial

logging, rather than reforming the process, is the only way to ensure what the authors determine are “the highest and best uses” of our national forests. “Highest and best uses” and “quality of life” in the report are reckoned by conventional economic accounting that does not consider less tangible, but no less important, measures of life’s quality – things like economic equity, social stability, cultural

vitality, tradition, sense of place.³

It’s easier to market a clear, unmuddled message, and it’s clear that the timber industry has had more than its fair share of national forest timber and wreaked plenty of ecological havoc at taxpayer expense. Big timber companies are appropriate targets. But the one-size-fits-all approach, lumping the small-scale-sustainable and the mammoth-industrial together as “commercial,” ignores critical localized issues of ecology, socioeconomics, culture, and history.⁴ In northern New Mexico, these are particularly salient and inescapable themes.

This report focuses on northern New Mexico, but it is important to recognize the broader context in which these environmental tensions exist. This area represents only one local stage in a global theater where these dramas play out, usually between environmental interests in wealthy developed nations and natural resource-dependent communities in poorer developing nations. Comparable issues of ecology, socioeconomics, culture, and history are just as salient in those local contexts as they are here.

Bridging persistent gaps between environmental, social, and economic concerns and working toward an inclusive, holistic approach to environmentalism and environmental justice continues to be a major challenge facing the environmental movement. Those of us who see environmental health and social justice and economic justice as intertwined strands of a single cord, with no one part more important than the other, straddle and obscure comfortable categories and test the limits of the more strident and dogmatic on both sides of the proverbial fence. Colleagues in New Mexico, for instance, were accused by other environmentalists of “talking to the enemy,” for their involvement in a 1997 roundtable discussion about forestry issues. I was once accused by another environmental activist of caring too much about community issues at the expense of the ecosystem, even while being threatened by a member of one of those communities for being an environmentalist. For lack of a handy category, or to try to discredit broader social concerns, this hybrid activism is sometimes dismissed as being part of the anti-



The results on Carrizo Valley Ranch (near Capitan) of a stand replacement fire on public land above. (Photo courtesy of Sid Goodloe.)



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environmental “wise-use” movement. There are always wise-use agitators about and some rural interests in northern New Mexico have indeed fallen in with them for lack of any other political movement to align with. But stereotyping all the conscientious people working toward genuine environmental and social justice goals as wise-users is patently unfair, inaccurate, and amounts to little more than a mean-spirited slur.

Beyond the perceptual blinders that we all wear, there may also be some calculated strategic reasoning behind rejecting partnerships with rural communities. In 1996 Sierra Club Chairman Michael McCloskey warned about the dangers of collaboration and making “. . . decisions about the environment through consensus rather than through normal governmental processes.” He was justifiably wary that industry could wield inordinate influence on collaborative processes, but he went on to say that “Collaboration [with rural interests] would have the effect of transferring influence to the very communities where we are least organized and least potent. . . . [T]his redistribution of power disenfranchises our constituency, which is heavily urban.”⁵ Despite the questionable logic of dismissing rural communities because they are not members of the correct environmental organization, many environmentalists appear to follow McCloskey’s advice. We should recognize, however, that this is a purely political agenda that has little to do with on-the-ground environmental conditions.

“[I]t is unfathomable why environ-

mentalists would not look to the people who have lived for hundreds of years in agro-pastoral communities, which buffer public lands, as the first to be consulted and as peers in this [environmental protection] effort,” says María Varela, founder of the model sustainable economic development enterprise called *Ganados del Valle*. “After all, Hispano villagers and Native Americans have a life-long knowledge of these lands and have fought extractive industries and the U.S. Forest Service long before the modern environmental movement.”⁶

Two particularly volatile issues in the last several years have agitated a sense of conflict and widened the rift between environmentalists and local communities in northern New Mexico. A protracted fight about access to public lands for grazing pitted several environmental groups against *Ganados del Valle* (Livestock Growers of the Valley) in the late eighties. *Ganados* members have always considered themselves to be on the cutting edge of environmentally responsible resource management — using guard dogs instead of poison for predator control, encouraging sustainable agriculture through market incentives, fighting subdivisions — and assumed that environmental groups valued these efforts. So they were shocked at the shrill attack over the issue of grazing sheep on a wildlife preserve.⁷ In 1995, a lawsuit regarding critical habitat for the endangered Mexican spotted owl ended up in an 18-month injunction against all timber harvest on New Mexico national forests. The Forest Service Regional Office interpreted this to exclude “personal use firewood,” but apparent misunderstandings throughout

the region nonetheless led to restrictions on fuelwood gathering, and this just before winter.⁸ During the bitter controversy that ensued environmentalists were hung in effigy and community activists labeled as environmental outlaws. In the end, after all the

shouldn't be a free permit, we should pay for it. So the Forest Service started charging for it. . . . We don't think it's fair, because we're doing forest restoration . . . and not getting paid and doing the work. That should have some economic value. And the economic value that we feel is that we should be getting the permit free."¹⁰

These are mystifying conflicts to local people trying to make a living on the land. They can't understand why environmentalists would work so hard to make their lives more difficult and they are left to imagine all sorts of diabolical ulterior motives. Among the other consequences discussed throughout this report, pushing a zero-anything agenda provokes similar needless and counter-productive conflicts, and sets back a lot of the progressive work many people are involved in to build consensus and broaden constituencies around common-ground issues.

George Ramírez, a woodcutter and resident of the village of Manzano southeast of Albuquerque, and a member of the Collaborative Forest Restoration Program Advisory Committee, says, "I know that because of environmental groups, it has brought to light a lot of the problems. . . . [But the spotted owl injunction] was a fine example of environmental groups that cause a devastating effect and impact on the communities, which in turn, turn the communities to hate environmental groups. So, what it did was that it put a wedge between the groups." That could have been avoided, says Ramírez, with mutual education about both environmental and community concerns. "I think that [environmentalists] need to be



Max Córdova. (All photos courtesy of the author unless otherwise indicated.)

acrimony, lawyers, and expense, neither dispute profited anybody, much less the land.

For many local villagers, far from the comforts of mainstream American society, fuelwood is still a necessity for heating and cooking. As a matter of long history and economic reality, they generally consider it a traditional right to gather wood themselves on ancestral lands now on national forests.⁹ So local ire was again provoked in 1998, according to local activist and forester Max Córdova, when the Carson National Forest started charging for fuelwood gathering permits in response to pressure from environmental groups. "We had a free dead-and-down permit here," he says. "The environmental community raised hell over that it



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educated as well, and they need to go into communities. . . . had there been education in place before the environmental groups came in and put restrictive access to the mountains, or 'critical habitat,' as they called it," there might have been less conflict. "Today, personally, I don't like environmental groups, because they don't seem to want to communicate with us."¹¹

Gene Kuykendall laments that the Forest Service "claims they haven't got any money for timber marking or timber administration here, and they won't put any money into it because the minute they do, they get an appeal. The environmental groups, I feel, are the ones that are tying their hands, my hands. I will say this, the environmental groups, when they started, had some really fine points, but they carried it out to this zero-cut thing." Kuykendall continues, "I've always tried to work hand-in-hand with the environmental community, with everybody, you know, but sometimes I found that it gets to the point to where you can only give so much and then you have to stop. But, I'm always concerned about our land. I'm concerned about it now because we are losing habitat for the elk. . . . We're losing our trees out there to disease, and we're also losing to fire."

Max Córdova, George Ramírez, Ben Kuykendall, and others I interviewed for this project represent fairly moderate perspectives toward the environmental community, maybe because they have some experience working in that arena and have gotten to know enough environmentalists to see beyond stereotypes. But many other rural community members feel no such

charity and don't mince words in their contempt for what they see as meddling outsiders. This does not make them anti-environmental, only anti-environmentalist — an unfortunate but important distinction. They have a rooted and intimate knowledge of the land that has supported them for centuries and care about its health as passionately as anyone.

Despite the ongoing conflicts and endless divisive rhetoric, it's my experience that many environmentalists and land-based interests in northern New Mexico share fundamental environmental values, and the same is very likely true in other places. "I'm an environmentalist, I'm just not a crazy environmentalist," says Kuykendall. "I think everybody in the world is an environmentalist. I don't want to ruin that out there. Anybody who works with the land is that way." Several local initiatives are currently underway in which environmentalists and rural communities are working collaboratively, if cautiously, to bridge some of the gaps, recognizing a healthy environment and healthy rural communities as dual priorities. This is not some impotent watered-down compromise, not McCloskey's bogeyman of collaboration, but an approach that acknowledges and respects a natural environment that we all value, the communities in which we all live, and the unique cultural and political history of this region. And it is an approach with a fundamental sense of justice and inclusiveness at its heart.

Some are calling this new consensus the "radical center." It is radical only because it flies in the face of the politics of divisiveness we've all come to accept

"I think that [environmentalists] need to be educated as well, and they need to go into communities. . . . had there been education in place before the environmental groups came in and put restrictive access to the mountains, or 'critical habitat,' as they called it," there might have been less conflict. "Today, personally, I don't like environmental groups, because they don't seem to want to communicate with us."

as business as usual. To the chagrin of some of the ideologues out there, it's also radical because it works and is making a difference in the health of the land.

Workable Reform?

There is no argument that U.S. Forest Service timber policies are outdated and sorely in need of reform. No argument that big timber companies have taken advantage of below-market timber sales to pad their profits, and indifferently destroyed landscapes and ecosystems in the process. But big timber sales and big timber companies are not the only game in the forest.

Simply throwing a thou-shalt-not blanket policy over the problem tosses out the baby with the bath water, as the saying goes. It ignores the many examples of successful, sustainable, small-scale woodcutting operations that benefit both forest health and local economies. It ignores the impact such a policy would have on forest-dependent rural communities, which in northern New Mexico constitute one of the richest and most unique enclaves of human experience and culture in North America. Calling for an end to all commercial logging on national forests does not constitute workable or well-considered reform of federal timber policy.

In response to those who support the ECL initiative, and its legislative version known as the *National Forest Protection and Restoration Act of 1997* (the McKinney-Leach Bill, the latest version of which is H.R. 1494, 2001), Patrick Moore, a founding member of Greenpeace, says simply, "They are

wrong, and their plan would result in a great deal of harm to the environment and economy they seek to protect. . . . A single-minded, preservationist approach across the entire public estate is wrongheaded because it fails to address the complexity of multiple benefits derived from forests and trees."¹²

Max Córdova explains the same thing from a local perspective. "Zero-cut, which proposes to stop all commercial logging on public lands, makes no sense here in northern New Mexico, where overstocked forests desperately need to be thinned and where forest products provide for the needs of community people who have always depended upon these resources for their livelihoods."¹³

I don't want to second guess the democratic process, but it's very possible that many of those Sierra Club members who voted in favor of the ECL initiative in 1996 believed they were voting purely and simply to end corporate welfare and corporate abuse of national forests (I was a member at the time and I think I might have voted that way myself). Framing the question in the simple terms of "ending commercial logging" leaves no options but yes or no, and over the broad scope of national forest abuses, "yes" is the right answer. Sierra Club members were not asked, however, whether the Sierra Club should advocate an end to all "abusive" commercial logging, or "ecologically destructive" commercial logging, or "corporate welfare" logging. They were not given the choice of supporting sustainable, community-based forestry operations, or asked whether the Sierra Club should advocate *for* logging or



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woodcutting that is shown by good science to benefit forest health, commercial or not. And they were not asked whether an ECL position should consider case-by-case issues of environmental justice and social and economic equity. If the question were framed in a different way, it's likely the result would have turned out differently.

Definition Problems

Max Córdova related the following story about broader environmental values when I asked about the commercial versus non-commercial question.

"Maybe that's the biggest issue that we're facing: How do we de-commercialize the issue to where it's not an issue of 'is it commercial, is it not commercial?' 'How much money did people make off it?' Last year, one of the areas that we had worked was really thick. . . . I met this guy and he was walking barefooted through the forest that we had actually restored. . . . He says, 'Well, Max, you know, I just went through chemotherapy and I come to this area to rehabilitate myself. It's such a beautiful area. You know, I feel so good coming here.'

"And, for me, it gave me great pleasure, because that area [had been] really thick with trees, you couldn't even walk through it and there was nothing growing on the bottom. And only the work of the people got this area to where it was something that this man actually enjoyed. I wanted to tell him,

'Well, it wasn't like this when we first got started.' But to me, that's the biggest thing I've gotten out of that. This is one of the value-added things that came out of it. This guy was actually rehabilitated, rehabilitated himself just through walking through the area."



Córdova has won both the Innovations in American Government Award and the Hammer Award for his innovative forest stewardship work with the La Montaña de Truchas woodlot. La Montaña has created a wood bank to provide a secure supply of essential fuelwood, taken on large-scale forest restoration contracts, and, as the largest employer in the village with 30 employees, has provided a much needed boost to the local economy. It is by definition, however, a "commercial" operation.

The restrictive definition of the word "commercial" has complicated the issue. The 2001 version of the McKinney-Leach Bill stipulates that wood removed from national forests, even from restoration or fire treatments,

Effects of thinning and prescribed burning on an area near Truchas.
(Photo courtesy of Courtney White.)

is “not for private or public *commercial* gain” and “may be provided for personal *noncommercial* uses . . . or for

other public *noncommercial* uses” (emphasis added).¹⁴

We all know the conventional dictionary definition of commercial: “Of, pertaining to, or engaged in commerce.”¹⁵ In this context, that means any transaction involving the exchange of money or goods or services for natural resources, or any activity that produces

revenue. Does “commercial” then include barter transactions? This type of traditional exchange is still prevalent in *Norteño* villages, as local woodcutter George Ramírez explains. “One thing about us and wood is we barter. We don’t normally all the time get cash. . . . I’ll trade fifteen cords for a truck. Or I’ll trade ten cords for a cow.” Ramírez is chairman of Las Humanas Cooperative, an association of woodcutters and other traditional resource users in the Manzano Mountains southeast of Albuquerque.

We don’t know what’s “commer-

cial” and what’s not, and the policy as promoted by various environmental organizations offers no unified definition. The Southwest Forest Alliance calls it a myth that “Conservation organizations are opposed to any timber industry that would make money from logging on public lands.”¹⁶ But some organizations are holding fast to a strict interpretation.

While it’s clear that activists want to stop publicly subsidized clearcutting and other ecologically unsustainable practices, it’s not so clear that they intend to stop the many small-scale thinning and restoration and stewardship operations around the West. Whether or not they are “commercial” has nothing to do with ecological health, good forest management, conscientious stewardship. The absolutist approach, well-intentioned though it might be, has yet to show any solid scientific evidence that ending all “commercial” logging or woodcutting would improve forest health.

Based on my research, as well as my experience as a northern New Mexico environmental activist, I would make the case that environmentalists should *support* those operations that enhance local economies while helping restore forests. That is the kind of stewardship ethic and sustainable rural economy we should be encouraging, not hindering.

There is no adequate single word we can simply substitute for “commercial” to distinguish forestry practices we might support from those we do not support. I suggest that more than whether or not it turns a profit, we need to look at scale, ecological sustainability, and the more complicated issues of



Gene Kuykendall.



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intent, ethics, and a sense of responsibility and stewardship. It is patently unfair and totally inaccurate to lump together the largely subsistence economy and long-term stake of local communities with the market-driven capitalist economy that has no stake but the transparent short-term goal of profit.

A distant relative of mine through marriage runs a family logging and milling operation north of Taos. For public relations reasons he asked that I not use his real name, so he is referred to throughout this report by the pseudonym Gabe Casados. "Poor people are just trying to get by, couldn't cut it all if they tried," he says. Even though his is a relatively large operation by local standards, he says a big timber company will cut in five days what he cuts in a year.¹⁷ Logger and community activist Ike DeVargas states it clearly. "[M]ajor environmental groups like the Sierra Club . . . refuse to recognize the difference between a multi-national organization such as Duke City Lumber Company and a small operation like [locally-owned and operated] Compañía Ocho."¹⁸

Attempting to pin down a definition of "commercial," at least one group has proposed ending all *corporate* commercial logging. But that word poses just as much confusion as "commercial." Almost all of the small-scale community-based woodcutting programs in northern New Mexico are incorporated for tax and business reasons, as are most non-profit environmental advocacy organizations. Conceivably, even non-commercial restoration contractors, or volunteers

from environmental groups, could be "corporate." When most people use the word or talk about corporate welfare, we have a good idea that they mean something like multinational, multi-million dollar, conglomerate, for-profit, Wall Street-traded, industrial, large-scale, rapacious, ecologically unsustainable, environmentally irresponsible, etc. As with "commercial," we need to focus on the important and obvious distinctions between what we would support and what we do not support, rather than on oversimplified labels.

Chapter Seven of this report includes specific suggestions for redefining "commercial" to recognize those distinctions.

Troublesome Words

"Logging" is a red flag word to most environmentalists. Of the six men I interviewed for this project, all of them making a career of some kind by cutting wood, only two call themselves loggers. I purposely used the word in an attempt to desensitize it, but the other four were adamant that they practiced "woodcutting," "care of the mountains," "forest stewardship," "restoration," "community forestry," not logging. Nonetheless, they all do it for money, to make a living, which by strict definition makes it commercial. The defining distinction that one and all made clear is that "logging" involves harvesting what is known as sawtimber to be milled and sold as lumber. All labels aside, it's important to consider the possibility that even some of those operations that log and mill sawtimber might also fall within the parameters of local, small-scale, and sustainable.

"The only thing that I would say is that I wish that we could get together and start working together — Forest Service, producers, and the environmental community — so we could manage our forests down here so we will not lose it. We are in desperate need of doing some really good management out there in order to keep our forests, so we can have it for future generations."

"Sustainable" is another one of those troublesome words. What do we mean by "sustainable development"? Or "sustainable forestry"? Or "sustained yield"? Like many things, it depends on who is using the term and to what end. The term "sustainable development" has been appropriately criticized in recent years, not only because it is so vague, but because it has been thoroughly coopted by such pro-industrial development interests as the International Atomic Energy Agency, the World Bank, and proponents of massive hydroelectric dams. To those folks, it is just another term for technological "progress," and doesn't necessarily have anything to do with environmental responsibility.¹⁹

In this report, "sustainable" will be used exclusively in terms of sound ecological practice and carrying capacity, embracing the core value of "intergenerational equity, providing for current economic use while assuring the productivity of the land for future generations."²⁰ Using resources sustainably is not about maximum sustainable yield, but about what serves the land best, about thinking long term instead of short term, about living within our ecological means in a way that we can continue indefinitely.

The traditional forestry ethic among many small-scale loggers and woodcutters in northern New Mexico is about exactly this kind of sustainability. "It keeps itself going forever and ever," explains woodcutter Manuel Gurulé. "Sustained throughout the years, not just for the next year or two, but it's for generations and generations."²¹ Gurulé lives in the village of Vallecitos

at the edge of the Vallecitos Federal Sustained Yield Unit, set aside in 1948 for the express purpose of providing income for poor, forest-dependent local communities through sustained timber harvest. Sustainability is a concept he understands and believes in through on-the-ground practice.

George Ramírez says, "I look at the Mountain — and I'm sincere on this — as a sacred area, because it sustains life. It's a very fragile ecosystem. We've seen very destructive management practices in the past." He believes that applying traditional local ethics to forest management will provide for long-term health and sustainability.

Another *Norteño* woodcutter I interviewed declined to be identified, so will be known throughout this report by the pseudonym Louie Salazar. To him "sustainable" means, "Just keep it going, keep it going. We don't go from here just to destroy the forest, you know. . . . we know what to do in the forest to keep the forest nice."²²

Fourth-generation logger Gene Kuykendall expresses the common concern that an absence of forestry management, implied in such things as the ECL initiative, is not sustainable and will lead to ecological predicaments down the road. "The only thing that I would say is that I wish that we could get together and start working together — Forest Service, producers, and the environmental community — so we could manage our forests down here so we will not lose it. We are in desperate need of doing some really good management out there in order to keep our forests, so we can have it for future generations. Otherwise, we're gonna lose it. . . . The

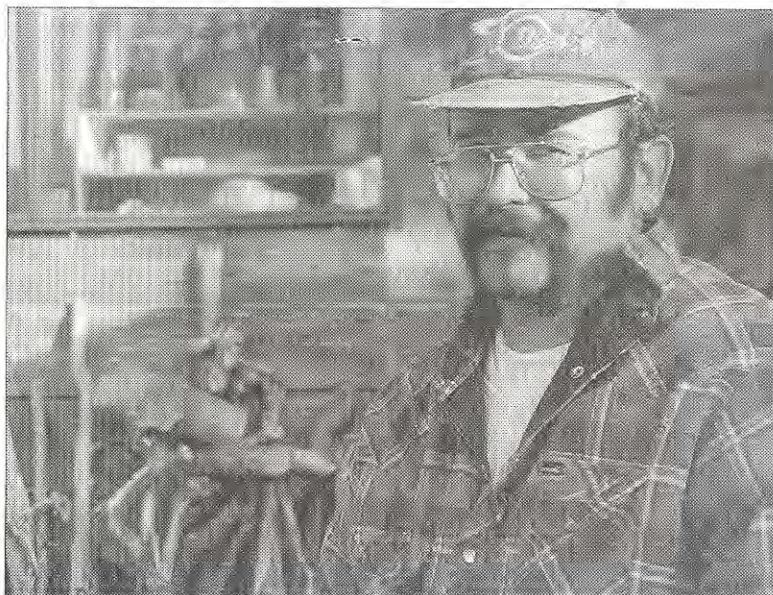


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way we are going, we are not going to have anything for our future generations, I can guarantee you. You just go out there and look at it. With the disease, fire — you look at Los Alamos, the fire there, there's not gonna be nothing there for a long, long time. And there could have been by management, good management.”

A rooted knowledge and deep respect for the natural world from centuries of cultural continuity underlies a powerful traditional land ethic in northern New Mexico. It's not perfect, and not everyone agrees on every aspect, but it provides a solid framework on which traditional forestry practices are built. Local concepts of sustainable management and traditional forestry practices are described in more detail in Chapter Four.

¹¹ This and all subsequent quotes and citations of George Ramirez are from an interview by the author on December



George Ramirez.

Notes

¹ Arellano 1997, p. 36.

² NFPA 2000.

³ Talberth and Moskowitz 1999.

⁴ See Carey 2001; Raish 2000a; Varela 1994 for more on this issue.

⁵ McCloskey 1996 quoted in Carey 2001, p. 15

⁶ Varela 2001, p. 231.

⁷ Varela 2001.

⁸ Cartwright 1995.

⁹ Raish et al. 1997a.

¹⁰ This and all subsequent quotes and citations of Max Córdova not otherwise cited are from an interview by the author on January 23, 2001.

20, 2000.

¹² Moore 1998, p. A5.

¹³ From a public statement by Max Córdova, August 1999.

¹⁴ U.S. Congress 2001, Sec. 7(k)(3).

¹⁵ *The American Heritage Dictionary of the English Language* 1979.

¹⁶ SWFA 2003.

¹⁷ This and all subsequent quotes and citations of Gabe Casados (pseudonym) are from an interview by the author on January 7, 2001.

¹⁸ From a public statement by Antonio (Ike) DeVargas, August 1999.

¹⁹ Athanasiou 1998.

²⁰ Committee of Scientists 1999, p. 14.

²¹ This and all subsequent quotes and citations of Manuel Gurulé are from an

interview by the author on December 18, 2000.

²² This and all subsequent quotes and citations of Louie Salazar (pseudonym) are from an interview by the author in December 2000.

Chapter Two

Making Environmental Justice Whole



One of the most unique enclaves of culture and tradition in the U.S. quietly persists in the rural communities of northern New Mexico and southern Colorado. In terms of political and cultural history, this region is the northernmost extension of the vast Latin American geography that stretches south to Tierra del Fuego. Even into the high-tech information age of the new millennium, a land-based Indo-Hispano village culture thrives here against all odds.

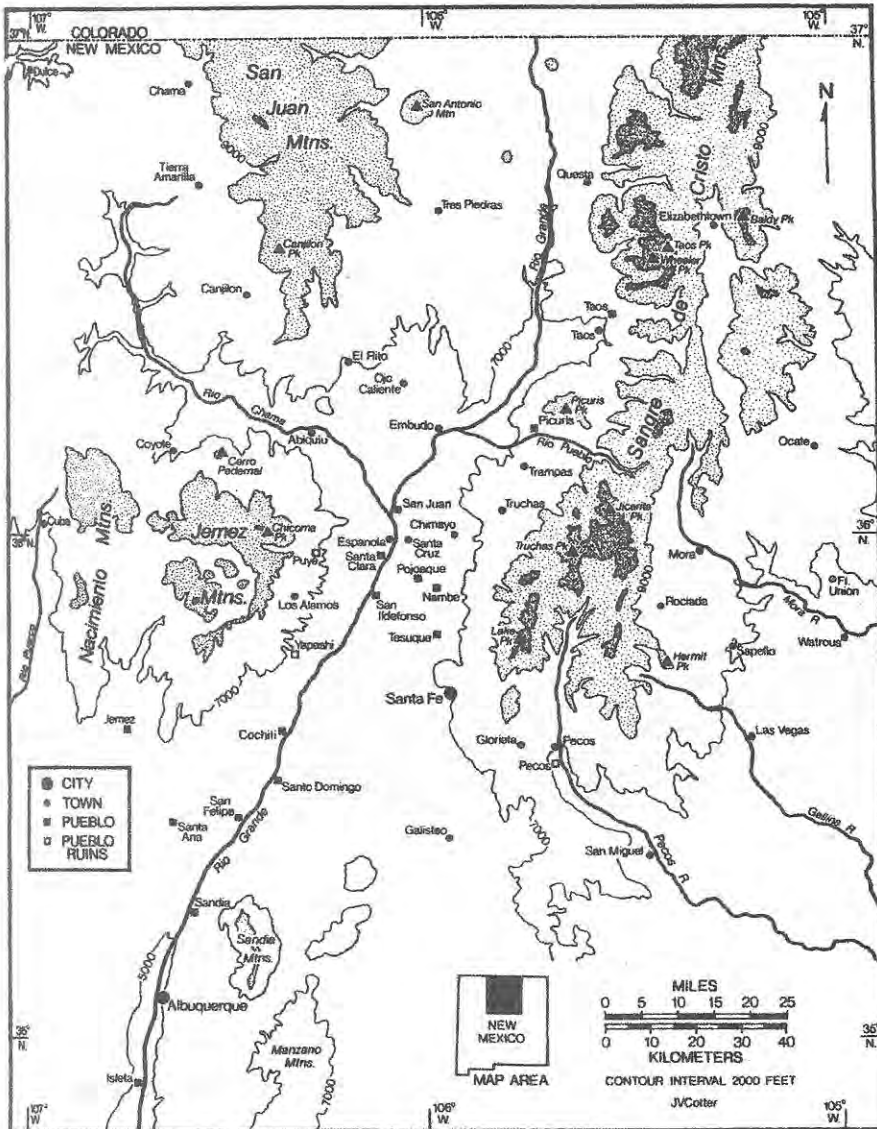
For over four centuries, these isolated ranching and farming communities have endured the rigors of frontier life in the farthest corner of the Spanish kingdom, generations of

raiding by nomadic tribes, rebellions, wars and conquest, the vagaries of weather, dispossession of community lands, and desperate poverty. Beyond simple survival, this distinctive culture remains a dynamic and defining presence today. After generations of continuity and adaptation, rural villagers have acquired a powerful native sense of belonging, a rooted knowledge and reverence for their homeland, that has become rare in the modern world.

Though rich in culture and history, local Hispanos have not shared in national economic prosperity throughout most of the twentieth century. Even while the United States enjoyed the strongest economic boom in its history

"It is important for the poor and people of color, and for those whose allegiance is to them, to enter this debate to urge that social and economic justice and democracy be established as measures of sustainability as valid as clean air, clean water or recycled paper products."

