

GREEN FIRE TIMES

News & Views from the Sustainable Southwest

**IMAGINE AN EQUITABLE AND SUSTAINABLE RECOVERY
LOOKING TO THE PAST TO INFORM THE FUTURE
ECOSYSTEM RESTORATION IN NORTHERN NEW MEXICO**



**LIFE IN TAOS: TALE OF A FAMOUS WOODCARVER
DISRUPTING THE HOME BUILDING INDUSTRY
BUILDING A REGENERATIVE FOOD ECONOMY**

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COVER COMMUNITY MEMBERS CELEBRATE LATINO CONSERVATION WEEK IN 2018 BY RAFTING DOWN A STRETCH OF THE RÍO GRANDE NEAR RADIUM SPRINGS, N.M. DURING AN ANNUAL RAFTING EVENT HOSTED BY THE NUESTRA TIERRA CONSERVATION PROJECT. PHOTO © GABRIEL VASQUEZ, CITY COUNCILOR, LAS CRUCES, N.M.

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Green Fire Times provides a platform for regional, community-based voices—useful information for residents, businesspeople, students and visitors—anyone interested in the history and spirit of New Mexico and the Southwest. One of the unique aspects of *GFT* is that it offers multicultural perspectives and a link between the green movement and traditional cultures.

Storytelling is at the heart of community health. *GFT* shares stories of hope and is an archive for community action. In each issue, a small, dedicated staff and a multitude of contributors offer articles documenting projects supporting sustainability—community, culture, environment and regional economy.

Green Fire Times is now operated by an LLC owned by a nonprofit educational organization (Est. 1973, SWLEARNINGCENTERS.ORG). Obviously, it is very challenging to continue to produce a free, quality, independent publication. We are seeking financial support to help us institute a new business model and formalize a mentorship program for writers, aspiring journalists and documentarians. We also need funding to make our archive more accessible and to upgrade *GFT* online. Please consider a tax-deductible donation. Checks may be made out to Southwest Learning Centers, Inc. (with a notation 'for *GFT*') and sent to: P.O. Box 8627, Santa Fe, N.M. 87504-8627.