— Catherine Lerza, Defining Sustainable Communities¹



Map 1. Landforms and settlements of north central New Mexico.

in the late 1990s, New Mexico remained the poorest state with the highest rate of "food insecurity" in the nation. And the north-central counties – largely rural, agricultural, and Hispano – are among the poorest in the state.²

Perhaps the most important piece of the story, and one that makes northern New Mexico unique in this country, is

the inescapable fact that many of the local "public" lands discussed in this report, controlled now by the U.S. Forest Service and Bureau of Land Management, were once community-owned land grants set aside by the Spanish and Mexican governments to provide basic natural resources for local residents. They have been dismantled and lost over the last hundred and fifty years through what has been called "a history of chicanery," readily facilitated through the machinations of the U.S. legal system, but rightful ownership remains an open question.³ Impoverished rural families still rely on the meager economic buffer provided by traditional access to federal lands. Further restricting or eliminating that access to basic resources would have a devastating economic effect on already struggling local families,

hastening the unraveling of centuries of continuity of one of the most unique cultures on the continent.

Justice for All

During the last decade, the environmental movement has been forced to recognize the fact that people of color and the poor have been left out



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of the dialogue about environmental issues and often fall through the cracks of environmental regulations. While we were busy worrying about the pressing problems of dwindling wildlands, dammed, over-appropriated and polluted rivers, and threats to biodiversity, poor people got poorer and continued to bear the brunt of toxic industry.

In 1990 the Albuquerque-based SouthWest Organizing Project shook things up with a powerful letter to what was known as the "Group of Ten" big national environmental organizations, including the Environmental Defense Fund, Environmental Policy Institute/Friends of the Earth, Izaak Walton League, National Audubon Society, National Parks and Conservation Association, National Wildlife Federation, Natural Resources Defense Council, Sierra Club, Sierra Club Legal Defense Fund, and The Wilderness Society. Signed by 105 activists from throughout the country, the letter charged the Group of Ten with ignoring environmental problems in communities of color and with ethnic and class discrimination within their organizations.⁴

The now legendary letter stirred things up for a while. A few organizations responded commendably by broadening their approach to at least consider environmental justice issues, established environmental justice committees, tacked the phrase "environmental justice" onto their mission. But thirteen years later little has really changed. Just last year the National Hispanic Environmental Council and several other organizations represent-

ing people of color raised the very same issues in a protest against an environmental diversity conference sponsored by one of the Group of 10, justifiably charging that "wealthy, white, green groups do not speak for or represent people of color" and that "green group actions perpetuate 'environmental Jim Crow'."⁵

Some environmental groups make a genuine effort, others just pay it a little lip service, but in general environmental justice tends to fall to the bottom of the priority list. The constant demands of urgent environmental crises and conflicts, playing to narrow constituencies and to the media, usually take precedence, with environmental justice reduced to a byproduct at best. And some populations and some issues continue to fall through the cracks, as they always have.

Public health impacts from environmental conditions or hazardous waste, or discrimination in the implementation and enforcement of environmental policies, are unquestionably critical problems, but environmental justice is about more than that. It is also about widening the discourse on environmental issues to include the perspectives, values, and concerns of the usually ignored populations of people of color and the poor. Ben Chavis, one of the founders of the environmental justice movement, ten years ago said, "Environmental racism is [among other things] the history of excluding people of color from the leadership of the environmental movement."⁶ These days you don't have to be poor or ethnic to suffer the effects of environmental injustice. It is also about enormous power imbalances in

"Just last year the National Hispanic Environmental Council and several other organizations representing people of color... protest[ed] against an environmental diversity conference... justifiably charging that 'wealthy, white, green groups do not speak for or represent people of color'..."

policy decision making that have more to do with class divisions, what you do for a living, and whether you're urban or rural.⁷

"An anthropologist suggested that there will soon be no nature to protect unless we address social justice issues to share the world's resources more equitably. Protecting natural ecosystems will become a moot point, in other words, if the poor of the world continue to be left farther and farther behind, struggling for their slice of a shrinking pie of natural resources. As one person put it, 'In the metaphor of a rapidly sinking ship, we are all in the same boat, and the people of color are closest to the hole.'"

In 1992, then Sierra Club Executive Director Michael Fischer called for "a friendly takeover of the Sierra Club by people of color," and optimistically declared that "the struggle for environmental justice in this country and around the globe must be a primary goal of the Sierra Club during its second century."⁸

Despite all the best intentions that may be at work, a *de facto* exclusion unfortunately still holds true. My own situation is one example: working on environmental issues throughout New Mexico — a state where the Anglo population is still a little less than half — I am often the only person of an ethnic or working class background at meetings of dozens of other environmentalists. In my experience, a limited perspective and generally narrow range of discourse within the environmental movement is one obvious result of that lack of diversity.

Embracing the concerns of people of color and the poor, including rural communities dependent on natural resources, would expand that perspective and that discourse to include the issues of social and economic hardships they face every day. What do these issues have to do with the environment? The mainstream environmental movement resists the idea that protecting the environment has anything to do with social justice and social change. But in the broader, long-term perspective, fundamental social change, not lawsuits and confrontation, is what will save the

planet. An anthropologist at a recent conference I attended suggested that there will soon be no nature to protect unless we address social justice issues to share the world's resources more equitably.⁹ Protecting natural ecosystems will become a moot point, in other words, if the poor of the world continue to be left farther and farther behind, struggling for their slice of a shrinking pie of natural resources. As one person put it, "In the metaphor of a rapidly sinking ship, we are all in the same boat, and the people of color are closest to the hole."¹⁰

Even worse, the world's poor are often blamed for environmental destruction and the fundamental problem of runaway population growth. "But it takes no special math to figure out that the 10% of American families who control 72% of this country's wealth are probably responsible for consuming a huge percentage of the world's resources on their own, with very little assistance from the poor," says Catherine Lerza of the Defining Sustainable Communities project of the Tides Foundation. The American middle class certainly consumes its fair share as well.

"The mainstream environmental movement has long been averse to dealing with issues of race, class and gender," says Lerza. Dealing with these issues is not the dreaded coalitional approach, says Eric Mann, "but rather strategy — for no environmental theory can be devoid of an economic theory and no economic theory can avoid issues of class structure and class conflict." Claiming neutrality on issues of race and class, often heard in



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environmental circles, by default perpetuates the injustices of existing economic and social arrangements, says Mann.¹¹

Law professor Eileen Gauna frames environmental justice as “a challenge that all should be concerned about in a society that is committed to the ethical precept of basic fairness.”¹² Providing support and economic and social safety nets for those less privileged has long been part of our national culture. In the context of this report, access to public lands resources is part of the safety net that keeps some families from destitute poverty or displacement to some poor inner-city *barrio*. And assuring access to forest resources represents no compromise to the health of the land, but rather an opportunity to improve the land and strengthen local capacity for sustainable stewardship.

Beyond issues of basic justice is the problem that keeping traditional practices and local voices out of the debate does not make for workable conservation, says María Varela. “We cannot afford to have ecosystems taken care of by weekend or summer stewards, ivory tower researchers, corporate conservation warriors, and urban-based policy makers,” she says. “Sustainable environmentalism develops people to use the best of ancient sciences and meld them with the best of modern technology. It values and takes great stock in the observations and experiences of rural people who live on and watch the land.

It creates partnerships from within and outside the community in order to bring the best thinking possible to solve problems. But the result is awesome to envision.”¹³

Environmental justice and environmental protection cannot be whole, then, unless they address social and economic justice as integral components, embrace a diversity of people and



perspectives to solve our environmental problems, and recognize that cycles of environmental abuses, social inequity, and poverty are inescapably interconnected and perpetuated by the same rampant forces of our global political economy.

Environmental Justice at Work

Concrete examples of applying broader principles of environmental justice can be found right here in northern New Mexico. The Sustained Yield Forest Management Act of 1944 was part of the New Deal effort to stem



La Vida Floresta

rampant poverty, but was in effect a pioneering effort in environmental justice many decades before the term even existed. It designated five forest units throughout the country and mandated for those units not only sustainable forest management, but management that provided income for poor, forest-dependent local communities. Perhaps because of the long and continuing tradition of natural resource dependence in this region, of the five units initially established only one in Oregon and the Vallecitos Unit on the Carson National Forest in northern New Mexico still exist. Despite the ongoing struggle to stay the course through legal fights and shifting federal regulations, Vallecitos still aspires to its original dual mission.¹⁴

The Rio Grande Land project was another New Deal era attempt at revitalizing the economic lives of Pueblo and Hispano villagers in northern New Mexico by expanding their recently lost land base. Under the Land Program of the Federal Emergency Relief Administration, from 1934 through 1942, the project acquired about one million acres of marginal lands that were set aside for the exclusive use of these communities for subsistence livestock grazing.¹⁵ A small percentage of those areas have since been converted to Indian reservation land but the rest remain federal lands with no special access provisions.

A third example is the return of 48,000 acres of Forest Service land to the Taos Pueblo Tribe in the 1970 Blue Lake Act. Taos Pueblo's traditional possessory right to their sacred Blue Lake and surrounding lands had been protected under Spanish and Mexican

rule and should have been honored under the 1848 Treaty of Guadalupe Hidalgo, along with Hispano land grants, but the agency illegally seized the area in 1906. After generations of struggle by Taos Pueblo to regain this land, Congress, with Richard Nixon's strong support, finally recognized that it had been wrongfully taken and restored it to the tribe for traditional and religious use.¹⁶

Environmental justice issues and remedies can take many forms. In the case of the Sustained Yield Forest Management Act, the remedy was to address the economic needs of struggling, forest-dependent communities by assuring long-term access to traditional-use forest resources (though clearly more needs to be done). With the Rio Grande Land project, the remedy was attempting to reinvigorate local economies by partially restoring the land base that had been unjustly pulled out from under local communities. With Blue Lake, it was correcting a historic injustice that had been committed against the Taos Pueblo people by returning the land to its rightful owners.

The question of public lands logging and woodcutting in northern New Mexico stirs up the very same thorny questions as these three examples, but also offers the same opportunities to set things right. On the other hand, an ECL policy in this area would have an impact on a predominantly poor, Hispano population as negative as any discriminatory environmental policy that threatens the health and welfare of disenfranchised



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populations in any other context.

Beyond the narrow economic consequences, denying local communities traditional-use access to fundamental natural resources would undermine the social and cultural fiber that holds together this centuries-old Hispano culture. Following a guiding principle of broad-minded, holistic environmental justice, we should choose instead to remedy historical injustices and foster greater social and economic equity by assuring access to public lands resources for some of the poorest members of our society. And through the community-based approach to sustainable forestry described throughout this report, foster greater ecosystem health while we're at it.

"Given the key role they are fated to play in the politics of an ever-shrinking world, it is past time for environmentalists to face their own history, in which they have too often stood not for justice and freedom, or even for realism, but merely for the comforts and aesthetics of affluent nature lovers," says social ecologist Tom Athanasiou. "They have no choice. History will judge greens by whether they stand with the world's poor."¹⁷

Notes

- 1 Lerza 1994, p. 2.
- 2 Census Bureau 2003, Census 2000, Summary File 4; Nord et al. 1999.
- 3 Ebright 1980; Meyer 1998.
- 4 Sierra Club 1993; SWOP 1990.
- 5 NHEC 2002, pp. 1 & 3.
- 6 Chavis, October 1991, quoted in E. Gauna 2000, p. 4.
- 7 McLain and McDonald 2000.
- 8 Sierra Club 1993, p. 51.
- 9 Pramod Parajuli, speaking on "Endangered Peoples" at a Society for Applied Anthropology Conference, "Constructing Common Ground: Human and Environmental Imperatives," Tucson, AZ, April 21, 1999.
- 10 Decohn Ferris, September 1991, quoted in J. Gauna 2000, p. 6.
- 11 Lerza 1994, p. 1 & 4; Mann quoted in Lerza 1994, p. 2.
- 12 E. Gauna 2000, p. 4.
- 13 Varela 1995, p. 9; see also McLain and McDonald 2000; Raish 2000b.
- 14 David Benavides quoted in *La Jicarita News* 2001, p. 6.
- 15 Dinwoodie 1986.
- 16 Gordon-McCutchan 1995.
- 17 Athanasiou 1998, p. 304.

Chapter Three

The National Forests and Local Poverty



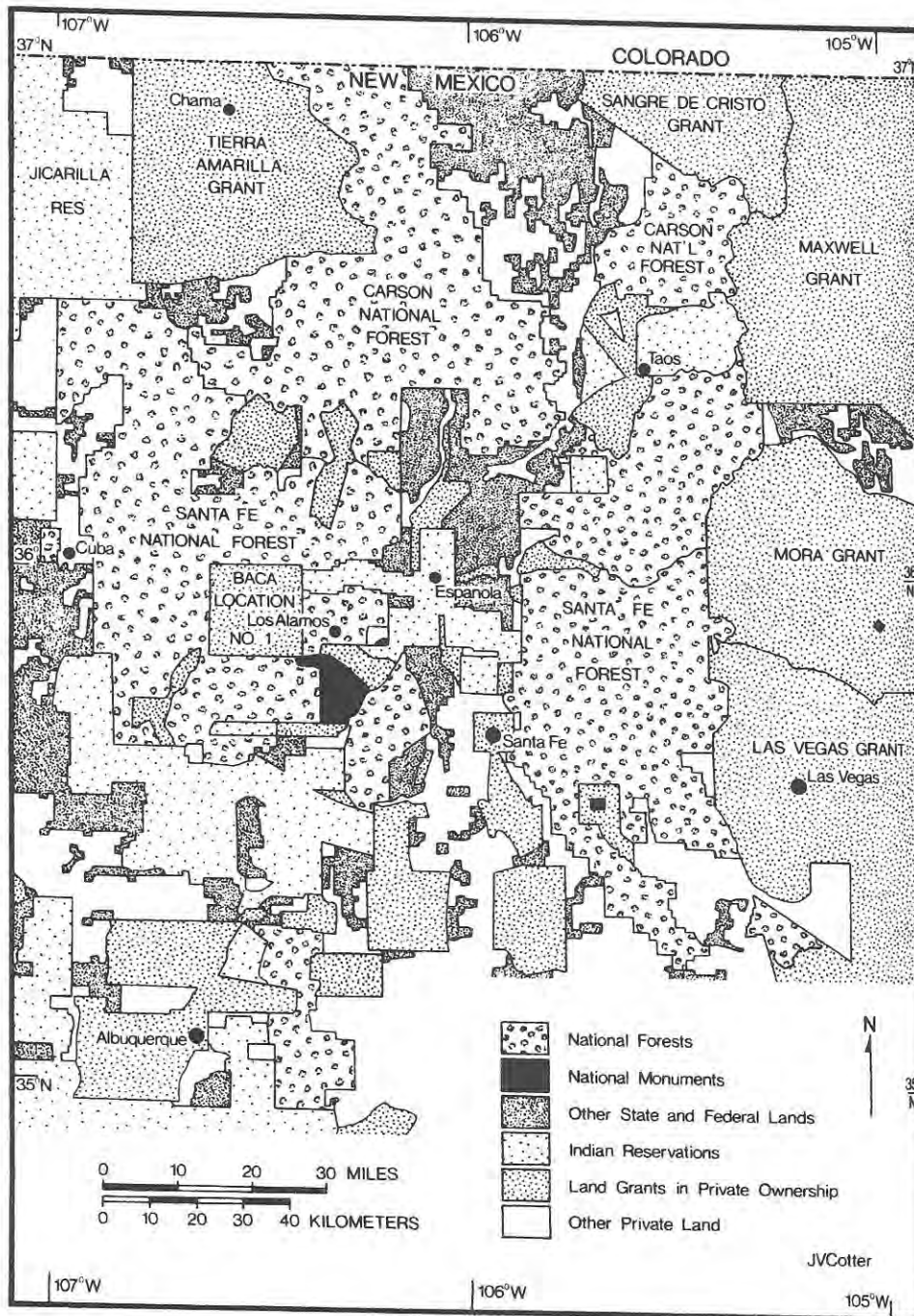
With all its warts and controversies, the National Forest System remains a mostly respected, or at the very least accepted, institution throughout the country. But in the long memory of northern New Mexico, it is a recent interloper into a centuries-long history of forest use, making for a unique and often tense relationship between the national forests and local communities.

Stopping just short of acknowledging traditional-use rights, Regional Forest Supervisor William Hurst officially recognized that unique history and relationship in a 1972 Northern New Mexico Policy directive. He hoped to provide a means by which “the

Forest Service as an organization can contribute most effectively to many of the economic and social needs of the people of Northern New Mexico. . . . [T]he uniqueness and value of the Spanish American and Indian cultures in the Southwest must be recognized and efforts of the Forest Service must be directed toward their preservation,” he wrote. “Their economic well-being is often tied closely to resources of the National Forests and the manner in which they are utilized. The fact that 22 percent of two northern National Forests, the Carson and the Santa Fe, were at one time grant lands emphasizes the close ties local people have to the land.”² Hurst’s memo culminated half a

“The forested mountains, usually part of the village communal lands or ejidos, were used for grazing, hunting, fishing, and obtaining firewood. . . . When the Forest Service acquired these lands, these use rights were not acknowledged. The loss of grazing lands and the resources of the mountain forests brought poverty to a large number of Spanish-American village people.”

— Sociologist
Clark Knowlton¹



Map 2. Land ownership in northern New Mexico.

dozen years of high-profile protests, violence, and political turmoil regarding Forest Service policies in northern New

Forest Service jurisdiction and increasingly restrictive policies that made it evermore difficult for rural communi-

Mexico.

In 1967 several members of the Alianza Federal de Mercedes (Federal Alliance of Land Grants) staged an armed raid on the Rio Arriba County courthouse in Tierra Amarilla in an attempt to free some companions they felt had been wrongly arrested. The year before, the Alianza, under the leadership of Reies Lopez Tijerina, had organized marches, meetings with the governor, public protests, and acts of civil disobedience. All this to bring attention to their cause regarding access to traditional communal grant lands, or *ejidos*, now lying mostly under U.S.



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ties to make a decent living.³

"For unknown reasons, the U.S. Forest Service made certain policy decisions that impacted savagely upon the impoverished Spanish American rural communities dependent upon the U.S. Forest lands, once part of their community land grants, for their spring, summer, and fall grazing," writes Clark Knowlton. "The impact of these decisions against which the Spanish American appealed in vain were extremely harsh. Living standards fell and malnutrition increased.

Families were forced out of ranching and farming and many faced the dismal necessity of migrating to urban areas in search of employment."⁴

The Alianza movement succeeded insofar as Washington directed the Southwest Region of the Forest Service to study the problem and come up with solutions. A 1968 report by Jean Hassell called "The People of Northern New Mexico and the National Forests" was the first step in that process. The Hassell report, which is what guided the regional forester's memo four years later, outlined 99 policy recommendations to better serve local communities. The upshot was that local Forest Service personnel needed to familiarize themselves with local history and culture and work to remove bureaucratic barriers to national forest resources for traditional land-based communities.

Regarding wood and timber resources, the Hassell report notes that, "Next to the grazing of domestic livestock, use of timber products, primarily as posts and firewood, is mentioned by the people of northern

New Mexico as an area of great need.

Unlike grazing, there are some opportunities to help the people with their timber needs without damage to the resource. . . . Firewood, vigas, and posts are necessities of life for many in northern New Mexico." It goes on to suggest developing interest in smaller material, offering small pockets of salvage and other timber to small operators only, reducing fees for personal and commercial use, and offering free access to piñon-juniper areas.⁵

A 1988 Santa Fe National Forest Plan paraphrases Hurst, stating that "in the unique cultural environment of northern New Mexico . . . our mission . . . includes: contributions to the economic and social needs of the people of northern New Mexico; strengthening of the rural economy of the region and encouraging the enrichment of traditional cultural values; recognition that the way of life of many rural residents is, and will continue to be, directly affected by the management of Forest lands. . . ." A 1997 Carson National Forest planning document discusses managing in a way that will help locals "remain on their ancestral lands, within the comforts of their traditional culture. . . along with the healthy forest that will ensure their future." This will be accomplished by helping "local residents to establish their own [small-scale] wood products business."⁶

Despite all planning rhetoric and ongoing attempts to address local issues since Hurst's 1972 policy directive, the Forest Service has been slow to change the way it views and works with local land grant communities. Beyond that, the

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larger and more fundamental problems that spurred the Alianza protests in the sixties remain.

A Backwater Economy

While the abject poverty and economic crisis that spawned the New Deal era of the 1930s may be ancient history to most Americans, northern New Mexico still carries that legacy.

and Hispano – includes some of the poorest counties. Counties north of Santa Fe are designated by the U.S. Department of Agriculture as “Persistent Low Income Counties,” which means that income here has remained in the bottom one-fifth of all rural counties in the nation since 1939. And hunger stays close on the heels of poverty. Over 15 percent of New

Table 1
Socioeconomic conditions in north-central New Mexico, 1999

Population	Poverty Rate	Below 50% of Poverty Level	Per Capita Income	Unemployment Rate	High School Graduates (b)	College Graduates (b)
Mora, Rio Arriba & Taos Counties (a)	22.2%	9.9%	\$14,235	5.7%	74.0%	18.9%
Hispanics in Mora, Rio Arriba & Taos (a)	22.0	8.9	12,208	5.8	66.8	11.0
Anglos in Mora, Rio Arriba & Taos (a)	20.2	11.7	22,148	3.3	91.5	38.4
New Mexico	18.4	7.8	17,261	4.4	78.9	23.5
Hispanics in New Mexico	23.7	9.4	12,045	5.3	64.4	10.8
Anglos in New Mexico	9.9	4.1	23,967	2.8	90.6	34.3
United States	12.4	5.6	21,587	3.7	80.4	24.4

Source: Census Bureau 2003, Census 2000.

a = Combined averages for the three counties.

b = For individuals 25 or older.

North-central New Mexico emerged in the 1930s as a distinctly poor region, and has remained an area of severe and chronic poverty to this day. As recently as 1970, nearly half the region’s families remained below the poverty level. Nationwide only 11 percent of Americans fell into that category.⁷ That same year more than 60 percent of local homes still lacked modern plumbing facilities. And unemployment has averaged around 20 percent in the area since the sixties.⁸

In what is today the poorest state in the U.S., the north-central part of the state – predominantly rural, agricultural,

Mexico households suffer from what is known as “food insecurity,” meaning “limited or uncertain availability of nutritionally adequate and safe foods. . . .” New Mexico ranks highest in the nation in that category and third in plain old hunger.⁹

This section uses socioeconomic statistics only for the counties of Mora, Rio Arriba, and Taos. While obviously not comprehensive, they are certainly representative of broader economic conditions in rural northern New Mexico. Keep in mind that these numbers also include a sizable pocket of relative affluence in the arts and



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tourism-oriented town of Taos.

In 1999, these three counties had a combined poverty rate of 22.2 percent. Compare that to a statewide rate of 18.4 percent, which is bad enough, and a national rate of 12.4 percent. Even worse, New Mexico ranked dead last for children in poverty, at 26 percent.¹⁰ These are dismal figures, but poverty is even more prevalent among Hispanics.

Looking at the breakdown by ethnic origin, 22 percent of Hispanics in the three counties and 23.7 percent in New Mexico were living in poverty, compared to 20.2 percent and 18.4 percent, respectively, for their Anglo neighbors ("Hispanic or Latino" and "White alone, not-Hispanic or Latino" are the official categories used by the U.S. Census Bureau).

Other economic indicators tell the same story. Per capita income in 1999 for Mora, Río Arriba, and Taos was \$14,235, compared to \$17,261 for New Mexico and \$21,587 nationwide. Looking again at ethnic origin, per capita income for Hispanics in the three counties was only \$12,208, nearly \$10,000 less than for Anglos at \$22,148.

Unemployment in 1999 was 5.7 percent in the three counties, 4.4 percent in New Mexico, and 3.7 percent nationwide. The ethnic breakdown shows the same stark class divide between Hispanics and Anglos in the region.

Slim educational opportunities keep pace with the region's struggling economy. Local rancher Joe Torres is proud of the fact that he's been successful enough to send all four of his

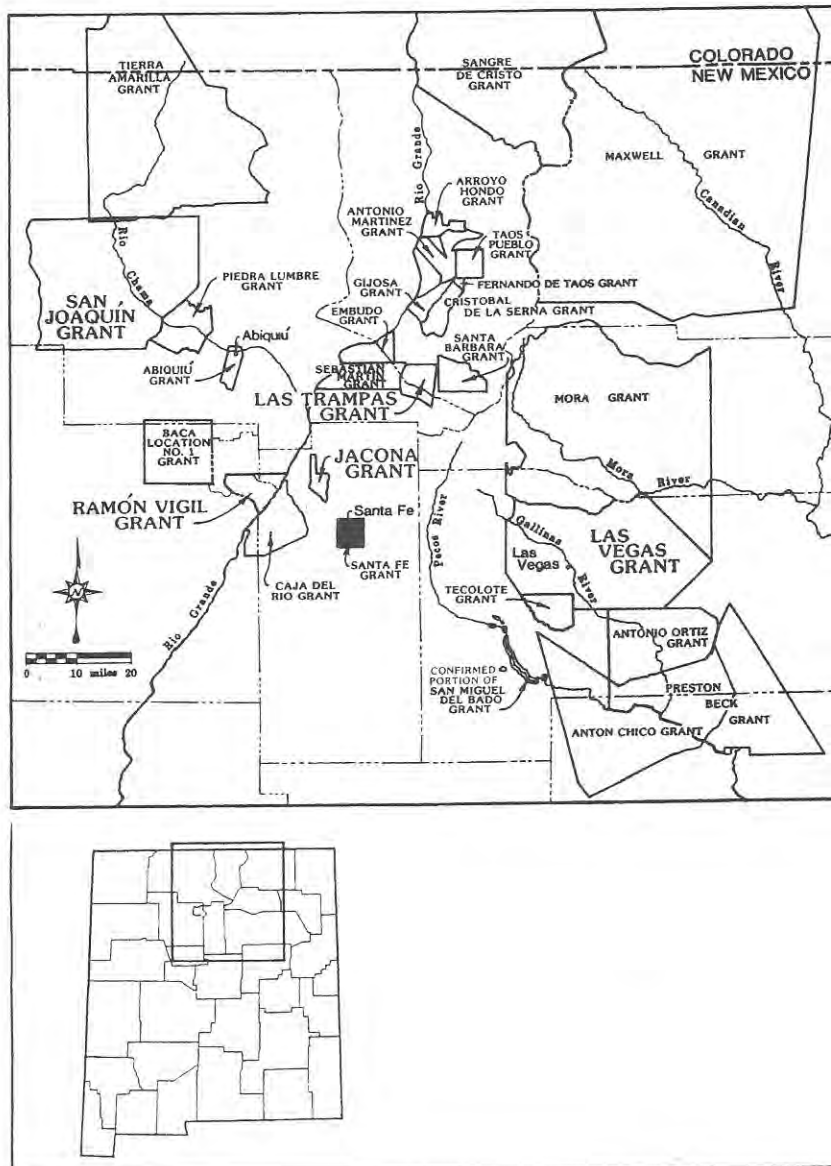
children to private schools and on to college.¹¹ Considering the chances for local Hispanics to get an education, it is certainly an accomplishment to be proud of. In the three northern counties of Mora, Río Arriba, and Taos in 1999, only 66.8 percent of Hispanics over age 25 graduated high school, and only 11 percent made it though college. Compare that with figures for the Anglo population in the three counties, in which 91.5 percent graduated high school and 38.4 percent graduated college.¹²

Any way you spin the statistics, New Mexico is a very poor state, the rural northern counties are even poorer, and the local Hispano population is among the poorest of the poor (see Table 1). In this marginal economy, removing any support by way of access to national forest resources could easily make the difference simply between staying afloat or sinking.

Legacy of Injustice

There is plenty of debate about the reasons for chronic local poverty, but some causes are clear. Northern New Mexico has been an economic backwater since the early Spanish days, isolated on a far frontier from economic centers in what is now Mexico. Though localized subsistence economies once endured, if not occasionally flourished, the region has never been rich in natural resources. Carrying capacities are comparatively low, and today the state's farmland is valued the lowest in the entire country.¹³ For centuries, though, rural communities controlled a large enough land base through the communal lands, or *ejidos*, granted by the Spanish or

"Any way you spin the statistics, New Mexico is a very poor state, the rural northern counties are even poorer, and the local Hispano population is among the poorest of the poor. In this marginal economy, removing any support by way of access to national forest resources could easily make the difference simply between staying afloat or sinking."



Map 3. Land grants in north central New Mexico.

Mexican government, that they could meet all their basic needs. These extensive commons provided ample grazing, access to timber, firewood, game, and control of watersheds on which their sophisticated irrigation works relied. Beyond the legally deeded *ejido* lands, villagers held equally valid use rights for the vast *ejidos realengos*,

lands controlled by the sovereign that were roughly equivalent to today's public domain.¹⁴ Into the early part of the twentieth century, during the waning years of free access to *ejido* resources, many villages remained largely self-sufficient.

"Cooperation prevailed," writes Charles Briggs. "A large group of people would harvest one person's fields, then those of the neighbor, and so on. The people also operated in accordance with the principle of charity in their daily lives, helping out those who were in need. . . . The people were strong, because they ate the good food of the land. . . . Their herds and the wild game of the uplands provided meat. The sheep brought a double harvest — first wool then the lambs."¹⁵ Though never prosperous, villagers remember those days of modest self-sufficiency with pride.¹⁶

Northern New Mexico has remained apart from the economic mainstream since becoming a territory of the

United States. Writers, researchers, and local villagers make a convincing argument that an essentially colonialist relationship with the U.S. continues still today to be part of a political-economic dynamic that perpetuates economic dependence and local poverty.¹⁷ Certainly the loss of



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communal land grants was a catalyst, if not the major reason, for chronic poverty and displacement in the region.¹⁸ While some writers dispute whether keeping hold of the *ejidos* would have really provided more social, economic, or ecological stability than what has been true under Forest Service management, it's hard to argue against the idea that legal ownership of those lands would provide a greater measure of stability, wealth, access to capital, and a higher standard of living than most land-based villagers enjoy today.¹⁹

Sociologist Clark Knowlton puts the land grant story succinctly into a nutshell. "The establishment of national forests in New Mexico also resulted in the abrogation of Spanish-American property rights. Much of the land now included in the National Forest System in Northern New Mexico was once part of the many Spanish and Mexican land grants in the region. The inhabitants of the numerous Spanish-American mountain villages located their settlements in valleys and along streams wherever valley floors were large enough for village sites and irrigated farm plots. The forested mountains, usually part of the village communal lands or *ejidos*, were used for grazing, hunting, fishing, and obtaining firewood. . . . When the Forest Service acquired these lands, these use rights were not acknowledged. The loss of grazing lands and the resources of the mountain forests brought poverty to a large number of Spanish-American village people."²⁰

Against a broad historic backdrop in northern New Mexico, the war with

the United States a century and a half ago and the subsequent loss of land grants is recent memory. Many of my neighbors in the area, both activists and old-timers in the villages, can quote chapter and verse from the 1848 Treaty of Guadalupe Hidalgo, which promised to recognize and protect all pre-existing land grants and other property rights of former Mexican citizens. At frequent public meetings, villagers bring out ancient parchment documents and ask in bewilderment why these titles and traditional-use rights have not been honored. The more resolute insist they live in "occupied Mexico."

George Maestas, a rancher in Rodarte who runs eight cattle on ancestral lands now within the Carson National Forest, feels that "Traditional uses are . . . being challenged and threatened by environmental groups without any acknowledgment that these communal grant lands were often taken from the communities they were intended to benefit by surreptitious, unscrupulous and even fraudulent means."²¹

Through a process of outrageous legal manipulations, various fraud, and blatant theft — a history that has been impressively well-documented by a small army of historians, justice advocates, lawyers, and social scientists — over 80 percent of community *ejidos* were eventually lost to local villagers.²² Poor and uneducated rural Hispanos fell easy prey to unscrupulous lawyers, realtors, speculators, and even some of their own wealthy Hispano neighbors. Rather than assisting their new citizens in confirming and protecting their legal property rights, as prescribed by the Treaty of

"Traditional uses are . . . being challenged and threatened by environmental groups without any acknowledgment that these communal grant lands were often taken from the communities they were intended to benefit by surreptitious, unscrupulous and even fraudulent means."

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Guadalupe Hidalgo, the Surveyor General's Office and later the Court of Private Land Grant Claims, with the bottomless financial and legal support of the U.S. government, took it as their job to invalidate as many land grant claims as possible. Land grant heirs were guilty until proven innocent of illegally squatting on the land they had occupied for centuries.²³



Acequia.

In one astonishing example, the unquestionably valid Las Trampas Grant, comprising about 28,000 acres of heavily timbered land, was dismembered and sold out from under local villagers through a "suit for partition." This peculiar legal mechanism allowed any land grant "shareholder" to sue for their share of the *ejido*, which was obviously contrary to the original intent and spirit of a community-held commons. If physically separating that piece of land from the rest was not practical, then the entire grant was sold by court order and the rest of the shareholders compensated

in cash. As was often the case, this particular swindle took place on the Las Trampas without the knowledge of most of its residents. It sold in 1903 for about 60¢ an acre and ended up in the hands of a private lumber company that estimated it held 85 million board feet of sawtimber.

Over a decade later, however, the title remained in dispute and the new owners were forced to negotiate quitclaim deeds with every villager on the grant. The villagers were probably right in thinking that this was as good a deal as they were likely to get, and many probably did not understand exactly what it was they were signing. Eventually all did sign away their interest in the *ejido*. In exchange they received deeds to the tracts of land that held their homes and agricultural fields and the right to continue using those former *ejido* lands for grazing and wood gathering. But no one knew to read the fine print. The *ejido* use-right agreements had been written to make sure that they could not be transferred to any subsequent owner. The land was sold in 1926 and, through a three-party swap, was immediately turned over to the U.S. Forest Service. Despite the litany of obvious injustice and deception, and despite appeals by local villagers as recently as 1971, the use-right agreements for forest resources that they believed were negotiated in good faith have not been honored since.²⁴



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In 1906, two years after the Land Grant Court closed, all unconfirmed grant lands had become part of the public domain and were proclaimed by President Theodore Roosevelt to be national forest. In Rio Arriba and Taos Counties, this consolidated nearly half the land mass, including every mountain watershed surrounding the villages, under federal control. Today the federal government controls over half the land in those two counties, at least 22 percent of that former community grant lands and an even greater area former *ejido realengo* commons. Only 13.7 percent of Mora County became federal land, but that small portion includes the most desirable timbered mountain lands in the county.²⁵ Writing about environmental justice, Jeanne Gauna, Co-Director of the SouthWest Organizing Project, says that of the many historic injustices against local Hispanos, this loss of traditional lands is perhaps the most harmful.²⁶

The small plots of farmland that local families were left with after their land grants vanished were subdivided through inheritance into progressively narrower strips called *tiras*, or long lots. Individual land holdings, which were often the only significant assets local families owned, eventually became too small to support a family with even the most ambitious subsistence agriculture.²⁷ Local Hispanos clearly ended up with the short end of the stick. With a marginal land base once the land grants disappeared, no capital or access to capital to make investments or improvements, and suddenly required to pay taxes for the first time,

villagers were simply run over by the foreign economy and legal system.

Complicating the transition even further, the local concept of land as community property was fundamentally at odds with the U.S. concept of individually owned private property. Equally mystifying was the more abstract concept of public domain — land set aside for the public at large, even for people who would

never set foot on it. With a limited understanding of what must have seemed bizarre concepts of land tenure, local people did not understand it, or did not believe it, when their *ejidos* began to slip away.²⁸ Through this process, the U.S. conquest of New Mexico, at least in terms of economic subjugation, was complete. And it set into motion the cycles of poverty, unemployment, and undereducation still at work today, a process well documented by



bioregionalist Peter van Dresser in what he called the "Rural Syndrome."²⁹

Exhibiting the humility common in rural Hispano culture, local rancher Andie Sanchez is among the most soft-spoken, thoughtful, and considerate people I have ever met. Yet he has firm opinions, if no malice, regarding the land grant history. His perspective reflects a broader community sentiment. "I think us natives, we've got the privilege to graze it, to work our own back yard. Because it was our ancestors', and it was handed down to us as a land grant, by Guadalupe Hidalgo, to use as a family support."³⁰

The late Aparicio Gurulé was a very conservative rancher who lived in Cuba, New Mexico. He didn't think much of militant leaders in the land grant movement and made no claim to any land grant himself, but he said simply, "they were robbed of their land, they should get it back."³¹

The process of dispossessing locals of their land grants was such a heartless bureaucratic exercise carried out by lawyers and speculators in far away places, that in some cases villagers did not know for many years that the land was no longer theirs. In the meantime, whether legally *ejido* or national forest, villagers for generations continued to treat the landscape around their villages as a *de facto* local-use commons. Even after their loss became clear, and disempowered locals had little choice but to choke it down, they have continued to exercise traditional land-use rights on surrounding forest lands.³²

Ejidos were granted also to Pueblo Indian tribes under the same system and legal authority as that for Hispano

villagers, but while the U.S. was inclined to view most Pueblo grant lands as sovereign, Hispano grants were up for grabs. There is no argument that the Pueblos are the first nations of this region and have every right to the land they now control, and more. But after four centuries on the land and a shared legacy with the Pueblos of intermingled blood, culture, and history, rural Hispanos might well have as legitimate a claim to possessory traditional-use rights.³³

Vallecitos Federal Sustained Yield Unit

In one attempt to correct the injustices of the past and restore local economy and land, Congress in 1948 established the 73,400-acre Vallecitos Federal Sustained Yield Unit on the Carson National Forest. The Sustained Yield Forest Management Act of 1944, under which the Vallecitos Unit was created, was one of many New Deal era efforts to stem rampant rural poverty on the heels of the Great Depression. It was a visionary piece of legislation for its day, which sought to mitigate the impacts of excessive grazing with a well-managed timber harvest that would improve both ecological and economic conditions for poor, forest-dependent communities. The Act was very clear in its broad-minded intent: "In order to promote the stability of forest industries, of employment, of communities, and of taxable forest wealth, through a continuous supply of timber; in order to provide for a continuous and ample supply of forest products; and in order to secure the benefits of forests in maintenance of

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water supply, regulation of stream flow, prevention of soil erosion, amelioration of climate, and preservation of wildlife.”³⁴

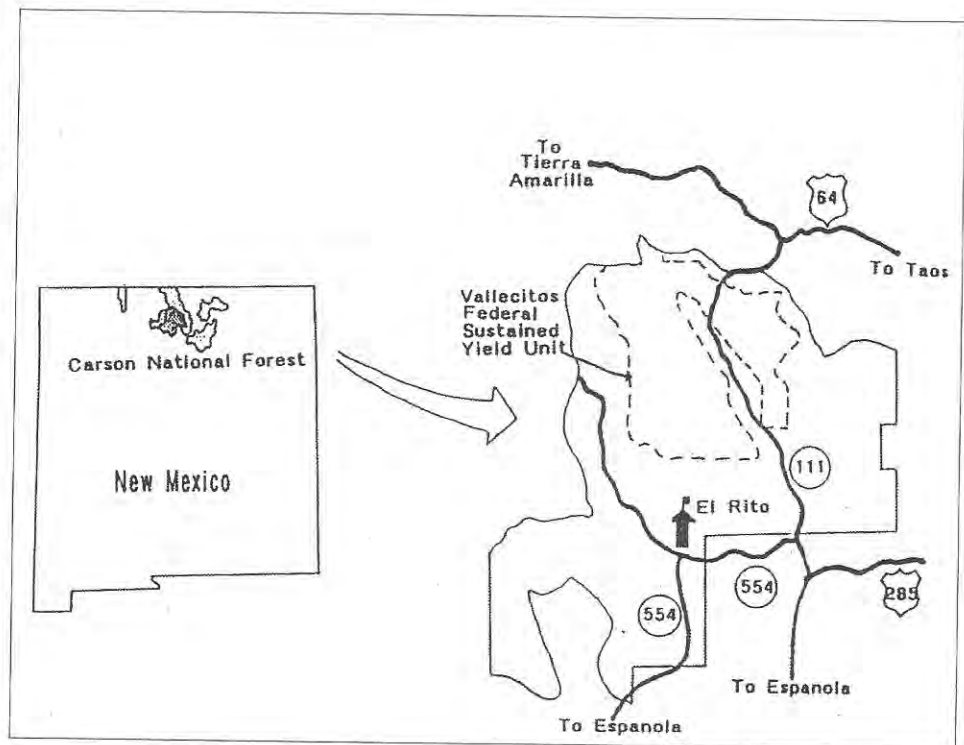
Like most other national forest use in northern New Mexico, the Vallecitos is just a continuation of a long history of *ejido* use. The area was held by local communities under the Vallecito de Lovato and Petaca Land Grants until invalidated by the Court of Private Land Claims.

Although its original mandate and the potential for ecologically sustainable timber harvesting still exist, the Forest Service has not managed the Vallecitos in the best interests of the local communities it was intended to benefit. Economic conditions in those communities remain relatively unchanged in over 50 years and timber management has favored large corporate industry over small-scale local operators.³⁵

The Forest Service decided early on that a single large operator to both cut and mill timber would best serve the Vallecitos Unit. Economic benefits for the local community would trickle down in the form of wage-labor jobs. The first two designated operators – non-Hispano companies from outside the area – ran afoul of contracts that required them to hire local labor, and

had a combined tenure of only five and a half years. With no operator on the unit for up to 15 years at a time timber harvest went idle, and so did the local economy. Local Hispano businesses repeatedly petitioned the Forest Service to be selected as designated operators, but were just as repeatedly turned down. The reason for refusing these requests was that the local operators were too small to achieve the industrial-scale management the Forest Service envisioned. Though the culture of the agency has certainly evolved over the years, it appears also true that local villagers historically were treated with a very paternalistic and racist attitude.³⁶

In 1972, Duke City Lumber – a subsidiary of a London-based multinational corporation – took it on. Like the previous operators, Duke City was



Map 4. Vallecitos Sustained Yield Unit.

"With sincere environmental concerns, locals had more than once challenged agency decisions and opposed destructive logging practices, new roads that would damage watersheds, and what they felt to be unsustainable increases in timber harvest."

accused time and again by both residents and the Forest Service of ignoring contract requirements to hire locals and support local communities, but they nonetheless held onto the contract for 22 years. For apparently economic reasons, having already cut the best and the biggest and the most easily accessible timber, compounded by a depressed timber market, Duke City bailed out in 1996. Tighter restrictions resulting from the 1993 endangered species listing of the Mexican spotted owl certainly made the decision easier, and also provided a convenient scapegoat.

Meanwhile, local Hispanos had become increasingly frustrated with management of the Unit. The Forest Service typically made decisions for the community in a top-down fashion rather than in anything resembling collaboration with the community. The occasional small sales granted to local operators always cost more per board foot than what Duke City paid. With sincere environmental concerns, locals had more than once challenged agency decisions and opposed destructive logging practices, new roads that would damage watersheds, and what they felt to be unsustainable increases in timber harvest.

Vallecitos resident and woodcutter Manuel Gurulé says, "We've been fighting the amount of board feet cut since way back. These environmentalists are Wannabes. I remember one year they were trying to . . . raise [the timber harvest] to seven-point-something million board feet per year for the old Duke City that was here at the time. And we opposed that. . . . because we didn't see, we couldn't see how seven-point a

year was gonna sustain itself." At a public meeting in 1999, Ike DeVargas, a community activist and president of the local logging business La Compañía Ocho, spoke out against a proposed timber sale, saying, "We do not want the Forest Service to turn this area into a tree farm." He says that Compañía Ocho is the only logging company in northern New Mexico to ever tell the Forest Service, "We don't want that much timber. That's too much!" For a brief period in the early nineties, DeVargas and other local logging interests set aside their suspicions to explore common ground with environmentalists and created a short-lived coalition around the idea of ecologically sensitive and sustainable logging practices. That experiment failed in the end due to fundamental ideological differences and intransigence on both sides.³⁷

Tired of the trickle-down crumbs of the timber industry and tired of being left out of the dialogue, DeVargas's Compañía Ocho and Madera Forest Products Association filed a discrimination lawsuit in 1994 to get direct and equitable access to timber. Passions ran hot on all sides. In the midst of a parallel legal fight over the Vallecitos' La Manga Timber Sale, and in direct violation of a standing injunction, someone felled several old-growth ponderosas in apparent protest. Finally, a 1996 out-of-court settlement stipulated that from then on only residents of local communities could qualify as operators on all current and upcoming timber sales. Today, 27 of those local operators are approved for small-scale, non-sawtimber contracts



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and nine are approved for the larger sawtimber cuts. But the situation is far from ideal.

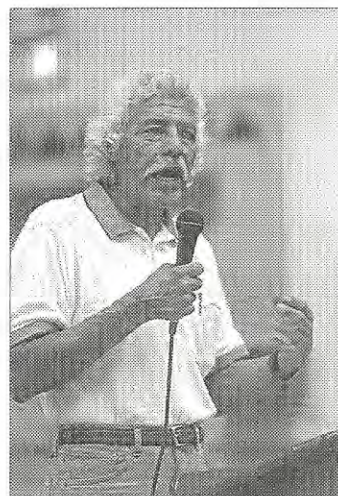
Even after locals won access and began cutting trees, construction of roads to remove the timber was stalled by a combination of logistical and financial constraints and bad timing. Later, a grim litany of political debacle, financial struggles, and community disputes left the local mill standing idle. As a result, 60,000 to 100,000 board feet of timber lay rotting on the ground at La Manga.³⁸

DeVargas laments the failure of the La Manga project. "I don't want people to think that we were just a bunch of mean-spirited people who went out to the woods to cut old growth and to let them rot in the woods just to bug Sam Hitt and the environmental community," he says.³⁹ But the challenges that undid *Compañía Ocho* and confront other local operations are all too common in rural northern New Mexico.

The fundamental concept of a sustained yield is not lost on local villagers who know well the rhythms and limits of resources in their own backyard. Throughout the Vallecitos Unit's history, locals have framed their struggle to retain access to traditional local resources in the terms of sustainability. Their hope then and now has been to promote a balance of social, economic, and ecological sustainability through the careful management of natural resources they recognize as critical to their survival.⁴⁰

Over its 50-plus year history, the Vallecitos Federal Sustained Yield Unit has certainly had its problems.

Today every timber sale is routinely challenged by environmental groups and financial obstacles persist for local loggers and woodcutters. But with the 1996 settlement clearing the way for small-scale local operators, the door is finally open for economic benefits to flow directly to the local community, as intended by the original legislation.⁴¹ Despite its problems, the Vallecitos Unit still holds promise and potential as a model of small-scale sustainable timber harvest that contributes to justice, equity, and the vitality of both land and communities.



Ike De Vargas. (Photo courtesy of Eric Schultz.)

Notes

- 1 Knowlton 1970, pp. 1070-1071.
- 2 Hurst 1972, pp. 1 & 3.
- 3 Baker et al. 1988; deBuys 1985; Knowlton 1970; Nabakov 1969.
- 4 Knowlton c. 1978, pp. 3-4.
- 5 Hassell 1968, pp. 26-28.
- 6 USFS 1988, quoted in Gunderson 2001, p. 10; USFS 1997, pp. 3-5.
- 7 deBuys 1985, p. 211.
- 8 Carlson 1990, pp. 100 & 108; Stevens 1994, Table X, p. 47, Table XII, p. 53.
- 9 Nord et al. 1999, p. 2, Table 1, Figure 3, Figure 5; Varela 2001, p. 230.
- 10 Kids Count 2003; "Poverty" is an arbitrary category used by the U.S. government to infer these statistics, but one recent study determined that the income level on which poverty statistics are based is about half of what it should be (National Public Radio Morning Edition, July 24, 2001).



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- 11 From an interview by the author on August 14, 2000.
- 12 Unless otherwise noted, all above socioeconomic statistics from Census Bureau 2003, Census 2000, Summary File 4.
- 13 Carlson 1990, p. 123.
- 14 Briggs 1987; Cutter 1978; deBuys 1985; Knowlton 1970; c.1985; Kutsche and Van Ness 1981; Meyer 1998; Tyler 1989; Van Ness 1987.
- 15 Briggs 1987, pp. 229-230.
- 16 deBuys 1985, pp. 196-198.
- 17 Athanasiou 1998; Nichols 1996; Peña and Martinez 1998; van Dresser 1972. See deBuys 1985, p. 274-275 for his argument that a socio-political perspective alone does not explain it all, and that these issues should be analyzed also through an ecological lens.
- 18 Knowlton 1970; c.1978; c.1985; Nostrand 1992; van Dresser 1972; Van Ness 1987.
- 19 Carlson 1990; deBuys 1985.
- 20 Knowlton 1970, pp. 1070-1071.
- 21 This and all subsequent quotes of George Maestas are from a letter to the author dated August 26, 2000.
- 22 See Briggs 1987; Carlson 1990; Cutter 1978; deBuys 1985; Eastman et al. 2000; Ebright 1987; 1994; Knowlton 1970; c.1978; c.1985; Kutsche and Van Ness 1981; Meyer 1998; Nostrand 1992; Rodriguez 1987; Tyler 1989; Van Ness 1987; Wright 1997; and many more.
- 23 Cutter 1978; Knowlton c.1985.
- 24 deBuys 1985; Ebright 1994.
- 25 Eastman et al. 2000, Table 2, p. 533; Hurst 1972, p. 2; Rodriguez 1987, p. 340; Tyler 1989.
- 26 J. Gauna 2000, p. 5.
- 27 Carlson 1990; Nostrand 1992.
- 28 deBuys 1985; Kutsche and Van Ness 1981; Tyler 1989.
- 29 van Dresser 1972.
- 30 This and all subsequent quotes of Andie Sanchez are from an interview by the author on August 10, 2000.
- 31 From an interview by the author on August 9, 2000.
- 32 deBuys 1985; Ebright 1987; 1994; Kutsche and Van Ness 1981; Van Ness 1987; Westphall 1983.
- 33 T. Atencio 1987; M. García 1993.
- 34 Sustained Yield Forest Management Act of 1944, Sec. 1, quoted in Committee of Scientists 1999, p. 55.
- 35 Carey 2001; Henderson and Krahll 1994; USFS 1997; Wilmsen 1997.
- 36 Carey 2001; Wilmsen 1997.
- 37 DeVargas quoted in Carey 2001, p. 12; DeVargas 2002, p. 25; Henderson and Krahll 1994; Wilmsen 1997.
- 38 Maxwell 2002a; 2002b.
- 39 *La Jicarita News* 2002, p. 7.
- 40 Wilmsen 1997.
- 41 Carey 2001; Winchester 2002.

Chapter Four

Sustainable Forestry



"All the good ideas coming out are basically ideas that are coming from the community. . . . A lot of times communities are not given credit for that new idea, especially when it comes to community forestry or forest restoration. . . . The name we have given to it is Traditional Science. It's science that has been

passed down generation to generation."

—Northern New Mexico weaver, woodcutter, and community activist, **Max Córdova**

Most resource use of any kind on northern New Mexico national forests is at a level of simple local subsistence. "The thing is, the whole community is in need of the wood products from the forest. A lot of people have to bring vigas (ceiling beams) for their homes, or fuelwood for survival, cooking a meal, or warming up," explains local resident Andie Sanchez.

These days what might once have been considered "traditional local use" has been unavoidably transformed by the modern market economy into small-scale "commercial." Where in a traditional economy villagers once gathered their own construction materials and fuelwood, or bartered for

it, now they sell it or buy it commercially. The mode of exchange has changed, but the scale, the need, and the use remain essentially the same.

Commercial sawtimber operations here are also small in scale compared to logging in other parts of the country.¹ "I do everything. I'm a lumberman, logger, sawmiller, I do firewood, I make board, wedges. I do everything myself and with my family," say Gabe Casados. He used a crosscut saw when he started cutting timber with his father at 14. Now in his seventies, with numerous scars visible on his face and arms from a lifetime in his chosen profession, Casados continues to work harder than most men half his age running a small but busy operation just

“Through about 1875, according to the Forest Service, local impacts on forest resources were minimal.”

to make ends meet. He says, “I work from sunup to sundown. I probably make 25 cents an hour sometimes. It’s just a living.”

Large-scale sawtimber logging in the area had a brief heyday for about a hundred years, but those days appear to be over. Meanwhile the centuries-old tradition of sustainable local woodcutting for fuelwood, building materials, and other basic resources has quietly endured and continues today in every village in northern New Mexico.

Logging and Local Wood Use

After centuries of subsistence-level timbering and wood use on local forests, it wasn’t until the 1880s that it turned into a for-profit industrial-scale enterprise and began to have serious ecological impacts. By then the capitalist U.S. economic system had largely replaced the older Spanish and Mexican systems, and railroad lines into the region expanded markets as well as the infrastructure and incentive to cut and sell more. Along with the new economy came a new Wild West boomtown mentality that replaced old Spanish strictures against overuse of resources and the traditional ethic and practice of restraint. And the land suffered.²

For centuries local Pueblo Indians had cut wood for construction of large permanent villages and for cooking and heating. When the Spanish began settling the area in 1598, they cut more wood for a wider variety of uses, but throughout the 250 years before the U.S. conquest, comparatively modest use of wood resources did not approach the annual growth rate of local timber. Land grant settlers used ponderosa

pine for furniture and buildings, Douglas fir for plows, corrals, and barns, piñon pine for vigas and saddles, juniper also for vigas, looms, and fenceposts, willows for irrigation works, cottonwood for kitchen utensils, and aspen for musical instruments. All these trees were also used as fuelwood, but the preference has been and continues to be for the hotter-burning and fragrant piñon and juniper. Blue spruce, Englemann spruce, limber pine, and white fir were not as useful and not as handy, growing at elevations higher than most villages. Though rural northern New Mexico is best known for its distinctive adobe architecture, wood construction was also common among early settlers. One geographer speculates that it’s possible this region has the greatest concentration of historic log buildings remaining anywhere in the U.S.³

Through about 1875, according to the Forest Service, local impacts on forest resources were minimal. Some evidence of early deforestation did exist, however, around the larger population centers of Albuquerque and Santa Fe. Obviously a smaller population generally left a much smaller footprint on the land, and there was little market incentive or demand for large-scale cutting, but we should recognize as equally important the cultural and economic traditions that discouraged excessive use or commercial exploitation.⁴

After 1880, timber cutting exploded into an entirely unprecedented and more destructive industrial scale. A 1952 report estimated that over 200 million board feet (one board foot equals one foot square by one inch thick) – an

annual average of 12.5 million board feet — of mostly clearcut timber were harvested off the Carson National Forest alone during the two and a half decades between 1880 and the establishment of the original Forest Reserve in 1906. Between 1906 and 1920, logging removed another 14.3 million board feet per year from the Carson. A boom in railroad ties, along with other market demand, pushed the industry to an average of 16.8 million board feet per year on the Carson between 1921 and 1925.⁵ I did not find timber cutting figures for the Santa Fe National Forest for this period, but it's safe to assume that it suffered the same scale of exploitation.

Logging slowed for the next decade to an average of 1.5 million board feet per year on the Carson. The Santa Fe National Forest, though only slightly more acreage than the Carson, has always been more productive and more heavily logged. During the same decade of 1926 through 1935 the Santa Fe had an average of 4.3 million board feet cut each year. The years 1936 through 1950 showed an marked increase in logging with an average of 14.4 million board feet per year on the Carson and 21.3 million board feet on the Santa Fe.

The Forest Service responded to what it recognized even at the time as unsustainable resource use by tightening restrictions between 1915 and the early 1930s. "The [Forest] Service had legitimate concerns about the depletion of forest resources by excessive logging and grazing," says legal historian Malcom Ebright. However, as is often the case, "... the limitations put into

effect took their toll mostly on the small operator who was least responsible for the problem. Large scale operators ... were hardly affected. ..."⁶ Of the 19 local companies harvesting timber on the Carson National Forest in 1952, 11 had little more than a family-sized workforce of ten or fewer people. On the other end of the scale, the Jackson Timber Company, which held the contract for the Vallecitos Federal Sustained Yield Unit at the time, employed a comparatively huge workforce of 62 people.

Demand for timber skyrocketed during the post-war home-building boom of the 1950s, and industrial logging proceeded at a furious pace. The Carson yielded 19.9 million board feet per year and the Santa Fe 24.6 million board feet during this period, while the Forest Service continued to systematically favor large sales to national timber interests over managing its resources at a smaller scale for the benefit of local villagers.⁷

One result of the devastating environmental impacts of that boom, Congress passed a series of laws, including the 1960 Multiple Use — Sustained Yield Act, intended to protect public lands from that scale of abusive exploitation in the future.⁸ The new laws might account for the very small drop in logging during the early sixties, with 15.5 million board feet per year on the Carson and 22.9 million on the Santa Fe, but heavy cutting continued seemingly undeterred from 1966 through 1990 at an annual average of 28.4 million board feet on the Carson and 45.9 million board feet on the Santa Fe.⁹

All the preceding historic logging

information is displayed in Table 2, but the unit of measurement can be confusing. MBF is a conventional measurement of volume that refers to thousand board feet, not million board feet, as one might mistakenly assume. For example, the figure of 83,799 MBF is interpreted as 83,799 X 1,000, or about 83.8 million board feet.

The Amalia Lumber Company logged on private land that had once been part of a land grant in northern Taos County, but the scale of the operation — it was the largest producing mill in all of New Mexico, Arizona, Colorado, and Texas between 1975 and 1985 — is an indication of the timber activity on public lands at the time as well. In the mid-seventies commercial timber cutting provided about 10 percent of manufacturing jobs in the state, but that figure had dropped to 6 percent by 1989. Timber cutting volumes on national forests in New Mexico similarly declined by over 91 percent between the mid-eighties and mid-nineties. Historically, almost two-thirds of New Mexico's mills and wood processing plants were associated with the Carson and Santa Fe National Forests in the north-central part of the state, and were major sources of employment in this otherwise economically depressed area. During the eighties and nineties, six of those small mills, along with one larger mill operated by Duke City, shut down.¹⁰

Throughout the booms and busts of the timber industry, with rootless lumber companies and mills coming and going like the itinerant spring winds, local Hispano villagers quietly continued their traditional use of the

old *ejidos*, with permits or without, taking out a few cords of firewood each year, cutting a few small logs for vigas, fenceposts, and other needs. "People have been using wood for hundreds of years, and it's not something that just started," says Manuel Gurulé. "There's a lot of uses for the forest, not just logging. Everything seems to say 'logging, logging.' Yeah, logging is some of it, but it's not all of it."

As recently as 1967, in the small village of Cañones near Abiquiú, New Mexico, 29 of 30 households used wood cookstoves. Even those with access to electric or gas stoves still preferred cooking with wood.¹¹

The small scale of local woodcutting didn't come close to wreaking the same ecological havoc as industrial logging, but certainly had its impacts. In the late sixties and early seventies, local piñon and juniper woodlands were decimated by voracious fuelwood cutting. The Forest Service had implemented a clearing program intended to increase grazing lands, and in effect declared open season on piñon and juniper. Well-intentioned but poorly designed initiatives attempted to aid impoverished local villagers by tapping into the expanding fuelwood markets in Albuquerque and Santa Fe. This particular exploitation was more a combination of misguided agency policy and market-driven capitalism than local resource use, but produced serious consequences nonetheless, and both the Forest Service and local communities learned hard lessons from that failed experiment.¹²

Current Scale of Wood Harvest

With the exception of George

Table 2
Carson & Santa Fe National Forests timber cut in MBF, 1921-2000

Five-year period	Carson total	Annual average	Santa Fe total	Annual average
1921-1926	83,799.00	16,759.80	NA	NA
1926-1930	6,722.00	1,344.40	9,751.00	1,950.20
1931-1935	7,973.00	1,594.60	33,669.00	6,733.80
1936-1940	32,758.00	6,551.60	85,371.00	17,074.20
1941-1945	30,158.00	6,031.60	154,242.00	30,848.40
1946-1950	26,662.00	5,332.40	80,216.00	16,043.20
1951-1955	143,985.00	28,797.00	105,832.00	21,166.40
1956-1960	54,606.09	10,921.22	140,495.27	28,099.05
1961-1965	77,360.81	15,472.16	114,272.62	22,854.52
1966-1970	121,283.07	24,256.61	264,318.34	52,863.67
1971-1975	181,034.34	36,206.87	208,642.66	41,728.53
1976-1980	144,999.27	28,999.85	197,008.03	39,401.61
1981-1985	115,195.75	23,039.15	223,331.45	44,666.29
1986-1990 (a)	146,614.44	29,322.89	254,804.95	50,960.99
1991-1995	45,215.45	9,043.09	86,275.14	17,255.03
1996-2000 (b)	47,351.00	9,470.20	37,860.66	7,572.13
Cumulative totals	1,265,717.22		1,996,090.12	
Cumulative averages		15,821.47		26,614.53

Sources: USFS 1952; USFS Region 3 records, 2001.

a = missing 1988; totals extrapolated from annual averages.

b = missing 1997; totals extrapolated from annual averages.

NA = Not available.

Ramírez and Las Humanas Cooperative who deal with the Cibola National Forest, all the woodcutters and loggers I interviewed for this report and all the community-based forestry projects I refer to involve either the Carson or Santa Fe National Forests. For the sake of simplicity and consistency, all the following information about timber

volume and numbers of permits and contracts are from the Carson and Santa Fe only. Many of the issues and the general principles and arguments in support of local, small-scale, sustainable operations certainly hold as true for the Cibola and other forests as for the Carson and Santa Fe, but I can't say whether the timber volume and permit

data are comparable.

From 1992 to 1999, total wood harvest on the Carson National Forest, including all commercial sawtimber and non-commercial personal use, has averaged 6.3 million board feet per

Dividing wood volumes into those categories, contracts on the Carson averaged about 2.1 million board feet per year and the Santa Fe averaged 2. These figures include small contracts that are primarily for local use. Personal-

Table 3
Number of woodcutting permits & contracts on the Carson & Santa Fe National Forests, 1992-1999

	Size	1992	1993	1994	1995	1996	1997	1998	1999	Average
Carson	Personal use	6,755	6,423	5,485	3,861	3,449	5,114	7,303(d)	6,873(d)	5,658
	Small contracts (a)	12	11	18	16	209	822	106	242	180
	Large contracts (b)	16(c)	11	14	10	2	4	11	19	11
	Total	6,783	6,445	5,517	3,887	3,660	5,940	7,420	7,134	5,848
Santa Fe	Personal use	6,570	5,604	8,420	6,844	10,127	9,048	7,650	9,340	7,950
	Small contracts (a)	1,594	2,145	1,482	4,641	3,092	4,195	3,844	1,800	2,849
	Large contracts (b)	189	120	13	309(c)	142	10	2	9	99
	Total	8,353	7,869	9,915	11,794	13,361	13,253	11,496	11,149	10,899

Source: Carson and Santa Fe National Forest records, 2000.

a = \$301-\$2,000 in value.

b = \$2,001-2 million board feet.

c = Includes one sale of 2-5 million board feet.

d = Carson National Forest began recording "dead-and-down" permits in 1998.

year. On the Santa Fe that figure is 7.6 million board feet. These figures come from a different source than those in Table 2 and were rigorously cross-checked and corrected for great accuracy, so they are not consistent with the raw USFS data used in that table (this calls into question the accuracy of the rest of the figures in Table 2, but it is nonetheless useful in showing historic trends). An important distinction to be aware of is the difference between contracts (usually commercial sales including sawtimber as well as other smaller diameter wood) and permits (usually for local personal use and some small-scale commercial).

use permits account for the majority of the volume at 4.2 million board feet per year on the Carson and 5.6 on the Santa Fe, or 66 percent and 73 percent respectively (see Figures 1 and 2).¹³

A different and possibly more useful measurement of benefits to local communities is the number of permits issued. We can guess that the number of permits might more or less reflect the number of families receiving the direct benefit of forest resources in the form of fuelwood, fenceposts, vigas, and other construction materials. During the nineties, the annual average number of personal-use permits per year on the Carson was 5,658 and on the Santa Fe

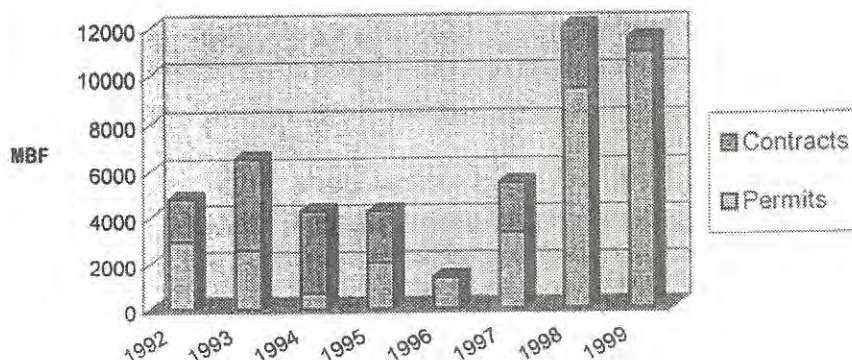
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7,950. In addition to these permits, timber managers on the Carson and Santa Fe National Forests make a strong argument for the fact that the material harvested under the Small Contracts category (valued at between \$301 and \$2,000 per contract) is mostly going to local communities. That adds another 180 to the Carson numbers and 2,849 to the Santa Fe (see Table 3).¹⁴

Looking at both volume of wood cut and number of permits and contracts, it's clear that the majority of logging and woodcutting on northern New Mexico national forests over the last decade is smaller in scale and for primarily local use, not for large-scale timber interests looking only to make their stockholders happy. One particularly important indication of that trend is the fact that between 1992 and 1999 there was only one sale of over 2 million board feet on each of the two forests.

Where do all these board feet of timber end up? Divide the annual number of permits and contracts into the volume cut on both forests during the nineties, and we see that an average 164,647 board feet per year went to each of the 110 large contracts while only 1,331 board feet went to each of the 16,377 permits and small local contracts. Besides the fact that smaller-scale local operations account for the majority of the harvest, it also appears

Figure 1: Total Volume Sold in MBF, Carson National Forest (1992-1999)



that they spread the benefits far more widely to many more people, presumably with fewer environmental impacts, than the larger operations which we know have adverse impacts.

A very appropriate and sustainable tradition of primarily small-scale local wood use continues in northern New Mexico. That certainly helps with basic resources for cooking and heating and small-scale construction, but in a depressed local economy, it doesn't help pay the bills. In a recent Forest Trust report, Greg Gunderson contends that while the timber industry in the region has declined in the last decade and the majority of wood products removed from local national forests is for personal use, "... these communities need more than survival rations; they also need the potential to living-wage incomes."¹⁵

Traditional Science

"Environmentalism is practiced more by the communities. These people that call themselves environmentalists, for them it's just a job. For us it's a way

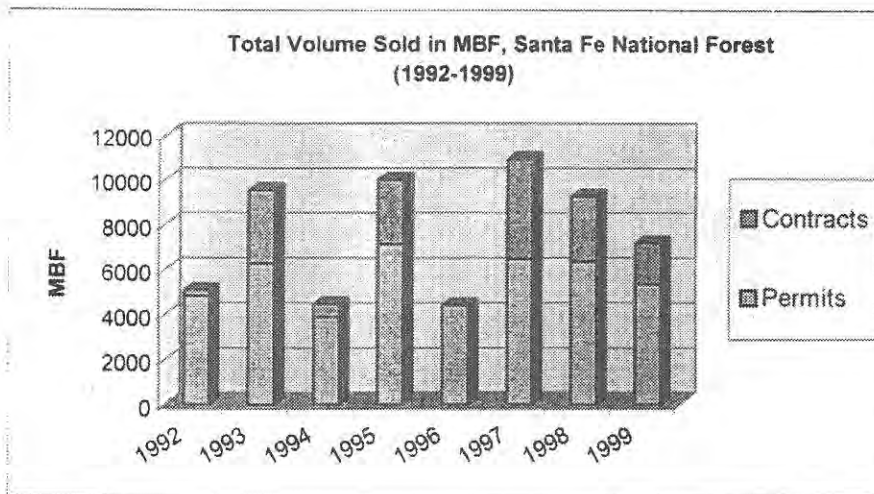


Figure 2.

of life,” Max Córdova says as he feeds another piece of wood into his stove on a cold January afternoon. “There’s no way that we are going to destroy our environment that we live in just to make a buck off these forests. You know, these guys just don’t understand that at all.”

In the wake of lawsuits, injunctions, Mexican spotted owl listing, and acrimonious disputes over logging, several formal organizations promoting small-scale and ecologically responsible forestry have sprung up in the area since the mid nineties. After decades of overcutting, taking out the best and biggest timber, and painting themselves into an economic corner where they could no longer make the big profits of the old days, the larger multinational timber companies have all pulled out of New Mexico. Small-scale local enterprises have filled the niche, but in a far more conscientious and sustainable manner. The environmental community might deserve some credit for the relentless legal pressure that has pushed local people to better organize

themselves, but not for the ecological knowledge and environmental ethic that underlie this traditional forestry movement. The organizations may be new, but the traditional approach to sustainably harvesting wood is centuries old. Like most other local natural resource use, small-scale operations harken back to the days of communal *ejido* use.

“When we talk about the *dehesas y montes* (the commons), we are concerned about lands where we all have a common interest, an interest that precedes our interest in private property,” says local historian and farmer Estévan Arellano. “For we not only share in the common wealth, but we also share in the common health; the two are inseparable.”¹⁶

Community Forestry is a very progressive model of sustainable timber harvesting that consciously promotes applying traditional practices in the modern context. It is a well-established and well-tested approach that has been successfully used to address severe deforestation problems in developing nations around the world. This “new environmentalism” integrates the core components of 1) protecting and restoring the forest, 2) local access to the land and its resources, 3) local participation in collaborative decision making, and 4) engaging the knowledge of those who know the land best.¹⁷ Community Forestry fits perfectly with traditional local practice, and many



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community-based foresters embrace it as part of a global movement they recognize they are a part of. Having been burned and coopted before, however, some local foresters are wary of applying someone else's academic label to their own homegrown practice of local forestry, an approach coevolved with local culture and local landscape over the last four centuries.

Community-Based Forest Ecosystem Management takes the Community Forestry model a step further. Community-based ecosystem management embraces the core components of Community Forestry, but also 1) is based on the principle that "ecological health is linked to community health," 2) promotes social and institutional processes that are more open, democratic, and civil, 3) recognizes monitoring of a broad range of ecological and social indicators as the linchpin in adaptive management, 4) strives to restructure power imbalances to provide more equitable participation in natural resource management, and 5) understands and values "natural capital" and the broad array of ecosystem products and services.¹⁸

A 1993 book called *Clearcut: The Tragedy of Industrial Forestry*, published by Sierra Club Books and Earth Island Press before the 1996 ECL vote, proposed a new approach to sustainable forestry called "Ecoforestry." While touted as a cutting edge synthesis of Deep Ecology and the practice of responsible forestry, Ecoforestry principles echo the traditional wisdom, knowledge, and ethics of the much older practice of local *Norteño* forestry. Among the

other values it proclaims, Ecoforestry is about respecting the "full functioning integrity of natural forest ecosystems," selective cutting "guided by principles of conservation biology and natural selection," recognizing "a multitude of values and services to humans and other beings," and "perennial forest use, based on respect for the wisdom of the forest." The ultimate aspiration of an Ecoforester "is the wisdom of dwelling in place and becoming an indigenous being."¹⁹ In northern New Mexico, "indigenous beings," firmly rooted in the local landscape, have long been at work practicing their own brand of Ecoforestry.

Max Córdova calls it "Traditional Science." Every land-based culture on the planet has developed its own Traditional Science from long experience. The cultural values and customs behind these traditions might not resemble the western scientific approach, but they are no less effective. That these foreign cultural approaches and worldviews also do not resemble mainstream environmentalism appears to be the source of plenty of discomfort and endless misunderstanding and conflict. Local Hispano foresters, Native American forest activists, Mexican campesinos, Amazonian tribal groups, indigenous activists everywhere, are all working with some success to protect and restore forests, but they are not environmentalists in the conventional sense. The environmental ethic of Hispano village life, says María García of the Carson National Forest, "is a circular experiential pattern of living rather than one learned by taking part in Earth Day celebrations or earning a degree in

"While touted as a cutting edge synthesis of Deep Ecology and the practice of responsible forestry, Ecoforestry principles echo the traditional wisdom, knowledge, and ethics of the much older practice of local Norteño forestry."

"As Native people we can't really separate the environment from us, so it's hard to call us environmentalists. We stress the cultural values, the natural laws learned from the creator."

Environmental Education." Diné activist Adella Begaye, whose husband Leroy Jackson was found dead under mysterious circumstances while protesting heavy logging on the Navajo Nation, says, "As Native people we can't really separate the environment from us, so it's hard to call us environmentalists. We stress the cultural values, the natural laws learned from the creator."²⁰

Call it Traditional Science, Community Forestry, Ecoforestry, it is a dynamic and successful hybrid approach to managing all sorts of natural resources which integrates modern scientific understanding with traditional knowledge and practice. George Ramírez explains, "My grandfather . . . is the one that took me into the mountains and taught me a lot. He taught me all kinds of tricks of the mountains and which I will pass on to my kids. And then my wife is a *curandera* [traditional healer], and she collects medicinal herbs in the mountains. . . . Most of our medicines come from there." Along with traditional and experiential knowledge, Ramírez says, "I participate at summer forestry, two, three-day classes, and see what they're up to. And, I have learned some things, too, from there, the modern stuff. So, we put it together."

Community-based forestry projects in local Hispano and Indian communities employ local villagers in sustainable woodcutting on national forests — in some cases part of restoration and fire hazard-reduction contracts — while growing the local economy through new markets for small-diameter trees. Current projects

include stewardship contracting and milling at Las Humanas Cooperative in the Manzano Mountains southeast of Albuquerque, a mill, post-peeler and solar-drying kiln at Jemez Pueblo, the only non-toxic preservative treatment in the region and round-wood construction at La Madera Forest Products in Vallecitos, cutting firewood, vigas, and latillas (for popular Pueblo-style ceilings) at La Montaña de Truchas Woodlot, a post-peeling project in Peñasco, and restoration work at Picuris Pueblo. In all, these projects employ about 50 people, as well as providing work for an additional 100 or so independent contractors.

New market innovations for small-diameter trees are emerging as the viga and firewood market has become predictably saturated. Sustainable Communities, Inc. and ZERI (Zero Emissions Research and Initiatives)—New Mexico recently designed a demonstration project that would use small-diameter trees to produce non-toxic wood charcoal while recovering natural gases and tars for use as a non-toxic wood preservative. The wood preservative of course enhances a secondary market for local small-diameter trees for everything from outdoor structures to telephone poles, but could also be marketed nationwide, filling a niche created by the Environmental Protection Agency banning arsenic-based wood preservatives by the end of 2003. In addition, the unusable limbs and foliage would be inoculated with native fungi spores to grow gourmet mushrooms and to produce a nutritious feed supplement for livestock.²¹



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Generating energy from forest biomass is another promising market for small-diameter trees and slash from thinning and fire hazard-reduction projects. Financial and ecological sustainability questions have yet to be resolved, but local organizations are diligently working on it and biomass generating plants could be well fueled for a very long time with the current glut of small-diameter trees.²²

This community-based approach to ecological forest stewardship offers the best hope for sustainable woodcutting, because it involves local people with a local stake in the long-term health of the resource, rather than the corporate model of grabbing for short-term profits, cutting, and moving on. The community gets more out of it than just wood and income. In places like the village of Truchas, where La Montaña is currently the largest single employer, it raises the overall quality of life and sense of hope, and provides incentives for people to stay in the community rather than seek work elsewhere.²³

"It rejuvenates the economic situation within those communities," explains George Ramírez. "We try very hard to develop economic opportunities for the people here, and we also, even when we get grants, we purchase everything in this area. We try to keep the money circulating in the communities. Like we help bring in YCC [Youth Conservation Corps]. We're close to the youth, we work with them, and we are teaching them the traditional ways."

Community-based forestry is decidedly small scale, and most locals recognize the value of that and want to keep it that way. "We do a much

smaller scale of logging than [big timber companies] do," says Manuel Gurulé. "We don't need thousands of millions of board feet to keep going because we're small, we just work on a small scale. We're not multi-million [dollar]. Our thing is to make a living and get by, we're not here to get rich. We don't want to see our forest raped, either, but we do want to make a living."

Louie Salazar describes part of the difference in terms of the bottom line. "I think to [big timber companies] it's the almighty dollar. To them, to make them money, it's based on production. If there's no production, there's no money in it. Whereas to us, we don't need that much production, we just need a steady flow."

George Ramírez agrees. "The Mountain is in bad shape. Whoever [logged] it before devastated that mountain," he says. "We're coming in and trying to rejuvenate the Mountain. . . . Why do they do this? It's money, it's all money. To them, they don't have time to be taking care of the forest. They just come in and harvest quick, get out, and go to another area. They leave a mess up there when they're done. I mean the snags and all the tops, the branches. It looks like a bomb just went off."

Ramírez explains that "a local approach is attached to the land. We see [our work] as a long-term impact. A big company is in and out and don't care. . . . and they harvest the resource and haul it out of here, you know, instead of allowing for mom-and-pop type sawmills to come in and work at a slower pace and harvest what needs to be harvested at a balanced harvest. In other words, without hurting the land."



Mill.

Even Gene Kuykendall, a sawtimber logger who believes in a heavier harvest, says, “We’ve always had [a sense of] responsibility. I’ve had many, many discussions with the Forest Service and whatnot on the heavy cuts that they did that were taking place. I didn’t feel that they were any good.” Comparing his small family logging operation to the larger multinationals, he says, “I think it is smaller companies that want to take care of the land more. We’re appreciative of what we have here because this is where we live and what we want. . . . Now, some of the loggers that have come into the area from out, didn’t care what they did or whatnot, you know. They didn’t want to take care of it as good as the smaller operators, the local operators, the New Mexicans.”

An ongoing debate about the maximum diameter of trees to be cut on public lands has continued over the last

decade. Recognizing the fact that the timber industry has already decimated most of the Southwest’s old growth, leaving behind forests with 90 percent of their trees smaller than 12 inches, the Southwest Forest Alliance recommends that thinning projects target those trees smaller than 12 inches and avoid cutting anything with a diameter of 16 inches or greater.²⁴

Ramírez agrees that current conditions warrant a 12-inch limit. “I

believe, for now, they should stay under 12 inches until the forests are restored,” he says. “Let us get our feet back on the ground. Let’s let the communities get the control of the mountains like they should have, and get the economic situations — like small sawmills, maybe cabinet shops, some economic benefits throughout the communities — established. And then, after you’ve done the thinning in there, it’s a sustainable harvest, as we said. The smaller material will grow larger, and so you’ve got to, later, in the future, open that up to harvest some of the larger material to benefit the land at a balanced-type harvest. . . . we prefer not to take out the larger trees, but, if they need to come out, they should come out. . . . But, again, we’re more concerned about doing the Mountain right.”

Max Córdova feels that forest conditions call for an even smaller limit. “Our focus has been basically eight-inch



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or less diameter trees because, personally, I think that the work that needs to be done there. There's that overabundance in that category."

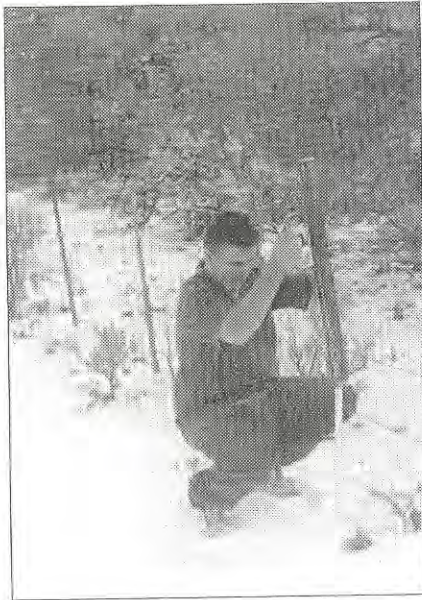
Gene Kuykendall, on the other hand, believes that holding to a 12-inch limit will eventually generate an unhealthy imbalance in the forest. "You go in and you take out all the small, good, healthy stuff . . . what do you have? You have old left there. Okay, sooner or later they die out, and you're gonna have to have to keep taking the young out in order to keep the fire hazard down. And all you got's the old big ones and they die. . . Or pretty soon all you've got is old turkeys out there that ain't gonna be able to produce nothing." The best approach, he says, is "a selective cut on every size out there that's merchantable timber. Go in and take your diseased out, go in and take a selective cut out, do your spacing so you can get growth on them, leave stuff in there to take the place of the big stuff. . . . If you don't want to cut that biggest tree, fine. You're going to have to make it economically feasible for me and everybody else could go out there and make a living, but yet manage that piece of land to where my family can have another five generations out there."

Ramírez says that a locally grounded approach to conscientious forestry is both an art and a science that takes the same gentle skills and green thumb as good gardening. "In a large garden, you have to pull the weeds, and you even thin out some of the vegetables. It's the same as the mountains, and we believe in not a one type of thinning type thing, we do a diversity,

because we know wildlife needs to have thin places. . . . What we do is we thin to what the land needs," he explains. "First we'll go in and take out the sick trees, the culls, and this is the infected trees, and we will remove them first, and we give that to the community. And then we come back one more time, and then we harvest, as we say, some of the timbers. . . and those are viga timbers, under 12 inches. . . . But, we always leave – and this is what we teach our people – we leave the beautiful trees, the ones that will be productive in the future for our children. . . . We go in, and we fix the land. It is very important."

Córdova believes that, given the chance, local communities have the ability to manage forests for optimum ecological conditions and productivity. "I think right now we have a capacity to do anything that we want to in our forest. If we want to reclaim roads I think we can do that. We have the technology to do that. If we want to grow little trees, we can grow tons of little trees. If we want big trees, I think we have the expertise to grow those big trees. The biggest thing to me has been why we're making such a big issue out of it. The work that we're doing is not permanent on the land. It's only there for five, six, seven years. . . . It's like a circle. It keeps going round and round."

To ensure that community-based forestry works for the land as well as communities, Córdova has implemented an ongoing monitoring program. "I was surprised that everybody was assuming that someone else was keeping tabs. You know, people assume that the Forest Service was keeping tabs on the work that was being done on the land. And we



Nova Romero from Truchas sets up a photo point as part of the youth program initiated by La Montaña de Truchas. (Photo courtesy of Max Córdova.)

became aware that nobody was monitoring. . . So we actually created a monitoring team.”²⁵

La Montaña employs three high school boys who have established numerous monitoring points to measure forest growth, snowpack and water yield, and document wildlife before and after any thinning projects. The team visits all the monitoring points two or three times a week for months before, during, and up to a year after

every project, and La Montaña continually adjusts its approach in response to the monitoring results.

Biodiversity

In a society destroying its biological wealth in plant and animal species at a dizzying rate, biodiversity is a critical environmental concern and the source of many forestry conflicts. Ramírez feels strongly about biodiversity, and laments the split that occurred between local communities and the environmental community over the Mexican spotted owl listing and the ensuing injunction. “I think it’s important to protect endangered species. That, again, is another form of our legacy to have those species for future generations to enjoy,” he says. “I have seen areas that we have thinned where the wildlife is in abundance. They seem to go out there like a playground and dance around out there in those thinning areas. . . . When traditional

communities are allowed access to do proper thinning and proper management, the endangered species — it’s almost like a perfect balance — will not be harmed.”

Córdova has had the same experience in the areas he’s cut with La Montaña. “Last year we were going through an area and this bird flew right in front of us, and the Forest Service guy that was with me said, ‘There goes a goshawk.’ We didn’t set out to improve habitat for goshawk. But one of the value-added products of the work we’re doing is improvement of the habitat for that endangered species.”

The Mexican Spotted Owl Recovery Plan recognizes the value of thinning to open more habitat. Along with improving owl habitat, the Forest Service has determined that thinning also enhances general forest health. A light timber harvest, the agency says, mimics the beneficial effects of low-intensity natural wildfires, increases species diversity and wildlife forage, decreases the risk of spruce budworm, and trees within thinned stands grow faster and healthier. Evidence suggests that forest thinning is similarly necessary to provide and maintain good habitat for the closely related northern spotted owl.²⁶

Is local Hispano and Indian community-based forestry environmentally appropriate? I asked this question of forestry expert Melissa Savage and she says that, other than the discussion in this report and a slew of anecdotal information, no scientific literature exists on this topic.²⁷ We do know that, on a global scale, the greatest biodiversity on the planet today exists in those places where cultural diversity and



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traditional land management strategies endure, and that correlation is surely more than coincidence.²⁸

Though it is difficult to quantify the traditional local approach with technical specifications and legal regulations, there is more to it than merely a few good ideas from a handful of community activists. “Stewardship blocks,” part of the Collaborative Stewardship program described in the last chapter, are one example of successful on-the-ground implementation of community-based forestry. The same local ethic and approach are also reflected in recent Rio Arriba County regulations, complete with the teeth of legal enforceability. The 1998 ordinance, approved by a board of county commissioners that includes one veteran of the 1967 Tierra Amarilla courthouse raid, comprises some of the strongest local regulation of logging anywhere in the West. More stringent than the state laws that govern timber cutting on private lands, the ordinance is seen as a model that will ensure long-term protection for watersheds, forest resources, and rural, forest-dependent economies.²⁹

“Healthy forests, healthy communities,” the saying goes, but it’s more than a cliché platitude. Rural development experts and forestry policy makers have recently rediscovered the basic truth that ecology, economy, and community are unavoidably interdependent, a fact that local people — and traditional people everywhere — have always known.³⁰ If we care about healthy forests, healthy rural communities, and cultural vitality, community-based forestry is an unquestionably

valuable approach. But that raises several questions. Leaving aside the “commercial” question for now, how do we clearly distinguish traditional, community-based forestry from industrial forestry? How do we integrate that valuable local knowledge, tradition, and ethic into a broader forestry? What will it take to move past the entrenched conflicts and the vilification of anyone who cuts a tree on national forests and get to work restoring those forests to some semblance of ecological health?

Max Córdova ruminates, “I think there has to be that common denominator where the agencies, the environmental community, and the traditional community come together and say, this is what we would like our forest to look like. Based on the information that we have, the science that we have, all that kind of stuff, incorporated into what we’re doing. And I don’t see us being there. You know, I think that the communities have an idea as to what they would like the forest to be, and that is to have a variety of big trees, small trees, certainly a lot of forbs and grasses on the bottom to sustain wildlife, enough open spaces so that the snow falls on the ground and won’t melt. For example, like it is now with the heavy canopies that we have where the snow stays on the top, on the cover. So all that stuff I think you know the community is taking into consideration. But what bothers me is that the agencies and the environmental community can’t get to that point. And the position that one is taking is, basically they’re saying, ‘there’s a problem, there’s a problem, there’s a problem, there’s a problem.’ . . . but who’s going to be saying ‘there’s a

“A light timber harvest, the agency says, mimics the beneficial effects of low-intensity natural wildfires, increases species diversity and wildlife forage, decreases the risk of spruce budworm, and trees within thinned stands grow faster and healthier.”

solution, there's a solution, there's a solution"? The agencies aren't doing that, or the environmental community. That's only happening basically from the communities."

Notes

- ¹ Baker et al. 1988.
- ² deBuys 1985; Peña and Martinez 1998; USFS 1952.
- ³ Baker et al. 1988; Charles Gritzner quoted in Carlson 1990, p. 134; Meyer 1998; Peña and Martinez 1998; Scurlock 1998; Raish et al. 1997.
- ⁴ USFS 1996 quoted in Peña and Martinez 1998, p. 160.
- ⁵ USFS 1952, pp. 11-13.
- ⁶ Ebright 1994, p. 164.
- ⁷ Ebright 1994; Peña and Martinez 1998.
- ⁸ deBuys 1985.
- ⁹ All 1926 through 2000 timber cutting volumes are from USFS Region 3 records provided by Jack Carpenter, Carson National Forest, June 2001.
- ¹⁰ Raish et al. 1997; Stevens 1994; USFS Region 3 records, June 2001.
- ¹¹ Kutsche and Van Ness 1981, p. 31.
- ¹² deBuys 1985.
- ¹³ 1990s volume data from Gunderson 2001, Appendix A, Tables 1 and 2.
- ¹⁴ 1990s permit and contract numbers from Ron Meyers, Santa Fe National Forest, December 11, 2000; interpretation by Jack Carpenter, Carson National Forest and Ron Meyers, personal communication, December 12, 2000.
- ¹⁵ Gunderson 2001, p. 8.
- ¹⁶ Arellano 1997, p. 35.
- ¹⁷ Brendler and Carey 1998; Carey 1998; 2000; Henderson and Krahll 1994.
- ¹⁸ Gray et al. 1998.
- ¹⁹ Devall 1993, p. 263.
- ²⁰ E. Atencio 1994, p. 4; Carey 2001; Conley 2000; García 1993, p. 7; Little 2000; Oxfam 1997; Raish 2000b; Weiner 2001.
- ²¹ SCI and ZERI-NM 2002.
- ²² SWFA c.2003a.
- ²³ Ryan Temple, Forest Trust, personal communication, October 25, 2000.
- ²⁴ SWFA c. 2003b; 2003.
- ²⁵ La Montaña 2002.
- ²⁶ Stark 2001; USFS 1997.
- ²⁷ Personal communication, September 24, 2001.
- ²⁸ Nabhan 1997.
- ²⁹ Harrington 1998.
- ³⁰ Committee of Scientists 1999; Frentz et al. 1999



Chapter Five

Culture, Ecology, Belonging



"New Mexico's distinctive Hispanic heritage has not received the recognition and respect that it deserves as one of America's oldest and most creative wells of human experience. Whether that error will ever be fully corrected remains to be seen."

— Historian **Marc Simmons**¹

Describing the powerful sense of place and belonging that local people feel, Father Benedict Cuesta, a Catholic priest in Arroyo Hondo, New Mexico, explained, "Their families have lived here for centuries; their roots are in the land; their hearts and souls are there. The tie is really mystical."² It might surprise some readers that Father Cuesta recognized this truth not in some distant bucolic past, but in the early 1970s. He was not the first or last to recognize a unique cultural heritage and strong connection to local land and history in northern New Mexico.

A dismissive argument is often made that northern New Mexico Hispanos are no more "native" than

Anglos who have moved in more recently; that local Hispano culture is nothing more than the ignominious legacy of imperialistic conquistadors. Conquistadors and military campaigns indeed led the first waves of Spanish exploration in the 1500s, much like Athapaskan tribal groups moving into the area less than a hundred years earlier, and early contact with local Pueblo tribes was often brutally violent. But the culture that stayed behind was a ragtag collection of Mexican peasants, Crypto Jews, Tlaxcalan Indians, and other immigrants who populated the mountain villages after 1598. Hispanicized Indians from many local tribes known as *genizaros* slowly sifted into the popula-

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sense, and
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democracy and
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livelihood."*

tion over time, as well.³

After four centuries of history and adaptation, intermingling of Hispano and Native American blood, culture, and ideology, a unique local culture and powerful bond to the local landscape is unmistakable and undeniable. This history explains the term "Indo-Hispano," which more completely characterizes the culture.

Geographer Richard Nostrand says "The geographical outcome of four centuries of Hispano activity . . . is the stuff of Homeland. . . . And the legacy of all this is a truly remarkable geographic entity, a distinctive part of America, the Homeland of the only surviving Spanish colonial subculture."⁴

Writer, historian, and conservationist Bill deBuys says that the "villages of northern New Mexico, belonged to a very small world. It was a world whose insularity, as well as its deep historical roots, accounted for the remarkable durability of Hispano culture."⁵

Anthropologist John Van Ness describes local history as "a chronicle of a rugged people who employed a community-based agro-pastoral system of subsistence to wrest a livelihood from a meager frontier environment. That they were able to accomplish this feat speaks both for fidelity to their cultural heritage and for adaptive ingenuity."⁶

Many others have focused more specifically on the long and successful history of well-adapted, sustainable resource use, or cultural ecology.

Peter van Dresser, a pioneer in bioregionalism, said, "These settle-

ments . . . were for centuries sustained by a simple but effective subsistence and pastoral agriculture, had evolved an architecture and a handicraft technology well-adapted to the land, and were enriched by folkways and ecclesiastical institutions of considerable stability and dignity."⁷

Long-time Taos resident and novelist John Nichols describes local culture as having "a strong sense of community, and of community maintained by the sustainable exploitation of resources. . . . [This means] livelihoods gained from mesa and meadow, irrigation farming in Taos County, firewood gathering, small ranching operations dependent upon grazing leases in the forest, and a generally low-key economic hustle . . . connected to the land-based self-sufficiency that has endured in this area for centuries."⁸

Sociologist Devon Peña says, "Justice, common sense, and scientific prudence dictate that we protect these communities, for they are cradles of ecological democracy and sustainable livelihood."⁹

And so on.

This chapter is not a comprehensive portrait of local culture. The story is far too rich and complex to do it justice in this slim report, and many other very good works already exist (see the Bibliography in this report). This chapter is intended only as an overview for those who might not know the region and its people, and mostly to describe some of the cultural ethics and traditions that define the local relationship to the land and natural resource use.

The main point, however, is that made in the opening quote from Marc



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Simmons. It is important in any environmental policy discussion to recognize the long history, creative adaptability, vitality, and singular uniqueness of northern New Mexico Indo-Hispano culture, a history and culture which have been extolled and valued for generations as the subject of countless scholarly studies and novels. This is a region where the natural world continues to shape the human condition perhaps more than any other part of the country. "From the top of the mountain to the last irrigated acre, people are affected by what happens on the land," explained Otto Lindh.¹⁰ It is an old, deeply rooted, land-based culture, adapted to the local landscape through long experience, that continues to thrive in all its nuanced customs, values, and beliefs, even into this new millennium.

Querencia and the Homeland

"The more you work the land, the more you get to love it, because your heart is in your land." This *dicho* (saying) from his grandfather is how rancher Andie Sanchez feels about his homeland, and it expresses eloquently the idea of *Querencia*.

Querencia means "affection," "longing," or "favorite spot." In common usage around here it refers to a sense of responsibility toward a familiar place, a strong connection and ethic toward the land, and is an apt metaphor for rural Hispano cultural ecology. "They are at home in a place where they live and work and raise their families. This place provides them with the resources needed for survival, and, in turn, they feel a responsibility to care

for that place. This is their *querencia*. It goes beyond the boundaries of legal ownership, beyond the promise of monetary return."¹¹

Estévan Arellano says that "our *Querencia* [is] that which gives us a sense of place, anchors us to the land, and makes us a unique people." He likens *Querencia*, this deeply-rooted knowledge of and respect for the land, to the concept of the bioregion promoted by Wendell Berry, Kirkpatrick Sale, and others.¹² In Sale's book *Dwellers in the Land*, he describes the concept of a sustainable, self-sufficient bioregion in terms that resonate strongly with local Hispano cultural ecology and history. Bioregionalism involves "knowing the land . . . learning the lore . . . developing the [natural resource] potential . . . [within] its ecological constraints," and it values communal ownership and local economies. He could have been writing specifically about traditional northern New Mexico.¹³

George Ramírez puts it simply, "The Mountain takes care of us for hundreds of years, and so it's important that we take care of it." That ethic is expressed in the common *dicho* explaining why a farmer plants three seeds at a time: "*Para yo, para vos, y para todo los animalitos de Dios* (for me, for all of us, and for all of the animals of God)."¹⁴

"The Spanish-Mexican people of the Río Arriba simply did not need Thoreau, Muir, Leopold, or Nash to develop environmental ethics," says Devon Peña.¹⁵ This land ethic is the product of old Spanish legal and moral strictures about land use, long history and adaptation to a land of relative scarcity, and the organic fusion with local Native Ameri-

"Para yo, para vos,
y para todo los
animalitos de
Dios (*for me, for
all of us, and for
all of the animals
of God*)."



Cleveland Mill. (Photo courtesy of Courtney White.)

Azteca, Mayan, Tewa, Apache, Keres, Diné. They are indigenous by how they have lived on the land and lived in communion with the original native peoples of this place.”¹⁸

Responsibility and respect toward the natural world is expressed in numerous and well-documented traditional land-use practices, cultural values and customs, *dichos*, and oral history comprising parables of the ethics and morality of caring for the land.¹⁹ It is all part and consequence of what anthropologists Paul Kutsche and John Van Ness, along with

can culture described above. As local sociologist Tomás Atencio explains, “Their shared experiences under the same sun, on the same land that is nourished by the same water have brought aspects of the two cultural views together, leaving a unique legacy to New Mexico, as well as to the rest of the country.”¹⁶

Writing about natural resource use, María García says, “. . . they shared with American Indians a deep respect for land and water and held similar notions regarding land tenure. . . . Thus, because their world view was more similar to that of American Indians, Spanish settlers of New Mexico developed a similar economy. . . .”¹⁷

Activist and writer Chellis Glendinning says, “. . . the Chicanos of northern New Mexico are indigenous people. They are indigenous by blood:

many others, have described as a constellation of distinctive “village culture values.” *Vergüenza*, in particular, is a value that characterizes a great deal of Hispano culture and cultural ecology. Literally translated, the word means little more than “shame,” “disgrace,” or “shyness.” As an organizing principle for a culture, it concerns humility, modesty, regard for the opinion of others, and an aversion to take or possess more than one needs.²⁰

From a long history of relying on the land, local Hispanos have a bond with their landscape and their communities as intimate and undeniable as that of any native people anywhere on the planet. It is common for northern New Mexico villagers to be able to describe their family history 10 to 15 generations back. As one local rancher expresses it, his children’s interest in the land is “an interest through blood.”²¹ Agricultural



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and social science researchers Clyde Eastman, Carol Raish, and Alice McSweeney explain the strong sense of local tradition and interconnectedness. “In Northern New Mexico there is a distinct impression of continuity: a linking of the family with the land, the individual with community, the past with the future. These ranchers have a respect for land, family, and community that has strengthened over time with familiarity.”²²

Richard Nostrand describes the intimate knowledge of the local landscape, and the fierce love, pride, and loyalty to home, as part of the Hispano sense of place, or Homeland. He relates the following anecdote about a man named Tony Lucero. “What happened was that in 1951, soon after the Forest Service denied [Tony’s father] Juan Lucero a permit to graze his cattle on the one-time common lands of Placitas — where Tony’s grandfather had raised sheep and his great grandfather had raised goats — the family moved to California.” Tony remembered how his father often looked to the sky and said “*Grulla, grulla. A tu tierra, grulla. Porque esta no es tuya* (Goose, goose. Return to your home. Because this is not your land).” A generation later, Tony Lucero and his family moved back to the home village in northern New Mexico.²³

Despite the strong bonds, or maybe because of them, many local Hispanos are beginning to feel a disheartening alienation in their own homeland. The common lament — and accurate perception — is that newcomers from the outside world who are pouring in and rapidly gentrifying the

region lack knowledge, understanding, and sensitivity to local history and culture. Sustaining traditional lifeways and livelihoods, passing on the land-based wisdom from one generation to the next, becomes all the more challenging.

An example of maintaining that strong connection to the Homeland, my father, Ernesto Atencio, has lived in Denver for over 40 years, but shares local concerns about the recent influx. “The outsider is not familiar with the culture here and they are not familiar with what people did to provide for their families only 50 years ago,” he says. “So that is tough, when people migrate to a beautiful location like here. . . . But they don’t know what these peoples endured in years past, and what they labored in, and what the four seasons meant to them. These are things that the new arrivals will never know because they don’t rely on the land. These people cannot appreciate the way people do who have had their hands in the soil for 50 years or more.”²⁴

Max Córdova tells me that the beautiful *latilla* fence on the main road through Truchas is built of small-diameter wood harvested by La Montaña, but those stylish fences symbolize a persistent social and economic divide. “We have to tear down these fences,” says Córdova. “[People] get all hysterical when I talk like that, but I don’t mean physically, I mean figuratively. . . . People are moving here, they like the quality of life. . . . You can go through any community here in northern New Mexico and know who all the outsiders are, you know? And that’s the very first thing they do. The mentality is that they

"As we all seek ecologically sustainable solutions to our planet's vast environmental problems, an ethos of restraint might be the most important legacy this rare enclave of Indo-Hispano village culture holds for the rest of the world. And it is among the reasons we should be trying to strengthen, rather than weaken, land-based Hispano culture."

put up a fence between them and everyone else."

I don't mean to idolize land-based Hispano culture as a paragon of environmental harmony and sustainable resource stewardship. It is as imperfect an example as any of the indigenous, land-based cultures we tend to romanticize. Our species' long history on this planet has shown that such a perfectly balanced and altruistic relationship with nature is something no people can claim. Bill deBuys and others have documented historic evidence of excessive woodcutting, overgrazing, and other hard use here and there around traditional villages. Other scholars vehemently oppose the view that Hispano villagers overused the land before the more recent influences of a capitalistic economy, modern transportation, and expanded markets.²⁵ The truth of the matter probably lies somewhere in between, and, like all history, the interpretation often reflects the inescapable cultural and political lens through which we view it. Discussing erosion and deeply incised rivers in northern New Mexico, geographer Paul Starrs says, "Whether this is the by-product of overgrazing, climatic change, or a combination of these and other factors is one of the great debates of geomorphology, hydrology, and environmental history."²⁶ Certainly, villagers made short-sighted miscalculations in the past, but, as George Maestas says about cattle grazing, "as with every other human endeavor throughout history, mistakes have been made. Nevertheless, we've learned from those mistakes and improved our management practices."

The important point here is that an ethos of restraint is and has been the general guiding principle of resource use, or cultural ecology, in northern New Mexico for centuries. No, not every Hispano woodcutter or rancher or irrigator embraces the same ideas about restraint. The indigenous knowledge and stewardship ethics described throughout this report are unraveling through the slow disconnection from the traditional land base and disjointed continuity from one generation to the next. But restraint is nonetheless a very powerful idea that pervades much of the tradition and practice of resource use. As in cultures around the world adapted to lands of scarcity, villagers here have learned over generations to shepherd their scant wealth in natural capital with exceeding care. As we all seek ecologically sustainable solutions to our planet's vast environmental problems, an ethos of restraint might be the most important legacy this rare enclave of Indo-Hispano village culture holds for the rest of the world. And it is among the reasons we should be trying to strengthen, rather than weaken, land-based Hispano culture.

Original Sustainability

"A lot of the environmental people who just come into this area, they think the people in northern New Mexico ain't got brains enough to throw it out the window. And that's the truth. And it doesn't matter if you're Anglo or Hispanic or what. If you're a Northern New Mexican they think they gotta teach us how to do it. They don't have to teach us how to do it. We've been doing it — the Hispanics have been doing it here



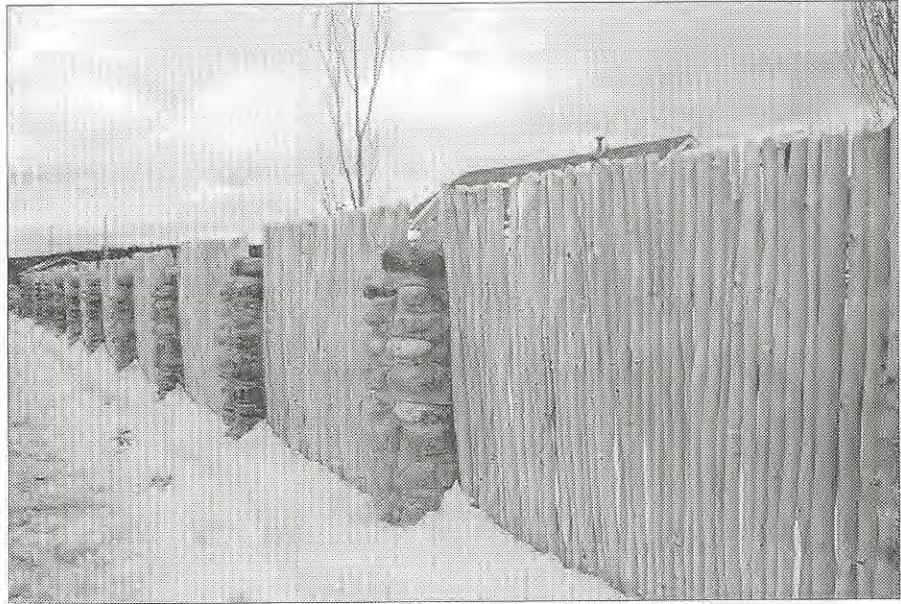
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for 400 years and the Native Americans forever. And us few Gringos that's been here for a hundred and ten years, we think we can do it too."

Gene Kuykendall is right. Too many of my environmental colleagues blindly vilify all things agricultural, whether farming or ranching or logging, as the greatest threat to the environment. There is an automatic and unquestioned opposition to any and all use of natural resources on public lands. But if we don't support local, sustainable agriculture and resource use of all sorts, if we're not committed to the idea of using part of our own backyard to produce as much of our food and other needs as possible, where do they come from? Whose watershed somewhere else are we polluting and dewatering through industrial agriculture and factory farms and unsustainable resource extraction? What kind of corporate globalism and resource-squandering infrastructure are we supporting when we buy foods of dubious quality transported halfway across the planet? The local agricultural community has already confronted these questions and is coming up with concrete answers in the form of some of the most innovative sustainable agricultural initiatives in the West. As Kuykendall rightly points out, people have been doing it here for centuries.

Northern New Mexico's legacy of

localized natural resource dependence and a traditional ethic of restraint provide an ideal framework for sustainable, bioregional development in the



Latilla fence in Truchas.

modern context. In his 1972 book, *A Landscape for Humans*, Peter van Dresser saw the traditional Hispano community in this region as a coherent model of local land use, well-suited technology and construction techniques, and economic organization that was uniquely poised to evolve into what he called the sustainable "bioeconomic" community of the future.²⁷ These very qualities are probably part of what drew counter-culture refugees to rural northern New Mexico in the sixties and seventies — a back-to-the-earth hippie influx seeking its own ecotopia. Many of those folks have stayed on, integrating themselves into the local community and economy, and have become part of the movement toward local sustainable development.

Virgil Trujillo, Superintendent of Rangelands at Ghost Ranch, is credited with some of the most progressive and innovative approaches to rangeland

management. Ganados has had its share of challenges, including some from the environmental community, but has been overall exceptionally successful.

Local citizens formed Ganados del Valle in 1983 in response to the state's economic development plan for the region, which was pushing a tourism-based economy complete with a downhill ski resort. Ganados founders opposed the ski resort because of the environmental harm it would do to forested areas, air and water quality, and downstream *acequias* (traditional irrigation ditches). They also recognized that this sort of



La Madera Forest Products.

stewardship in the region. He says modestly, "The answers are already there. There's nothing to be re-discovered, we've just got to put a lot more of that into practice. We go back, take from the past so that we can really, you know, continue to create the future." There is not much true social or economic innovation in the world. Most of what we call "progressive" or "sustainable" these days is built upon old ideas adapted for modern contexts. Northern New Mexico offers plenty of old ideas, a long and rooted history on which to build, and most of the successful development work going on today follows that model.

The non-profit Community Development Corporation Ganados del Valle, based in the agricultural heart of Río Arriba County, is a pioneer in locally appropriate sustainable develop-

ment. Ganados successfully resisted the resort and conceived an alternative approach to rural development that not only fosters sustainable local economies, but also benefits local culture and protects the environment.

Ganados-initiated enterprises have tapped lucrative markets to add a lot of value to locally grown wool; Tierra Wools produces high-quality hand-woven rugs and tapestries, while Pastores Collections produces wool-filled comforters and other bedding products. A tire recycling project makes



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use of one of the most pervasive by-products of our national automobile culture. Pastores General Store carries goods from 150 local artisans and cottage industries. A commercial kitchen and a natural beef processing plant are in development. Today, in one of the poorest counties in the nation, Ganados enterprises and spin-offs employ about 40 people, market goods for another 150, and generate close to half a million dollars annually in local revenues.²⁸

This integrated approach to rural economic development is not new to the region, but it's growing steadily. Siete del Norte Community Development Corporation (one of the oldest in the nation), Taos County Economic Development Corporation, and La Jicarita Enterprise Community are among those working on development projects with a mind to sustaining the unique life and culture of rural communities.

Other agricultural projects are flourishing as well. The Sangre de Cristo Growers Cooperative, based in Costilla, New Mexico, is a good example of the innovation and potential of organic farming. Reviving a historic agriculture of a century ago, the coop engages several local farmers in producing organic wheat. This hinterland community offers few opportunities, but the fledgling coop already produces up to 300,000 pounds of wheat and nearly \$90,000 in revenue per year, and so far has found lucrative markets with several bakeries and restaurants in Taos and Santa Fe. Looking to the future, the coop is building a mill to process grain locally

and cut out middleman costs, experimenting with organic oats and barley, and running a summer youth-farmer program.²⁹ As a friend once said about reviving traditional farming at a Hopi village, "It's not just about growing food, it's also about growing kids."³⁰

Following the Sangre de Cristo Growers' lead, other organic wheat cooperatives are sprouting in the area. Farmer's markets and organic produce are also experiencing a renaissance throughout New Mexico. Santa Fe hosts one of the premier farmer's markets in the country, and another 26 such markets are thriving in other parts of the state. One indicator of the economic potential is the fact that the market for organically grown food in New Mexico has increased by 20 percent per year since 1990.

Working toward similar goals, *acequia* associations in the state have become more politically active and influential in their advocacy of traditional communities and locally-based economies. *Acequias* – gravity-driven irrigation systems imported to the region by the earliest Spanish settlers – have sustained local communities and agriculture for centuries and were the earliest form of cooperative community government in rural Hispano villages. Today they endure as part of the glue that holds together rural communities, but they also nourish the burgeoning organic produce industry.³¹ Their survival, like so much in traditional Hispano communities, depends on maintaining local control of critical local resources, in this case community water rights.

Ranching in northern New Mexico is

*"Keep the land
healthy, and it
will keep you
healthy."*

undergoing a similar revitalization through recent innovations in holistic range management. Like other agricultural development in the area, improvements in range management are often more a revival of traditional practices coupled with a new scientific approach.

Virgil Trujillo manages 21,000-acres of private grazing land at Ghost Ranch. He expresses the basic philosophy that guides his work — a philosophy based on 400 years of local ranching — in a characteristically simple way.

"Keep the land healthy, and it will keep you healthy." In this case, keeping the land healthy entails a rigorous grazing rotation schedule and a lot of work moving cattle from one pasture to the next. Cattle are allowed to graze only from November 1 through May 31, and the land rests and regenerates during the summer growing season. Since switching to this type of management in 1986, the ranch has been able to triple its carrying capacity and still remain within ecologically sustainable limits.³²

Herdling is a part of holistic management that is one of those age-old practices making a comeback. Herding livestock has been a widespread and successful adaptation around the world for up to 10,000 years, at least as old a pursuit as farming, but recent practice and public lands policy have tended to leave livestock untended in designated, often fenced, allotments. Without the ability or incentive to roam, animals are likely to overgraze and overtrample one small area or destroy a stretch of sensitive riparian habitat. Herding keeps livestock on the move as a unit, filling

an ecological niche large roaming herds of ungulates have always filled (though admittedly not always these ungulates). It spreads both the impacts and the benefits more evenly over a large area, keeps cattle out of sensitive areas, can strategically exclude or include different stretches of land as conditions dictate, and allows longer periods of rest for large areas.

Joe Torres says he got the idea of reviving herding on the Valle Vidal Allotment of the Carson National Forest from talking to his grandfather, who spent a lifetime herding sheep. By all accounts, conditions on the Valle Vidal have improved since Torres hired riders to keep the cattle moving. "They can't stay in the creek bottoms," for instance, he says, "because the rider won't let them." Torres says the extra \$20 per head he pays each year for the rider is well worth it, not only because the lighter touch on the land means better forage and fatter cattle, but because it promotes a healthier ecosystem. The Valle Vidal herding operation is proving to be a successful experiment that other local ranchers are beginning to emulate for all the same reasons. In places like the West Elks in Colorado, herding has produced such a dramatic improvement in range conditions that the Forest Service District Ranger has been able to shift resources to other parts of the district.³³

The Valle Grande Grass Bank, located on Rowe Mesa on the Santa Fe National Forest, offers yet another avenue for improving both ecological and economic conditions for ranchers. The grassbank is under a special grazing permit to the Conservation Fund that



Culture, Ecology, Belonging

allows national forest permittees from other areas to temporarily relocate their livestock to Rowe Mesa while home allotments get a chance to rest and undergo restoration work. A well-documented trend of tree and shrub encroachment into mountain grasslands during the last century – one result of over-zealous fire suppression on top of a period of severe overgrazing – has cut available grazing lands by half. This loss has squeezed livestock into a shrinking territory where the forage is limited and grazing impacts are magnified. Removing animals from their home allotment gives the Forest Service and permittees an opportunity to re-grass some of those overgrown areas through thinning, prescribed burning, and reseeding. An additional year or more of rest allows the desired new growth to take a firm hold, and the livestock are returned to a revitalized and more productive allotment.

Grassbanks can help ranchers restore the ecological vigor and carrying capacity of their grazing allotments without forcing them to suspend ranching operations and cut into their slim revenues.

Building on traditional economic and social structures and on the cultural wisdom and ethics that have guided resource use for centuries, local land-based communities are blending new ideas with old to stimulate a wide range of economic potentials. This is not a wholesale plunge into anything that makes a buck, but a mindful approach to economic development that seeks harmony with the realities of the local landscape and the rhythms of the local culture. It is an approach that more of

the world could learn from.

Notes

- ¹ Simmons 1988, p. 188.
- ² Quoted in Carlson 1990, p. 109.
- ³ T. Atencio 2003; Santistevan 2003.
- ⁴ Nostrand 1992, p. 232.
- ⁵ deBuys 1985, p. 121.
- ⁶ Van Ness 1987, p. 141.
- ⁷ van Dresser 1972, p. 15.
- ⁸ Nichols 1996, p. 1.
- ⁹ Peña 1998b, p. 275.
- ¹⁰ C. Otto Lindh 1950 quoted in Baker et al. 1998, p. 21.
- ¹¹ McSweeney 1995, pp. 112-113.
- ¹² Arellano 1997, p. 35.
- ¹³ Sale 1985, pp. 44-46, 85-86.
- ¹⁴ Santistevan 2003, p. 50.
- ¹⁵ Peña 1998a, pp. 49-50.
- ¹⁶ Arellano 1997; T. Atencio 1987, p. 1; Rivera 1998; Santistevan 2003.
- ¹⁷ M. García 1993, pp. 5-6.
- ¹⁸ Glendinning 1996.
- ¹⁹ Arellano 1997; T. Atencio 1987; Nostrand 1992; Peña 1998a; Peña and Martinez 1998; Raish 2000b; van Dresser 1972; Van Ness 1987.
- ²⁰ Kutsche and Van Ness 1981, ch. 7; Valdez 1979.
- ²¹ Quoted in McSweeney 1995, p. 100.
- ²² Eastman et al. 2000, p. 545.
- ²³ Nostrand 1992, p. 223, p. 213.
- ²⁴ From an interview with Ernesto Atencio, conducted by Lorenzo Sotelo as part of an Amigos Bravos Oral History Project, July 2, 1997.
- ²⁵ See Carlson 1990, p. 103 and deBuys 1985, ch. 14 for evidence of impacts. See Peña and Martinez 1998 for the opposing view.

²⁶ Starrs 1998, fig. 5.5, p. 91.

²⁷ van Dresser 1972.

²⁸ Sargent et al. 1991; Arlene Valdez, Canados del Valle Executive Director, personal communication, November 8, 2000; Varela 1995; María Varela, personal communication, July 2001.

²⁹ Lonnie Roybal, Sangre de Cristo Growers Cooperative President, personal communication, November 9, 2000.

³⁰ Miguel Vasquez, Professor of Anthropology, Northern Arizona University, personal communication, 1995.

³¹ P. García 1999.

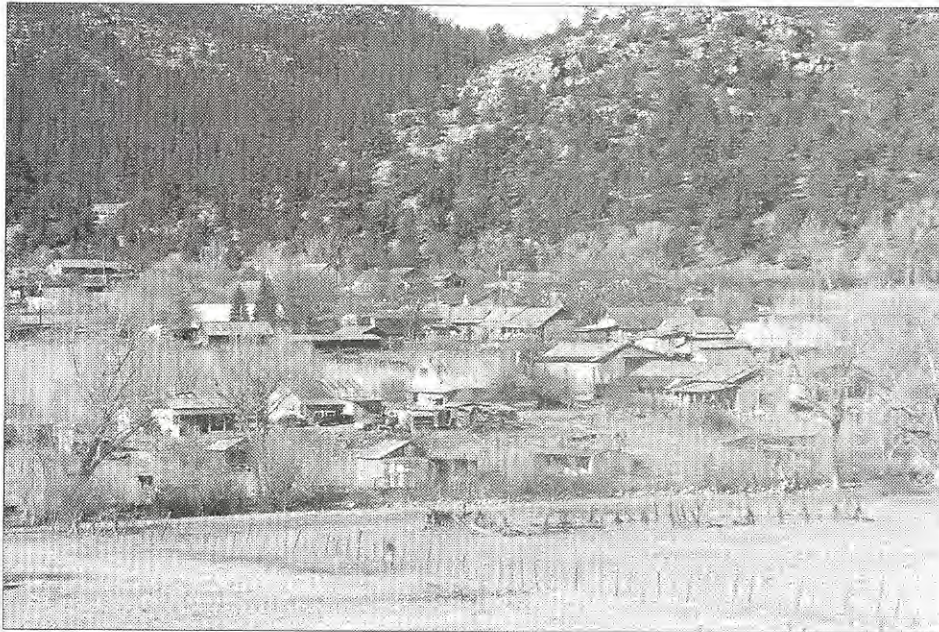
³² The Quivira Coalition 1998.

³³ Bradford and Allen 1999; Gadzia 1999; Quivira Coalition 1999, pp. 10-11; White 1999.



Chapter Six

Local Consequences of Ending Commercial Logging



Gene Kukendall's family logging operation employs six to seven men, supporting six to seven families. In the small community of Tres Piedras on the edge of the Carson National Forest, that much revenue is a tremendous economic boost and would be a tremendous loss if the operation were to fold. As it is now, with tighter restrictions everywhere they turn, the Kuykendalls are forced to take on contract logging projects on private land far from home and family for days or weeks at a time. Ending commercial logging "would eventually put us completely out. It would," says Kuykendall. "I mean, because there is not enough private timber to keep it

going much longer. And the Forest Service has the timber, the public land has the timber. . . . We'd go on welfare and food stamps and sit on our butts."

Putting national forest wood products beyond the reach of rural, forest-dependent communities would add one more burden to an already heavy economic load. With any more strain on the troubled rural economy, some families worry they'd be forced to sell out and move in order to make ends meet, leaving behind not only the ancestral lands and precious water rights, but the continuity of four centuries and more of a unique land-based culture. Willing buyers abound as the area is fast being discovered by well-heeled immigrants

"I believe it would wipe out the traditional way of life out here. I believe that it would force us to leave, sell our lands, to move into where we can find jobs. I mean, it can devastate us. I believe, also, that it would devastate the watershed. . . . it would just be a very ugly thing to see happen."

— Northern New Mexico woodcutter
George Ramírez

from the cities. Looking for their own place in the sun, these recent immigrants continue to gentrify rural communities, dropping exorbitant sums for land without a thought, inflating land values and local taxes, erecting fences both real and figurative, and unintentionally displacing the culture and the people that are the very heart of the character of northern New Mexico that attracts many of the newcomers in the first place.

Dark visions of sprawling subdivisions, extravagant resort development, or water-squandering golf courses are not far-fetched, even in this semi-arid region. It's already happened to Santa Fe and is slowly happening to Taos and many smaller communities. "None of which is likely to have a more desirable environmental outcome," as rancher George Maestas mildly puts it, than local villagers continuing the age-old traditions of sustainable natural resource use. Traditional life and communities and families "might all fade away," he says, "to be found thereafter only in the history books."

Economic Impacts

In 1952, the Forest Service listed 59 communities within or adjacent to the Carson National Forest that were "more or less dependent on the Forest for a livelihood."¹ Fifty years later, three of those communities no longer exist, Taos Pueblo had 48,000 acres of national forest land returned to them, and Pagosa Junction, Colorado is now the resort tourism-based town of Pagosa Springs. The remaining 54 communities on the list still to some extent practice or benefit from a land-

based economy dependent on national forest resources.

"My family has survived off the mountains for over 200 years. It's been our life," says George Ramírez. "The only job there is in this area is care of the mountains, you know, [working with] the resources that are there. This was a traditional way of living for hundreds of years, so when they shut down the accesses and closed the roads with the Mexican spotted owl issue . . . it killed us in a sense. You know, it wiped us out."

The temporary economic impact of the 1995 timber harvest injunction provides a glimpse of what we might see in northern New Mexico villages with an end to all "commercial" wood harvesting. Manuel Gurulé talks about how it affected the tiny La Madera Forest Products Association in Vallecitos. "When the Coop was going good we had forty-some members, and we were doing a lot of [small diameter] wood in them days. . . . We had just developed a market for the wood, and it was going good, it took us like a good two or three years. And when it was going strong then we started getting hit by environmental things from left and right.

"We're just getting going, we're building up, building up, and they hit us hard and they brought us all the way back down. Set us back to step one. So now we're financially broke, I guess you could say, 'cause in that kind of business you need to have that money flow. And when you don't do that and you can't produce — well, you know, there's banks can't wait forever and stuff like that. And, if you're not producing, you don't have a cash flow, they're gonna look at your application twice. . . . And then we



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have tied up close to a hundred thousand dollars just in the couple of sales that we have. . . . we had to pay for all the performance bonds, all the down payments. So we have a big investment and we can't do nothing with it."

Max Córdova explains the economic potential of a well-managed, sustainable fuelwood enterprise. "Well, it can add a significant amount. I think of the studies that we've done. If you're an industrious person, you can sell, or cut, up to 90 cords, for example, a year. So, at a hundred dollars [each] it's a little bit of money to come into the family coffers. And I think that's good money, you know. Two out of every five kids are dropping out of school and, basically, they are getting into issues in the community — drugs, alcoholism, whatever it be. And these guys, even though they don't have an education, they are very skilled at, for example, using a chain saw. Since they were ten, 12 years old they've been using a chain saw. So what we're saying is why not put that skill to use?" Ending commercial logging would put an end to that important economic and social potential.

Córdova feels that "the environmental community has no heart and no soul, so they don't understand how important land is to our communities. They will push us more into government subsidies and dependencies."

Beyond increased government dependency, Manuel Gurulé fears total economic displacement. "What would

happen is some rich folks would come and buy [our land] for their summer homes and the poor people would have to go make a living somehow, some-



George Ramírez in his kitchen.

where. Be homeless. Homeless people, you know."

Heating, Cooking, Resources for Survival

During the 1995 injunction that shut down the timber harvest, misinterpreted and poorly implemented as it was, people in many forest-dependent rural communities suffered. In the village of Truchas, known to the general public as the quaint and colorful location for the film *Milagro Beanfield War*, Max Córdova tells me that, "We had children getting sick all over the place, the elderly also." The village ran an estimated 1,800 cords of wood short.

Córdova relates this story: "We have a family here, for example, that had four girls, four children. Because their wood supply was so limited, they moved

La Vida Floresta

everything from the bedrooms to that big room, and when we brought wood to them, the girl was actually sick. [Santa Fe environmentalist] Sam Hitt



Wood for the winter.

brought her some wood. Then after he took the wood he came back and said, 'Max, I think you're setting me up.' And I told him, 'hey, you know, this is the consequence of your actions. People are getting sick as a result of that.' That was children, and then older adults — we had a lot of elders for example who don't have families here. . . . Those were difficult times for the communities."

Woodcutting of all scales is a tradition as old as Indo-Hispano culture. Though it has never been the same sort of culturally defining activity as ranching or *acequia* farming, it is no less important to fundamental subsistence in terms of construction materials and fuelwood for heating and cooking. It may be hard for most middle class

Americans to imagine in this age, but many families continue to cook on wood stoves, and even more heat their homes exclusively with wood. Among other benefits, this reduces dependence on the environmentally destructive fossil fuel industry and alleviates the need to put out the extra cash for natural gas or propane. In these cash-strapped communities, every penny helps.

"Firewood gathering is a tradition here. It brings a family together. It's a lot of work. It's a necessity of the culture," explains Córdova. "So, during August, September, October, the families go and gather the wood that they need for the winter season. I experienced a little of the horse and buggy woodcutting

days. We would go and cut the limbs, we never cut trees. . . . As a result, the trees grew healthier by people doing this pruning kind of thing."

Córdova says that we could solve both economic and ecological problems if the Forest Service allowed more fuelwood cutting. "We've done several studies here and we found out that people need six to eight cords of fuelwood to survive during the winter, and then the Forest Service would only sell two cords of wood. If evidence suggests that they need six or eight cords, why only sell two cords? So basically what was happening was people were legitimately going and cutting two cords, and then illegally cutting the other wood that they needed. We would say that the agencies were actually



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making thieves out of the people. So one of the things we said was just open up the areas, select the areas that needed to be thinned out and use people to thin those areas.”

Beyond the Bottom Line

One danger of straight and narrow economic thinking is that it fails to take into account the less quantifiable, though no less important, issues of social well-being, cultural vitality, ecological vigor, and other less-than-tangible values. Many environmentalists, trying to beat conservative economists at their own game, have adopted a similar analytical economic approach some call “Ecosystem Valuation,” which attaches dollar signs to neglected but important ecological benefits and “ecosystem services.”² It’s a good idea that certainly has an important place in current environmental debates, but it is still fundamentally the same sort of one-dimensional, materialist economic thinking that ranks the worth of things based purely on their dollar value, the very rationalization that environmentalists and human rights activists decry when protesting corporate exploitation and globalization.

Geographer John Wright says, “Hispano small-scale forestry may not be purely ‘cost effective’ in the short term, but will the land be better treated? It would seem so. And if the economic subsidy remains in place, might it be better used for regenerating forests and rural cultural landscapes than for encouraging commodity extraction and profiteering by a few absentee corporate entities? Of course. If Hispanos attain even a modest living

from the woods they can pull back from their heavy dependence on social welfare programs and achieve true ‘community stability.’”³

Max Córdova explains some of the broader values and benefits of community-based forestry. “We’ve started telling people, ‘don’t look at volume or acres that we’ve cut.’ I think last year we thinned like a thousand acres for example. And then the year before that I think we did 900 acres. But you know when we evaluate the work that we’ve done we say, not only how many acres did we cut, but how many jobs did we create? For example, we created 30 jobs in that year. . . . So, the other thing that happens is, as we restored areas, elk moved into the areas. . . . there’s more quantitative water that we can measure. There’s more herbs that we can measure. . . . And as we’ve restored areas, the biggest impact I’ve seen is the animals moving in and then the meat will stay with the families here so, you know, it adds to their larder, basically, in having more to survive.”

Córdova continues, “So one of the things we’re saying is, with all of the work that needs to be done in the forest, we have the people that are able to do that work. And in the process we hope that by giving these people jobs and opportunities we hope we can change their lives also. A lot of these people are, for example, on social programs. Be it welfare, social security, some kind of unemployment. I think that with all the work that needs to be done, we can use that skill that they have, we can really have an impact in the communities here.”

Córdova also laments the fact that

"It is ironic how many conservationists have presumed that biodiversity can survive where indigenous cultures have been displaced or at least disrupted from practicing their traditional land-management strategies. Ironical because most biodiversity remaining on earth today occurs in areas where cultural diversity also persists."

environmentalists undervalue the important role these environmentally conscious rural communities can play in the bigger struggle to protect and restore our forests. "I think that the environmental community also needs to understand that the first line of defense is the communities here. And we're the ones who live in this forest who see the logging trucks pass down, we see the illegal cuttings that are happening, for example. And you know, we become the eyes and ears, basically, of these groups who tend to live in a big city. We are rural people, we're the first line of defense. And we should have that support from them, but, you know, we haven't had it."

Shutting down commercial logging and woodcutting on local national forests would have obvious local consequences, but what do these consequences mean to the larger world? In a seldom cited passage from *A Sand County Almanac*, Aldo Leopold, one of the fathers of the modern environmental movement, commented that "The rich diversity of the world's cultures reflects a corresponding diversity in the wilds that gave them birth." And he lamented "the exhaustion of wilderness" and the "world-wide hybridization of cultures" as the two most significant developments of the modern age.⁴ Taking that consciousness a step further, ethnobiologist Gary Nabhan more recently wrote, "It is ironic how many conservationists have presumed that biodiversity can survive where indigenous cultures have been displaced or at least disrupted from practicing their traditional land-management strategies.

Ironical because most biodiversity remaining on earth today occurs in areas where cultural diversity also persists."⁵

And it works both ways. Locals have always known it, but scholars now also recognize the key role that working the land plays in maintaining cultural identity in rural communities. More and more researchers in many disciplines also recognize that traditional local knowledge can and should play a central role in designing environmentally sound strategies for sustainable resource management.⁶

Land-based Indo-Hispano village culture in northern New Mexico represents a unique reservoir of human experience, the centuries-long blending of cultures, spiritual traditions, and adaptations from the Middle-East, Spain, Mexico, and Native North America. Activists and scholars have recognized this unique fusion as *La Raza Cosmica* (the Cosmic Race), a poetic description of the living and breathing diversity firmly anchored in the soil of this region.⁷ Losing that rich tradition and rooted cultural knowledge would be a tremendous loss to cultural diversity in the world, comparable perhaps to the loss of biodiversity from indiscriminately clearcutting our national forests.

Notes

¹ USFS 1952, p. 13.

² Talberth and Moskowitz 1999.

³ Wright 1997, p. 14.

⁴ Leopold 1976, p. 188.

⁵ Nabhan 1997, p. 37.

⁶ McLain and McDonald 2000

⁷ Arellano 1997.



Chapter Seven

Solutions



Allowing greater local access to national forest resources through community-based forestry makes good environmental and economic sense. Community groups, advocacy organizations, researchers, policy analysts, even a comprehensive report by a non-partisan committee of scientists commissioned by the Secretary of Agriculture, have recommended for years that integrated local stewardship is the best approach to restore both forest health and rural social and economic vigor.²

In the wake of the devastating wildfire season of 2000, which locally destroyed hundreds of homes and ominously threatened the nuclear research facilities at Los Alamos National Laboratories, the public and

elected officials could no longer ignore the fact that national forests are in need of better long-term ecological management, which should include some thinning. Thinning alone does not constitute forest restoration, cautions Joel Glanzberg of The Forest Trust, but it is an important part of a comprehensive strategy. The Center for Biological Diversity, the Grand Canyon Chapter of the Sierra Club, and the Southwest Forest Alliance say, “forests need small tree thinning and prescribed burns.” A recent paper by a highly respected group of scientists and environmental activists goes so far as to say that “. . . if ecological principles are used then economic utilization of forest products may enhance forest restoration. For example, restoration treatments will occur sooner

“It must be acknowledged that social justice and ecological integrity would be best served by shifting to increased Hispano use of the National Forests — the lost land grants of Northern New Mexico.”

— Geographer
John B. Wright¹



A good ground cover encourages infiltration and reduces peak flows—and much of the water that soaks in will eventually contribute to surface flow downstream—resulting in higher base flows. (Photo courtesy of Abe Franklin.)

engagement of local communities in the creation of more sustainable forest-based economies.”³ In northern New Mexico, as in many areas of the West, there is great need and a great opportunity for local community-based forest restoration and stewardship.

The Community Forest Restoration Act of 2000 authorized \$5 million per year for five years for restoration projects on national forests and other lands in New Mexico and the Urban/Wildland Interface program has funneled tens of millions of dollars into reducing fire hazard in vulnerable forest communities. Both initiatives plan to thin dangerously overgrown and unhealthy forests, enhance biodiversity, reduce fire hazard, and demonstrate ecologically sound forestry. And both specifically aim to boost local economies through creating jobs and encouraging local businesses to market the glut of small diameter timber that will come out of the thinning projects. The Forest Service will cut through some of the bureaucratic red tape to prioritize commercial contracts to local nonprofits, cooperatives, YCC crews, and other small-scale businesses

and over larger areas if some costs can be recovered through the sale of wood from small-diameter stems.

Restoration can be an opportunity for the re-

in forest-dependent rural communities.⁴ It is increasingly important for environmental organizations that care about forest health, environmental justice, or sustainable rural communities to support the many good projects resulting from these initiatives, or be left watching from the sidelines.

Redefining “Commercial”

One of the most frequent and valid criticisms of commercial logging, woodcutting, or any other resource use on public lands is that it is heavily subsidized by the U.S. government and taxpayers. Below-market timber prices and grazing fees amount to corporate welfare and an unfair advantage for already-rich multinationals, the argument goes. That is the image of “commercial” logging that I believe most people hold, and it has understandably inflamed a righteous passion. We absolutely should not be helping corporate interests who are blatantly milking the system to pad their profits, and often ruining the land in the process. But what about the struggling local families who have always relied on national forest resources to take the economic edge off so they can pay the bills, feed the family, send a kid or two to college, stay off of food stamps and welfare?

Norteño villagers are acutely aware of the fact that all activities on public lands — recreation of all sorts, wilderness protection, wildlife management — are similarly “subsidized” for the public at large. And many of these activities are as plainly commercial as woodcutting or other resource use. Local economist and rancher Joe Torres



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bristles at the “welfare rancher” argument. “I don’t buy that,” he says. “I want to talk to the environmentalists, to anybody, who tells me ‘subsidy.’ . . . Who is subsidizing who? Don’t give me that bull. . . . Oh those guys. Where did they go to school? They went to public school that was subsidized, they travel on a highway that’s subsidized. They don’t look at the subsidy. They are a product of a socialistic society. That’s why they can afford to stand on a goddamn soapbox and bark all day. Because they are a product of a socialistic society, whether they want to admit it or not.”⁵

The current narrow interpretation of “commercial” under the McKinney-Leach Bill or the Sierra Club’s ECL initiative ignores all these issues. It includes no discussion of scale and justice and equity and ecology, and constrains local groups and chapters of national environmental organizations from supporting any revenue-generating woodcutting operations on public lands, period. Even if such projects are explicitly intended to restore forest health. Even if they are demonstrably sustainable. Even if they bolster the local economy in the process. This particular dilemma will raise its horns often over the next several years as community-driven restoration and stewardship forestry becomes more prominent.

As I discussed in Chapter One, there is no adequate single word we can substitute for “commercial” to distinguish forestry practices we might support from those we do not support. In general, there is no quantitative, by-the-numbers working definition we can

adopt for “commercial” that takes into account all the subtleties of scale, volume, tree size, techniques, ethics, stewardship, tradition, and the social, cultural, and ecological benefits of sustainable community-based forestry. A more appropriate definition would involve something like a list of general principles.

In extensive conversations with Max Córdova, widely respected as one of the most knowledgeable community-based foresters in the area, he was unable to come up with a simple quantitative definition of what constitutes an ecologically sustainable level of woodcutting. He suggested only that, given the current state of the forest in his neighborhood, the diameter limit should be as low as ten inches. Keep in mind that this assessment that ten-inch diameter material is what needs the most attention right now is specific to the Camino Real District of the Carson National Forest only. It’s likely that a smaller or larger diameter makes more sense with site-specific conditions in other forests. Once forests are thinned to a healthier diversity of sizes, it might be that a larger-diameter limit would be necessary to maintain long-term forest health. To minimize erosion problems, Córdova also suggested that there should be no cutting on slopes steeper than 30 degrees. But there is no other measure in board feet (that unit of measurement isn’t even relevant to the fuelwood and small-diameter trees most community-based foresters are cutting) or acreage or trees per acre or specific techniques or dollar value that makes any sense as a general blanket rule.⁶

Córdova acknowledges that revenue

“...there is no adequate single word we can substitute for ‘commercial’ to distinguish forestry practices we might support from those we do not support.”

is an important aspect of the forestry he and other community members practice through La Montaña de Truchas, but

of the Mountain. The long-term benefit we get from it, the irrigation system runs, this spring we got water in our wells. So there's those benefits that a lot of people overlook."

In general, both Córdova and Ramírez say that specific prescriptions, density of trees per acre, range and diversity of tree sizes, diameter limits, forestry techniques, etc., are site-specific and must be determined in relation to local forest conditions and in harmony with local ecology.

Any policy reform intended to limit commer-



Typical overstocked forest in northern New Mexico. (Photo courtesy of Courtney White.)

there are other equally important values. "How can we measure restoration? . . . how many elk came back, how many turkey came back, how much more grass was there available for grazing, how much more water? For us, as communities, that's much more valuable than, for example, how much money did we make off the forest."

George Ramírez, also very knowledgeable and experienced in community-based forestry, says a 12-inch limit makes sense for now, but, like Córdova, believes that it might need to be increased as forests are thinned to a more natural configuration. Like Córdova, he and the Las Humanas Cooperative are in it for more than just the pittance of money they make. "I personally don't look at it as just economics, more money for the community. I look at it as watershed restoration and, again, taking care

cial exploitation of wood products on public lands has to recognize the obvious, if not easily definable, distinctions between traditional, community-based forestry and industrial logging presented throughout this report. Below is a description of small-scale, ecologically sustainable, community-based forestry, that I believe reflects the community perspective, cobbled together from local community wisdom and the principles of Community Forestry, Community-Based Forest Ecosystem Management, and Ecoforestry. It should be interpreted as merely an incomplete list of basic concepts and guiding principles — not absolute maxims — to describe the qualities of forestry projects that national environmental groups might consider exempting from an ECL campaign, even if the woodcutting



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activities generate revenue or profit:

- Projects with a primary goal of protecting and restoring the integrity of natural forest ecosystems for an ecologically sustainable, perennial harvest of wood products.
- Projects that explicitly recognize a broad range of benefits and values to humans, wildlife, and the ecosystem.
- Projects based on a clear and articulated ecological forestry ethic.
- Projects developed through collaborative partnerships based on trust and common interest between local communities, agencies, environmental groups, and others.
- Projects with transparent and publicly accountable management plans.
- Projects that are operated by local community residents, community-based businesses, or non-profit organizations for the primary benefit of local forest-dependent communities.
- Projects that harvest wood products for fuelwood, *vigas*, *latillas*, fenceposts, small-scale construction materials, and other necessities for local subsistence.
- Projects that engage the traditional knowledge of local people who know the land best in collaborative decision making, planning, and advisory boards.
- Projects that provide access to wood products for Indian and Indo-Hispano communities with claims to local land grants and/or a long history of traditional use of local forest resources.
- Projects that do not cut trees larger than 12 inches in diameter.
- Projects that do not cut trees on slopes steeper than 30 degrees.
- Projects that do not involve the construction of new roads.
- Projects that primarily use small equipment, manual labor, and/or draft animals.
- Projects that remove all the resulting slash manually or with fire.
- Projects that include long-term monitoring and management to ensure ecological health.

Setting Things Right

"I think land grants have what you call priority rights," offers George Ramírez. "I think that those [rights] should be recognized, and I think that they should allow [locals] to exercise their traditional access to lands and resources in the mountains. I think there should be a law saying this."

Despite presumed federal control, legal and rightful ownership of the public domain under the Forest Service and BLM in northern New Mexico remains an open question.⁷ In an attempt to answer that question, Senate Bill 2022 directed the Government Accounting Office to review the United States' implementation of the Treaty of Guadalupe Hidalgo, 152 years after the fact, and start the slow and controversial process of determining how to address valid community land grant claims. The process is underway and the second report from the GAO including recommendations for possible remedies is expected soon.⁸



La Vida Floresta

The 1999 report from the Committee of Scientists to the Secretary of Agriculture recognized the inescapable history of Hispano traditional use of old grant lands and recommended that the Forest Service give priority to managing local forests for the benefit of local communities. "Unlike Indian tribes, whose rights stemming from treaties and federal statutes remain in force, Hispanic communities generally do not possess explicit legal rights in the former grant lands of the national forests, however much the Treaty of Guadalupe Hidalgo might have intended otherwise. Nevertheless, these communities have powerful historical and contemporary equities that should be reflected in Forest Service policies." Echoing Regional Forester William Hurst's Northern New Mexico Policy directive of 30 years ago, the report says that "... the Forest Service should plan and manage land grant national forest lands to contribute to the traditions and needs of local Hispanic communities. . . [and] give priority to watershed protection and to the personal uses of community members for firewood gathering, grazing, and hunting."⁹

A Santa Fe environmental activist recently dismissed the idea of returning land grants to their rightful heirs as "the agenda of the 'wise-use' movement dressed up as social justice."¹⁰ Others probably share that opinion. But if this is not the agenda of genuine social justice, what is? The land grant issue is not a recent knee-jerk sagebrush rebellion, it's not an invention of extremists or conspiracy theorists. It is a real issue that has impacted local communities tremendously. Finding an appropriate way to

correct that historic injustice could go a long way toward local self-determination and supporting the balanced, sustainable rural livelihoods that local people have demonstrated they are both capable of and committed to. It is an important step toward environmental justice and social and economic equity, and the evidence is strong that local stewardship will yield healthier ecological conditions.

Some land grant activists like Max Córdova believe it's just a matter of time before rightful heirs get some of their land back. "The majority of the land grant peoples still feel that the land is theirs. And it doesn't matter what the government does, we still feel that we are directly related to the land. . . . I've been told by our Congressional delegation that I need to realize that the land won't be turned over to us tomorrow, that it will take many years. But meanwhile, we need to find ways of working with the agencies to continue to get access to the lands, until the lands are turned over to us. I think eventually they will be turned over."

For George Ramírez, working with the agencies for the sake of the land is the most important priority for now. "To us it is more important, the health of that mountain, because even if we don't get it back, that mountain affects us all. . . . Because, again it affects the village and the life of this village. So we've learned to say, 'okay, well let's work together and let's fix the Mountain, and then later on, we can argue who the land belongs to.'"

The argument that timber cutting should move exclusively onto private lands rings hollow here, where hun-



Solutions

dreds of thousands of acres of both public domain and private holdings were not long ago legally held community *ejidos* or *de facto* commons of the *ejidos realengos*. And local logging or woodcutting or ranching are and always have been about much more than earning a living wherever you can find it; they are part of a larger cultural rhythm of working the ancestral lands that tie the people and culture to this place. One can look today at the 80 to 100 million board feet of sawtimber currently being logged on the Taylor Ranch in southern Colorado, once part of the Sangre de Cristo Land Grant, to see that private land logging can have an even more devastating impact on watersheds, water quality, and downstream communities than better-regulated public lands logging.¹¹

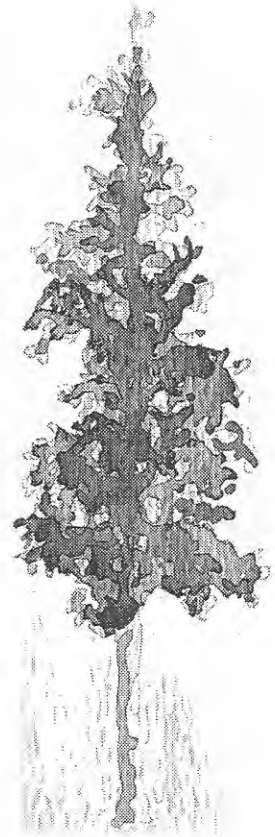
Short of having those lands legally returned, most villagers I know feel like Ramírez that traditional-use rights for local Hispano communities should, at the very least, be legally recognized and explicitly permitted under public lands policies. Local rancher George Maestas says, "Now that the communities no longer own the lands, at least the traditional uses by those communities should be preserved and continued, [because] the history of acquisition is indeed very distinct from acquisition of public lands in other parts of the country."

How do we redress the land grant issue to set things right? The ongoing experiment of the Vallecitos Federal Sustained Yield Unit is one imperfect attempt to make forest resources on old *ejido* lands available expressly for the benefit of local land grant communities.

The 1970 Blue Lake Act, mentioned in Chapter One, returned 48,000 acres of Forest Service land to the Taos Pueblo Tribe for traditional and religious use. In the 1975 Grand Canyon Enlargement Act, Congress similarly recognized Havasupai traditional-use rights by returning 185,000 acres of Park Service and Forest Service land to the tribe, as well as granting exclusive use of an additional 95,300 acres of land within the park.¹²

Some environmentalists worry that returning too much control of the land to local communities would result in inferior stewardship. It's obvious from a quick look at the history of the Forest Service and BLM that those agencies have been less than perfect stewards. Local community members believe it's hard to do worse, and the traditional local knowledge and ethics described throughout this report would help guide a different approach to stewardship that could well be an improvement.

The transfer of the Blue Lake tract from the Forest Service to local control is a notable example. Under Taos Pueblo stewardship since 1970, the Río Pueblo de Taos watershed has been returned to extraordinary ecological health. Today it is perhaps the most pristine watershed in the lower 48 states, producing water of such high quality that many local people drink it untreated directly from the stream. It's also important to recognize that part of the legal leverage for returning the land to the tribe was that it was part of a valid Spanish land grant — as are all 19 of the modern Pueblo Indian reservations in New Mexico — just like the many *ejidos* granted to Hispano settlers.



La Vida Floresta



[Top] A typical overstocked stand in the Carson forest. [Middle] First entry into the area for fuelwooding. [Bottom] Five years after a single harvest. (Photos courtesy of Max Córdova.)

Mexico Hispano villagers would be equally just and the right thing to do. This is more easily accomplished than one might imagine through community-agency partnerships that recognize and respect both traditional knowledge and modern environmental laws. The Collaborative Forest Restoration Program (CFRP), under the Community Forest Restoration Act, and the innova-

The Vallecitos Unit, the Blue Lake Act, and the return of land and traditional-use rights to the Havasupai have all stirred controversy within the national environmental community, but few can argue that these actions helped set right historic injustices and that they embodied principles of a holistic environmental justice. Finding a way to assure traditional-use access to ancestral lands for struggling northern New

tive Collaborative Stewardship program are examples of just such partnerships.

One CFRP project underway on the Valle Grande Grass Bank, on top of Rowe Mesa just south of Pecos, is using fuelwooding as a tool for restoration. Managed by Melissa Savage of The Four Corners Institute, the project is thinning the dog-hair thick undergrowth of small-diameter piñon and juniper in a 300-acre stand of ponderosa pine forest to restore the forest to a healthier condition. No ponderosas will be cut and all ponderosa snags and oaks are left for wildlife habitat, and the result will be a savannah-like ponderosa overstory and scattered piñon and juniper understory. Local residents are invited to participate by cutting the piñon and juniper and keeping it as fuelwood for personal or commercial use. Once manual thinning is completed and "ladder fuels" removed, the risk of catastrophic fire will be reduced and a more natural fire regime can be reintroduced. The project is implementing badly needed restoration, providing a critical resource for local communities, and strengthening partnerships between the Grass Bank, The Four Corners Institute, The Quivira Coalition, The Forest Trust, the Forest Service, and the local public.¹³

On the Camino Real District of the Carson National Forest, straddling the Taos-Rio Arriba County line and encompassing the Picuris Pueblo Reservation and some of the oldest Hispano villages in the region, Collaborative Stewardship has become part of official policy, has won prestigious awards, and is widely praised as a

national model. Rising out of the conflict of the 1995 spotted owl injunction, local residents and Forest Service employees went out on a metaphoric limb to develop the program as an alternative to a tiresome bureaucratic and adversarial relationship. In partnership with local communities, rather than imposing policy in the typical top-down manner, forest management projects are designed to enhance the ecosystem and biodiversity while providing resources and income for community members. Cooperative agreements with the Forest Trust, La Montaña de Truchas Woodlot, Picuris Pueblo, the Santa Barbara Grazing Association, and the Valle Grande Grass Bank have produced successful restoration projects, while benefiting local villagers who rely on fuelwood and other forest resources.

“Stewardship blocks” are one part of the Collaborative Stewardship program that illustrate the great potential for on-the-ground forest restoration that also benefits local communities. The Forest Service sets aside tracts of between one and four acres that are badly in need of thinning. Integrating local knowledge into the plan with input from local communities, the agency develops optimum prescribed conditions they want to attain. Max Córdova says that the Forest Service initially proposed thinning that he and others felt was too heavy, and they successfully argued for a lighter thinning. Community members are then contracted by the agency to thin to specifications, and they take home or sell the fuelwood and small-diameter trees they harvest.¹⁴

Healthy Lands, Healthy Communities

Collaborative Forest Restoration projects are off to a fair start but remain to be fully tested over the long term, both in ecological and economic terms. The Collaborative Stewardship initiative was also off to a good start and won prestigious national awards, but has recently been riddled with bureaucratic and implementation obstacles. But both programs provide that elusive model, at least, of real win-win arrangements that sustain both the land and people, and there is no good reason they cannot be replicated elsewhere. The ecosystem benefits, human communities and economics are strengthened, and all of our strongly held mutual values remain intact. It is certainly a challenging approach, however, because it requires the slow and patient work of building relationships, bridging ideological gaps, exploring common ground, and making a few mistakes along the way. But it is a radical and refreshing departure from confrontational business as usual, partly because it works.

Every local logger or woodcutter cited in this report, local ranchers, *acequia* activists, economic development planners, most environmentalists and agency representatives I have worked with, all share a fundamental respect for the land and the unique communities and culture of northern New Mexico. I don't know anyone working on these issues on either side of the fence who doesn't genuinely care about the environment. Maybe not all of us, but I believe most of us want the same things — healthy ecosystems *and* healthy communities — but we are often stuck in

the confrontational mode of arguing our positions rather than recognizing and pursuing our common interests, concentrating on agendas instead of vision. Various approaches to community-based forestry, Collaborative Forest Restoration projects, Collaborative Stewardship, and the other holistic approaches described in this report offer some direction to get us out of that dead-end trap. They also show the potentials that exist for shaping a future that nurtures the land while providing sustainable rural livelihoods for the people who've lived on that land for centuries.

That small-scale land-use traditions in northern New Mexico endure into this new millennium, even after the loss of traditional lands and resources, might seem an anachronism, but it underscores the phenomenal persistence and adaptiveness of local Hispano culture. As Bill deBuys puts it, "There are a great many ways to parse the reasons for this persistence but in the end nearly all of them come down to love of culture, love of place, and love of land. And this, in turn, is not three things, but one. It is the single most valuable artifact of the nation's most singular region."¹⁵

As I hope this report has made abundantly clear, access to wood products and other national forest resources, and the revenues they can generate, is critical to sustaining that singular cultural tradition. Community-based forestry provides a culturally appropriate and ecologically sound and sustainable way to access those resources, while reinvigorating the local economy and nourishing the continuity of centuries-old Indo-Hispano culture.

Healthy rural communities or

healthy ecosystems is not an either-or proposition. "You cannot save the land apart from the people or the people apart from the land," says Wendell Berry. "To save either, you must save both."¹⁶

Notes

¹ Wright 1997, p. 14.

² Barnes and Ramírez 2000; Brendler and Carey 1998; Carey et al. 1994; Committee of Scientists 1999; Forest Trust n.d.; Frentz et al. 1999; Gray et al. 1998; Henderson and Krahll 1994; Raish 2000b; Wilmsen 1997; Wright 1997.

³ Glanzberg 2003; Center for Biological Diversity et al. 2003, p. 4; Allen et al. 2002, p. 1428.

⁴ McCarthy 2001a; 2001b.

⁵ From an interview by the author on August 14, 2000.

⁶ Max Córdova, personal communication, April 28, 2001.

⁷ Eastman et al. 2000; Ebright 1980; 1987; 1994; Meyers 1998; Westphall 1983.

⁸ GAO 2001; U.S. Congress 2000.

⁹ Committee of Scientists 1999, p. 61.

¹⁰ Sam Hitt of Forest Guardians quoted in Neary 2001, p. A-4.

¹¹ Peña and Martinez 1998.

¹² Hirst 1976.

¹³ Savage 2003 and personal communication.

¹⁴ Martha Schumann, personal communication, August 20, 2001; USFS 2002.

¹⁵ Bill deBuys, personal communication, October 4, 2000.

¹⁶ Berry 1995, p. 56.

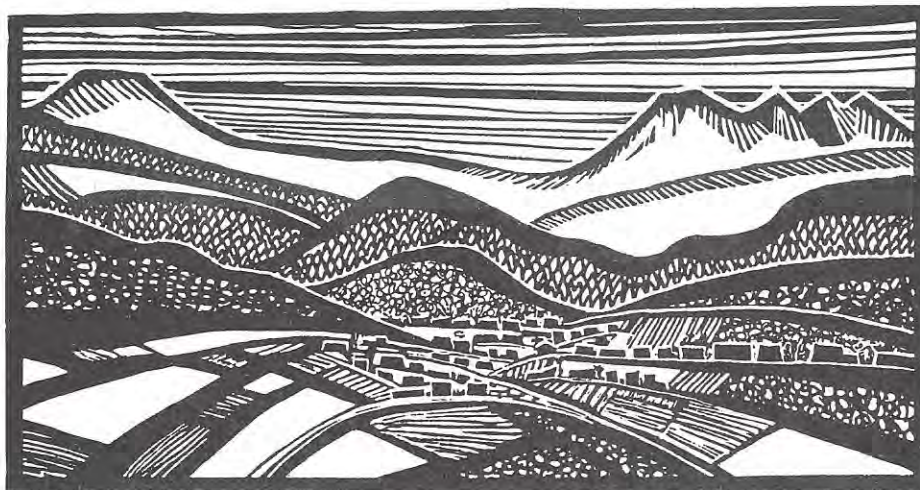
Appendixes



Appendix A

Forest Health and Restoration in Northern New Mexico

by Kurt Swearingen



R

The health of forests in the southwest has drastically declined in recent years. This decline is due to a variety of factors that cumulatively have led to changes in the ecological structure, composition, and processes within ecosystems (Allen et al. 2002, Dahms and Geils 1997, Smith and Arno 1999, Covington and Moore 1994). While forest health has declined, forest-dependent community health has also declined due to a lack of forest access, especially in northern New Mexico.

Overstocked, choked forests of densely packed trees characterize current forest conditions in the southwest. The increased tree densities have substantially increased competition for scarce soil resources,

especially water. Due to this increased competition, trees are more stressed, susceptible to attack by harmful pathogens, and less resilient to drought cycles common to the southwest. Indeed, widespread tree mortality has occurred in recent years on a scale much larger than within the range of natural variability (Dahms and Geils, 1997; Swearingen, 2003).

Unfortunately, the overstocked, unhealthy forests have greater negative implications for watershed and community health in the southwest. As tree densities have increased, the potential and occurrence of large-scale stand replacing fires has also increased (Figure 3).

Starting in 2000, even more devastating fires occurred in the south-

"I had an opportunity to rape the land, sell out, and leave. I didn't. While such a course by one individual might have seemed insignificant, the cumulative effects of many people pursuing that course would be disastrous. I assumed my responsibility for wise conservation and I call on you to do the same."

—Orville Camp,
woodland owner

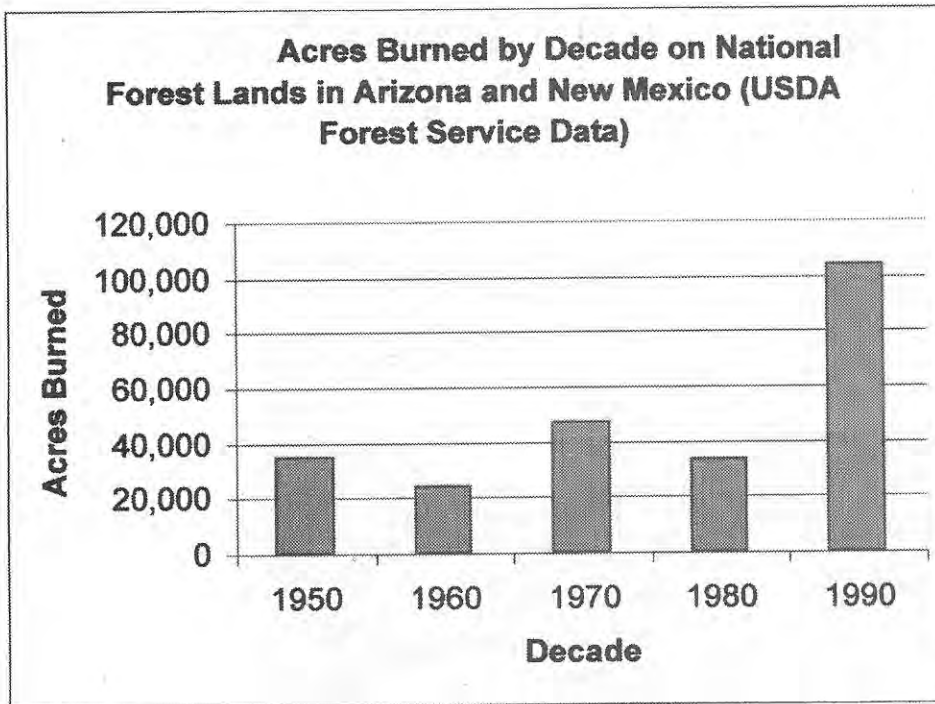


Figure 3.

west. In May of 2000, the Cerro Grande fire burned over 47,650 acres and destroyed 235 homes in Los Alamos, New Mexico. Then in 2002, the Rodeo-Chedeski fire burned over 450,000 acres in northern Arizona. Both of these record-breaking fires burned in ponderosa pine forests that had become overstocked with small-diameter trees and excessive amounts of dead wood. The destruction of communities near these fires could have been partially prevented if tree densities were consistent with pre-European settlement conditions (Figure 4).

Pre-European Forest Conditions

The forests of northern New Mexico co-evolved with numerous disturbance agents including fire,

pathogens, and weather. In many cases, these agents interacted within forests to favor distinct species compositions and stand structures. In kind, plants adapted to these agents by developing advantageous physical and physiological traits to survive and prosper.

Fire was the most common agent of disturbance within forested ecosystems of northern

New Mexico. The primary ignition source for pre-European fires in northern New Mexico included lightning and to a lesser extent Native Americans. The incidence and effects of fire varied across the landscape, but in general, fires removed downed woody debris, excess seedlings, and brush from the forested understory. Within lower elevation forest types, such as piñon-juniper and ponderosa pine, fires burned more frequently and less intensely than higher elevation forests. This created a "park-like" forest structure with little downed wood, few tree seedlings and brush, and large, but widely scattered trees.

Mixed conifer and spruce fir forests burned more infrequently, but much more intensely, often with complete destruction of all trees within



Forest Health and Restoration in Northern New Mexico

the burned area. These higher elevation forest types grow in zones of relatively higher precipitation, where increased plant growth results in more fuels and downed wood. The presence of more shade-tolerant tree species in these zones also permits the development of multi-storied stand structures,

resulting in contiguous fuels from the forest floor to the largest trees. Though destructive, stand replacing fires were common in these zones prior to European settlement, and favored the regeneration of aspen, which has decreased in regional cover by 46% with the advent of fire suppression (Johnson, 1994).

Pathogens were another major agent affecting forest composition and structure, though not as well researched as the role of fire. Insects and disease played a minor role in forested areas that were subject to periodic burning. In such areas, harmful pathogens were largely endemic, killing the occasional large tree or pocket of trees. They were far more destructive under drought conditions and in areas where fire was not as prevalent, such as rocky areas and within the lowest elevation woodland zones.

Changes in Forest Structure since European Settlement

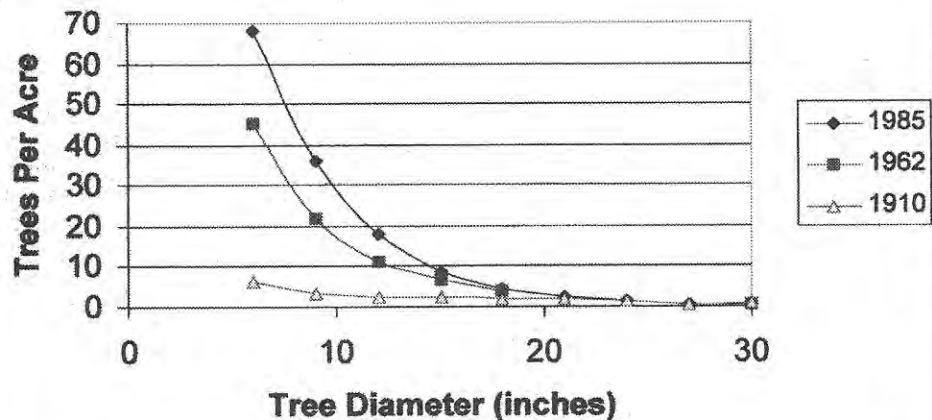


Figure 4.

Changes with European Settlement

European settlement began in northern New Mexico in the early 1500s. The first settlers built central communities in foothill regions, where access to local forests was largely confined to the lower elevation zones of piñon-juniper and ponderosa pine. Use of these forests was largely for basic subsistence. Wood harvesting and utilization was a reflection of the predominant pueblo and territorial styles of home construction of the region. Small diameter trees were sought and turned into round logs for ceiling supports ("vigas"), ceiling and wall coverings ("latillas"), and upright beams to support the roof. Tree diameters sought for these products varied, but were generally 2-4" for latillas and 6-10" for vigas.

Up until the 1800s, subsistence forest use did very little to change the

"...there is a general consensus that restoration efforts should reset ecosystems within a range of 'natural variability,' while reestablishing natural processes such as fire. Given the large build-up of fuels over the last century, many forests will need thinning of the smaller trees and removal of fuel ladders prior to reintroducing fire."

composition or structure of regional forests, especially at middle and upper elevations. Use was localized around community centers and only within lower elevation forest zones. Much of the "round wood" used was out of necessity since sawmills would not appear in New Mexico until the late 1800s.

Between the early 1500s and the middle 1800s, trees were harvested only for subsistence – very little of the regional forests was affected until the 1870s when more widespread exploitation began. Starting in 1870, major logging began in northern New Mexico, during which, for the first time, higher elevation forest types were entered and harvested on a large scale.

Railroads were built, sawmills were established, and rivers, such as the Río Grande were packed with freshly cut logs. This boom of logging in the southwest lasted until the 1950s. During this time, logging substantially changed the character of the forests. As larger diameter trees with good form, and of preferred species such as ponderosa pine and Douglas fir, were removed, smaller diameter trees, slash, and roads were left behind. Combined with increasing fires suppression effectiveness, the abundance of regeneration and small diameter trees developed into thick, overstocked forests that have become stressed, infested with harmful pathogens, and a threat to watershed and community health through susceptibility to stand replacing fires.

Restoration Needs

Restoration of forested ecosystems in the southwest is paramount. According to regional expertise, only a few decades remain in which to reverse the trends of forest and ecosystem health decline (Sampson et al. 1993). The rapid increase in forest fuels – including fuel ladders, downed logs, and increased tree densities – has outpaced fire suppression capacity. Firefighters are no longer able to control fires in forests with such conditions.

While tree densities continue to increase and forest health declines, the debate over how to restore these ecosystems continue. Fortunately, there is a general consensus that restoration efforts should reset ecosystems within a range of "natural variability," while reestablishing natural processes such as fire. Given the large build-up of fuels over the last century, many forests will need thinning of the smaller trees and removal of fuel ladders prior to reintroducing fire.

Thinning will play an even greater role in the future as more homes are built in the Wildland Urban Interface (WUI). Letting fires burn, and even the use of prescribed fire, is becoming increasingly risky near homes in the WUI. In such areas, thinning may be the only tool for restoring forests to pre-European conditions. Without thinning, forest fuels will continue to build and threaten more communities within the WUI.

Unlike other parts of the country, New Mexico has a unique historical disposition with regard to forest restoration. Historical forest use by communities in northern New Mexico



Forest Health and Restoration in Northern New Mexico

involved primarily the removal of the smaller diameter trees for later use as round wood products. With the rise in southwestern style construction in Santa Fe and other major cities in New Mexico, there is a thriving demand for small diameter forest products. Tapping into these markets could not only assist with restoring forests of the southwest, but just as importantly, it could also assist with restoring the forest-dependent communities of northern New Mexico, while protecting communities at the WUI.

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Appendix B

Restoring Natural Systems Through Natural Processes



*by Dr. Melissa
Savage, The
Four Corners
Institute*

*(This article
originally
appeared in The
Quivira Coalition
Newsletter,
October 2003,
Vol. 6, No. 2.)*

Restoration is a roadmap for repairing natural ecosystems that have been damaged by human activities. In the Southwest, grasslands, bosques, and forests have changed dramatically over the past century by intensive land uses. Natural structures and processes have been altered by historical overgrazing, water diversion, fire suppression, logging, exotic species introductions, predator control, and many other influences, some of which are mainly activities of the past. But history matters in natural ecosystems. Even if damaging activities stop, ecosystems may not be able to return to their historical conditions by themselves, or perhaps not in the foreseeable future.

Responsibility

A general consensus has emerged that humans bear a responsibility for restoring damaged ecosystems. It is also clearly in our best interests to do so. Southwestern ponderosa pine forests, for example, now densely packed with trees as a result of decades of "Smokey the Bear" policies, threaten our towns and villages with conflagrations. Historically, these pine forests burned often and with low-intensity fires whose flames usually reached only a few feet in height. These surface fires burned lightly through the forests, thinning young trees but preserving the old, fire resistant pines. Open groves of trees with grassy understories resulted, and this forest structure supported

*"...restoration
may work better if
ecosystems are
returned to within
a 'natural range
of variation.'"*

unthreatening fires. The fires created the forest structure, which in turn, supported these kinds of fires.

How, then, can we return ecosystems in the Southwest to more healthy, sustainable conditions? One approach is to alter the structure of ecosystems to mimic natural structures. Exotic trees species, such as Russian olive and tamarisk, can be cleared from riparian communities. Small trees can be thinned from the pine forests. But if we do so, what will prevent exotic tree species from regrowing and new thickets of pines from establishing?

Structure and Process

In nature, structure and process are two sides of the same coin. Riparian communities evolved with flooding, and ponderosa pine forests evolved with low-intensity surface fires. Restoring natural structures alone will not be enough to recreate ecosystem integrity. For communities to be able to sustain natural structures, they will need to experience the same kinds of processes with which they evolved. In riparian communities, flooding scoured away debris and created the conditions that cottonwood trees require to establish. In ponderosa pine forests, frequent fires prevented the germination of thickets of young trees and the accumulation of abundant surface fuels.

But to restore historical structures and processes, we need to understand what they were like when ecosystems were intact, before significant human influences altered them. When restoration ecologists reconstruct historical conditions in ecosystems, sometimes a time-consuming task, these

are called *reference conditions*. Historical photographs, tree ring records, fire-scar evidence in trees, historical documents and diaries, all can help to reconstruct reference conditions for restoration.

Still, we know that natural systems are highly dynamic. The reconstruction of the precise structure of a forest of 100 or 150 years ago only gives us the state of the forest at one moment in time. A century and a half ago, for example, the Southwest was coming out of a long climate period known as the "Little Ice Age." Climate conditions at present are different, and continually changing as well. It may not be appropriate to try to restore forests to the structure present during a precise moment in time. This is especially true for ponderosa pine trees, which are highly sensitive to climatic conditions for germination, and appear to regenerate only episodically, at intervals of decades or more.

Range of Variation

Instead, restoration may work better if ecosystems are returned to within a "natural range of variation" (Landres et al. 1999). Ponderosa pine forests, for example, not only have a variability through time because of climate change, but also across the landscape. Forests across the region vary in the density of trees, the grass and forb species that occur in the understory, climatic conditions, and kinds of wildlife inhabiting the forest. We could not possibly reconstruct how each forest stand looked in the past.

Instead of determining precisely what the reconstruction should look



Restoring Natural Systems Through Natural Processes

like, we can rely on nature to accomplish most of the work. We can push the ecosystems back within an envelope of natural variability, and allow natural processes to restore the appropriate variability. If we can restore the natural processes, the natural structures should follow. The “natural range of variation” approach is imprecise, but it is flexible, less expensive, and bodes well for the creation of a self-sustaining ecosystem. The process model of restoration means working with the evolutionary context of ecosystems.

Restoration using natural processes can also be accomplished incrementally, letting the natural system find its own dynamic equilibrium. Although restoration efforts are needed soon to reduce the vulnerability of many systems, we should be cautious in the implementation of treatments. Trying to accomplish restoration all in one blow may cause more harm than good. Instead, a careful, incremental approach can allow us to learn as we practice restoration.

The Society for Ecological Restoration defines restoration as “the processes of assisting the recovery and management of ecological integrity. Ecological integrity includes a critical range of variability in biodiversity, ecological processes and structures, regional and historical context and sustainable cultural practices.” A successful restoration will return **resilience** to ecosystems – communities will be able to withstand change without being damaged. Restoration should aim to set ecological trends in the right direction toward enhanced resilience (Allen et al. 2002).

The Case of Southwestern Ponderosa Pine Forests

Restoration has become an important forest management tool in southwestern ponderosa pine forests. Frequent, low-intensity fires have been replaced by high intensity, high mortality crown fires. From 2000-2002 alone, we saw Arizona’s 469,000 acre Rodeo Chedeski, New Mexico’s 48,000 acre Cerro Grande and Colorado’s 137,000 acre Hayman fires. These fires are anomalous in both size and destruction. These are not the fires of our memory in this semi-arid region. We have recently come to anticipate and dread fast moving, intensely hot fires that reach into the canopy, leaving in their wake blackened hill slopes with widespread mortality, unstable slopes, and flooding. For decades, such fires have been unknown. Why have recent years brought such dramatic changes to the fire regime in the Southwest? To answer this question, we must look at the intersection of both natural and human-caused factors.

Climate Matters

To a large extent, vegetation communities are pulled along by climate conditions. Precipitation and temperature determine the size and complexity of the plant ecosystems, and the kind of disturbance conditions the systems are subject to – fire, flooding, and violent storms. In the Southwest, a dry, temperate climate prevails. But through decades, centuries, and millennia, those conditions have cycled continuously. Early decades of the last century, for example, were so wet that an unusual cohort of pines established that captured

“Restoration using natural processes can also be accomplished incrementally, letting the natural system find its own dynamic equilibrium. Although restoration efforts are needed soon to reduce the vulnerability of many systems, we should be cautious in the implementation of treatments. Trying to accomplish restoration all in one blow may cause more harm than good. Instead, a careful, incremental approach can allow us to learn as we practice restoration.”

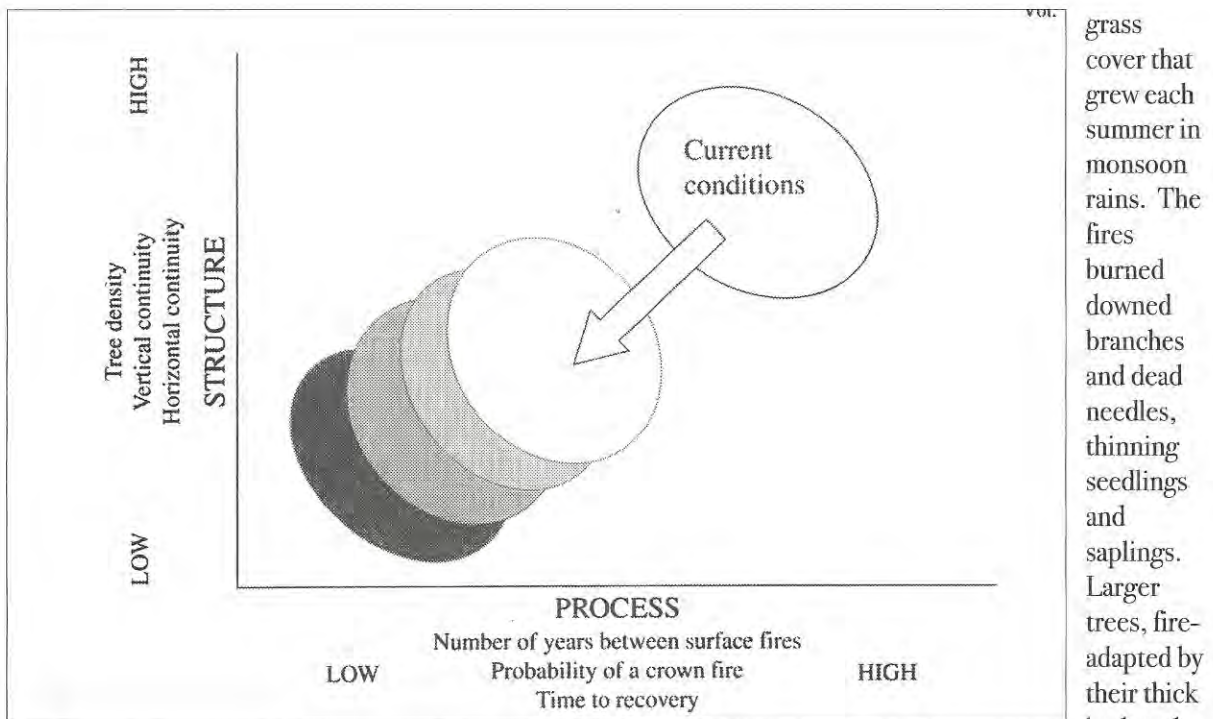


Figure 5. Schematic representation of the restoration concept. If the natural range of variability is seen as a multidimensional "envelope" of ecological conditions, then the goal of restoration is to move an altered ecosystem back toward its pre-disruption envelope (the darkest region), and to allow natural processes over time to dynamically re-establish a range of natural structural conditions. (From *Ecological Restoration of Southwestern Ponderosa Pine Ecosystems: A Broad Perspective*, Allen et al, 2002.)

much of the regional forest, and continues to form the greater part of many pine stands.

A short-term fluctuation, the El Niño/La Niña cycle, brings relatively wet conditions to the Southwest (El Niño), followed by relatively drier conditions brought by its twin (La Niña). Last spring and summer in the Southwest, a mild El Niño episode was fading, bringing to an end the somewhat wet conditions of the past year. This year (2004), when La Niña arrives, drier conditions will prevail throughout the regional forests.

Why does climate matter? Because climate patterns cause fire patterns. Regional patterns of moisture, temperature, lightning, and wind determine when and how intensely fire will burn in forests. The primary fuel for historic low-intensity fires was the lush

lack of lower limbs, were not killed in these light fires. With precipitation too low to produce a large quantity of fuels, even in dry, warm conditions with an abundance of lightning, these light fires were able to burn on an average of every 2 to 20 years or so (Swetnam and Betancourt 1990). Early explorers described these forests as open colonnades of large trees, groves open enough for a horse to gallop through.

Different Places, Different Forests

Not every forest in the West grows under this kind of climate and fire regime. Farther to the north in the Rocky Mountains, cooler conditions mean moister forests in which fires burn less readily. Fires are postponed for longer periods of time, and fuels accumulate. When fires do ignite



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under temporarily drier conditions, far more severe burns occur, usually as crown fires that burn large areas. The Yellowstone Fire of 1988 was such a fire, destroying forest stands over a very large area, inspiring the fascinated attention of the public as a famous and beautiful National Park burned. The Yellowstone Fire, however, was probably a natural fire, burning on a natural interval of from 300 to 400 years. Such "crown fires" which cause mortality in the canopy over extensive areas, are characteristic of some forest ecosystems. Not so the open, semi-arid pine forests of the Southwest.

Why then, are we seeing half-million acre crown fires in the Southwest? Clearly, part of the explanation is that we appear to be entering a period of extremely dry climate in the Southwest region. The fluctuations in climate that we have seen over past centuries certainly include multiple decades of deep drought. These episodes have been referred to as megadroughts, and it appears that the Southwest is poised to enter a megadrought. For example, the water year (October-September) of 2002 was among the driest year in many Western states, as measured by the instrumental record, and was surrounded by other very dry years (Betancourt et al. 2003). Such a drought would be well within the natural range of climate variability.

Not By Climate Alone

But climate has varied for hundreds and thousands of years in the Southwest, yet the size and severity of current stand-replacing fires in the Southwest is unprecedented. Forest

ecologists and climate researchers, using tree-ring and fire-scar analysis, pollen and charcoal studies, repeat photography, and stand structure analysis, have yet to find evidence of large crown fires in southwestern pine forests. What explains this huge shift in fire behavior? The answer to this question lies with huge changes in the forest in the past century.

Although indigenous peoples lived in and used these forests for thousands of years, the entry of Euro-Americans into the Southwest caused extraordinary changes, particularly from around 1880, when social and demographic shifts changed the use of the forests. No one factor perhaps had more impact than the completion of railroads, which allowed the transport of cattle from Western ranges to Eastern markets.

There is a strong ecological marker for the entry of domestic livestock into southwestern forests. If grass is the primary fuel for low-intensity fires that burned on the forest floor, then grazing at the intensive levels of late 19th century stocking meant the virtual removal of that grassy layer. At no time since has the level of grazing in ponderosa pine forests reached the same level of intensity since the decades of the late 19th and early 20th centuries. When researchers look at the fire scar record contained in tree rings, they see a remarkable marker. At about the same time that livestock entered the forests, fire frequency dropped precipitously throughout the regional forests. The removal by grazing of the fine fuels that supported surface fires meant a virtual cessation of burning, in ponderosa pine

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Piñon-juniper encroachment in Apache Canyon. 1945 [top]; 1984 [bottom]. (Photos courtesy of New Mexico Museum of Natural History.)

forests at least.

Forests that had burned every few years or every few decades for thousands of years simply stopped burning. The last nail in the coffin was the increasingly effective fire suppression activities of the government. After World War II, the technologies developed during the war were put to use in suppressing fires throughout the West.

Fuels from falling branches and dead trees began to accumulate. We

were constructing a bonfire on the forest floor, but preventing it from being ignited. Wetter periods simply meant more forest productivity and more material being added to the wood pile. Fire suppression mattered less in forests where the natural fire cycle is long – in lodgepole pine forests for example. In such forests, when fuel levels reach an adequate level, no amount of fire suppression effort would be able to quench the ferocity of the fire. But in southwestern forests, the length of time between natural fires meant that many decades of suppression would easily alter the natural balance.

So the woody fuels began to accumulate under ponderosa pine forests. The 1950s, with a severe but fairly natural level of drought, saw the first truly unnatural crown fires to burn in the region. Most fire sizes were in the several thousands of acres range, but one, the Carrizo Fire in Arizona, burned 90,000 acres. The management response – put the fires out harder.

After the 1950s drought, a relatively wet period ensued, especially from 1976 to 1995. The ponderosa pine forests thickened. Instead of open, grassy stands of trees, most stands were choked by down dead wood and thickets of young trees suppressed by competition. Understory grass and forb communities declined in abundance and diversity (Covington and Moore 1994). Thick mats of slowly decomposing pine needles on the



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forest floor prevented new pine regeneration. Old and large trees suffered from competition from the many small trees crowding the stands.

Most stunning was the huge increase in the number of young trees. Densities of mature trees (> 12 inches in diameter) ranged between 8 to 51 trees per acre around 1900 in Southwestern ponderosa pine ecosystems, (Allen et al. 2002), with probably relatively small numbers of seedlings and saplings. Currently, densities of trees of all sizes in these forests often exceed 1,000 trees per acre, and sometimes more than 2,000 (Allen 1998). Not only do these thickets of young trees provide a staggering amount of fuel, they also represent a “ladder” to the canopy of the forest, easily providing a fire path to crown fires. At the same time, the trees most resistant to fires, the mature pine trees, were largely removed from the forest by logging. By the end of the 20th century a human-made bonfire had been laid.

What has happened from the mid-1990s to the present in southwestern ponderosa pine forests, then, has been a collision of natural drought cycles with forest conditions massively altered by human policies. The great fires of 1996, 2000, and 2002 were not accidental, but rather inevitable, given the scenario that had unfolded over the past century. Given the size and continuity of the fuel load, it would have been truly astonishing, Betancourt et al. (2003) suggest, if the crown fires happening in recent years were not abnormal in size and severity.

What Will the Next Decade Bring?

Southwest regional climate can be understood to a large extent from the slow and large changes in sea surface temperatures. In 1995 the North Atlantic turned warm and in 1998 the Pacific went cold, the same pattern that occurred last in the 1950s (Betancourt et al. 2003). Many climate scientists now believe that we are facing another megadrought like the one that occurred in the 1950s. The difference between that period and the present is that there is another 50 years of fuel accumulation.

Unlike the situation in the 1950s, the problem is now widely recognized. Billions of dollars and many fire fighters’ lives have been spent recently trying to suppress these huge fires. Decades of moist conditions encouraged many people to build homes deep within the forests, made with rustic, i.e., woody, materials, often on narrow roads to protect privacy. Continued crown fires in the region will mean continued suffering and hardship for many small rural communities, and even larger towns.

The ecological effects of crown fires in the ponderosa pine forest are equally devastating. The long-term effects on forests that did not usually experience complete mortality over large areas on an evolutionary scale are unclear. How will these forests recover? How will seeds be carried long distances to regenerate the forest? Is it possible that other species, such as grasses or shrubs, may capture the burn sites and make it difficult or impossible for ponderosa pine to reestablish? If so, does this mean that large portions of

“Many climate scientists now believe that we are facing another megadrought like the one that occurred in the 1950s. The difference between that period and the present is that there is another 50 years of fuel accumulation.”



southwestern forests may be converted, at least for some period of time, to other stable ecological communities (Savage, unpublished data)? The long-term fate of the ponderosa pine forest on these severe burns is not understood well.

There are multiple ecological effects that may occur because of forest change. Another is the potential for severe decrease in biological diversity. Southwestern ponderosa pine forests provide habitat for at least 250 species of vertebrate animals (Patton and Severson 1989). Crown fires will have a large, but unknown effect on these species, particularly threatened, endangered, and sensitive species. Some animals are highly dependent on certain forests structures, such as old and large trees, that will not be replaced for many decades. Large oak trees, commonly found in ponderosa pine forests, for example, are crucial for many wildlife species. Moreover, many burn sites are especially vulnerable to invasion by aggressive non-native plant species. These species are often difficult or impossible to remove once established (Allen et al. 2002).

Severe fires also greatly increase the chance for severe flooding and erosion. Since many crown fires burn in the dry foresummer – May and June – in the Southwest, the burn site may be particularly vulnerable to erosion and flooding during the monsoon rains that follow. Soils are left unprotected by leaf and litter cover from the force of the rain, and unstable without the mat of roots to prevent wholesale movement downslope. Without forests to absorb and hold downpours, flooding and rapid

erosion have been the norm at severe burn sites.

What Is To Be Done?

The prospect for changing the conditions in millions of acres of Southwestern ponderosa pine is not a cheering one. Fierce crown fires, such as those that burn in extreme weather conditions of drought and high winds, are difficult and sometimes impossible to contain. The task that needs to be accomplished to stave off such unnatural fires seems to require too much money and effort. Having laid the bonfire, how can we unmake it in time?

The single best indicator that the risk of stand-destroying fire has been lowered would be the return of low-intensity, surface fire. Scientists and managers have been thinking in recent years about the most constructive ways to reduce the risk of crown fire and to improve the integrity of ponderosa pine forests. Allen et al. (2002) suggest 16 broad principles to foster implementation of a diverse range of ecologically justifiable restoration projects.

1. The most fundamental priority of restoration must be the rapid reduction of the widespread risk of crown fires across the landscape.

2. Given the scale of the task, restoration work must be strategically positioned in the landscape. Priority areas should include proximity to human communities and important watersheds, old-growth forest stands, habitats of sensitive species, and strategic location that can effectively breakup the flow of fire across the landscape.



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3. Wherever possible, local "reference conditions" should be developed, but in the face of incomplete knowledge the goal is to create ecological integrity and function.

4. Restoration should be thought of and implemented as a series of conservative interventions. Restoration accomplished all at once may be disruptive and nonproductive. More aggressive treatments may be appropriate near human communities.

5. Restoration should take advantage of any existing forest structure that may be useful. Clumps of trees and interlocking tree canopies, for example, should be preserved for wildlife that need them.

6. A more natural species composition should be encouraged. Restoration of natural fire regimes, in most cases, should be able to restore the balance of species without more intrusive mechanical thinning. The restoration of more natural fire regimes should also help restore a robust understory of grasses and forbs, essential to carry low-intensity fire.

7. Large and old trees should receive special attention to protect them during the restoration process. These components form valuable wildlife habitat, and are increasingly rare in our southwestern forests.

8. Restoration projects should keep in mind that ponderosa pine is known to regenerate episodically. Because of this, it may be wise to retain patches of young trees to maximize options for future forest structure.

9. Restoration projects

should pay attention to both structure and process in the forest. For example, thinning young trees to reduce the fuel load will not yield long-term results unless low-intensity surface fires are also reintroduced.

10. Care should be taken to minimize the potential for the invasion of non-native plant species. One pathway for non-native invasion is the practice of seeding with understory plant species. These seed mixes are usually contaminated with weed species, which thrive in the disturbed conditions of restoration treatments.

11. Restoration efforts should respect the high degree of regional heterogeneity due to topographic, hydrologic, and soil variability. No one restoration prescription will work across the landscape.

12. Some communities within the ponderosa pine forest need special care, those with higher than usual diversity, and streamside communities for example, and these should be assigned special protection.

13. Managers and restorationists should be mindful that small projects add up to large impacts across the landscape. The accumulative effects of restoration projects across the landscape need to be monitored over time.

14. Too dense tree canopies have meant the decline of understory grasses and forbs. Understories should recover quickly, but they need protection against livestock grazing while they are recovering.

15. Restoration is a new practice, and we have much to learn. It is essential that a monitoring program be

"Restoration efforts should respect the high degree of regional heterogeneity due to topographic, hydrologic, and soil variability. No one restoration prescription will work across the landscape."

put in place with every restoration project so that we can learn if the work is accomplishing what we hope it will.

16. Ecological restoration may take a century or two to be fully realized in southwestern forests and will take a long-term social and financial as well as scientific commitment.

Restoration through Natural Process

There are no certainties in managing the natural world. Almost always, we find ourselves faced with unintended consequences, sometimes with stunning and unfortunate consequences. We are more likely to achieve our objectives if we are able to treat restoration as a work in progress than a technical certainty. Allowing natural processes to accomplish restoration seems to offer the most reliable and flexible way to return resilience and sustainability to natural ecosystems whose inner workings we barely understand.

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Appendix C

Living with Bark Beetles in Northern New Mexico



by Kurt
Swearingen

*(This article
originally appeared
in The Taos Land
Trust Newsletter,
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Number 14.)*

Mixed woodlands of piñon and juniper throughout northern New Mexico have experienced a recent epidemic of the pine engraver beetle (*Ips spp.*), which currently stretches from Albuquerque to Durango, Colorado. Within this region, the bark beetle epidemic has resulted in 10% to 100% mortality of piñon pines. To understand how such widespread mortality could occur we have to look into the past.

Historical changes in our mixed woodlands can partially explain the current problems. Prior to increasingly dense human settlement over the past several centuries, piñon-juniper woodlands were kept in check by fires and other natural disturbance agents, including bark beetles. Frequent range fires encouraged grass and killed seedlings of piñon, juniper and sage, preventing woodlands from expanding into lower elevation sites. Through widespread grazing – particularly with the sudden arrival of the railroad and expanded markets in the late 1800s – and fire suppression, woodlands were able to expand into lower elevation sites

and increase in total land area. Tree density within the woodlands also increased, leading to more competition for critical resources like water, nutrients, and sunlight.

Then came the recent droughts. Trees that were already stressed from growing at lower elevation sites, or with too many neighboring trees, were even more stressed by the droughts. Physiologically, this stress resulted in an inability of the trees to produce enough defensive compounds and sap pressure to resist bark beetle attacks. Populations of these native bark beetles, which are typically a benign part of the ecosystem, rapidly exploded in 2001, infesting entire hillsides of weak piñon trees.

The pine engraver beetles are found mostly in mature and/or stressed piñon pines, rarely attacking seedlings. Infestation begins with a female beetle that lands on a stressed piñon and emits a pheromone. This pheromone attracts large numbers of male beetles, which upon landing, begin to bore into the bark on the tree's main stem. This boring looks like a small thumb-sized amount of sap on the bark's surface and

*"Taking good care
of woodland
habitats, whether
private or public,
benefits the
natural
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community as a
whole."*

is usually red. Eggs are laid and fertilized along superficial tunnels under the bark that sever the cambium, which is the living circulatory tissue of the tree. Once eggs hatch, the larvae feed on the remaining cambium, completely cutting off the flow of nutrients and killing the tree. The larvae quickly pupate, transform into adults, and finally bore back out of the tree. This cycle usually occurs two to three times within a growing season, but warmer winters and springs the last three years have allowed bark beetles to complete up to five generations in one growing season.

Once a tree is infested, there is usually little hope of saving it. Most of the cambium is severed and the nutrients cease to flow within one to two weeks of infestation. In addition, the beetles carry "blue-stain" fungus and introduce it into the tree, plugging the wood pores and preventing water from reaching the tree's crown.

Unfortunately, there is little that can be done to control the current epidemic, but some positive solutions exist to better manage piñon trees in the future. Removing infested trees will do little to prevent infestation of otherwise healthy trees, since bark beetles can fly long distances from neighboring infested areas. Thinning and cleaning of areas that are currently healthy is likely to work better. Increasing the spacing between healthy, uninfested trees will provide better access to water, nutrients, and sunlight, giving each tree a better chance of a long and vigorous life and a greater ability to resist bark beetles. Adequate spacing varies by locations, but a good

average is 20 feet between trees.

Retaining young seedlings is a good idea too, as they can eventually replace any trees killed.

In areas of heavy mortality, removing all the dead trees is important for reducing the fire hazard. To reduce erosion, portions of trunks and branches should be placed across the slope. In addition, spreading suitable grass seed is very important to prevent colonization by invasive weeds, protect the soil surface, and improve aesthetics.

If left exposed during the breeding season, bark beetles can also infest freshly cut green limbs, firewood, and tops. Green firewood should be covered with clear plastic, making sure to bury the edges below ground line. This will "cook" any bark beetles, while preventing them from spreading. Green limbs and tops should be burned if burning is permitted. Otherwise, chipping and/or piling debris and then covering the piles with clear plastic until burning is permitted is also effective.

Droughts and other agents that stress trees are not going away any time soon. Therefore, maintaining private and public woodlands in a healthy and green condition will require periodic thinning and cleaning. Before you begin cleaning up your woodland, consider seeking advice from a professional forester, arborist, or natural resource agency — they can help evaluate your particular woodland, explain the range of potential benefits, assist you with finding a contractor, and identify financial assistance programs. Taking good care of woodland habitats, whether private or public, benefits the natural environment and the local community as a whole.



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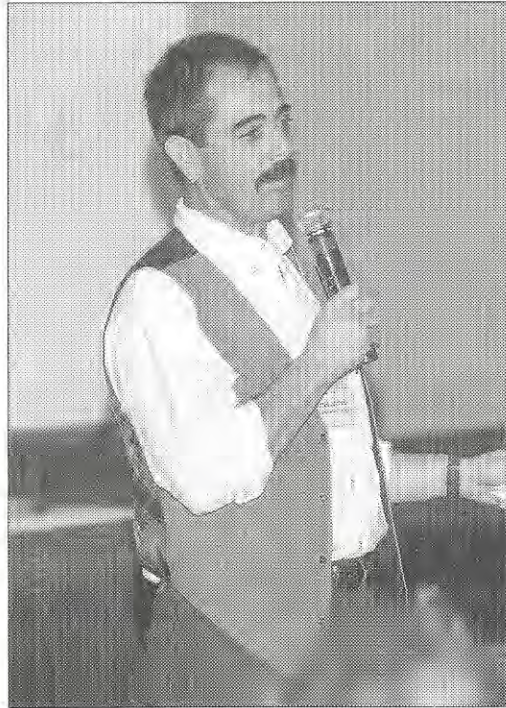
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About the Author

Ernest Atencio has worked in his native northern New Mexico and throughout the West for many years exploring and promoting the essential linkages between conservation, culture, and community. Currently Executive Director of the Taos Land Trust, he has also worked as an environmental activist, environmental educator, wilderness instructor, national park ranger, and laborer. With an MA in applied anthropology, he has conducted ethnographic field research and published works on sustainable development on the Tibetan Plateau, Havasupai oral history, Navajo forestry, cowboy culture, and Hispano land stewardship traditions in rural northern New Mexico. Among his many publications, he is the author of *Of Land and Culture: Environmental Justice and Public Lands Ranching in Northern New Mexico* and several features for *High Country News*.



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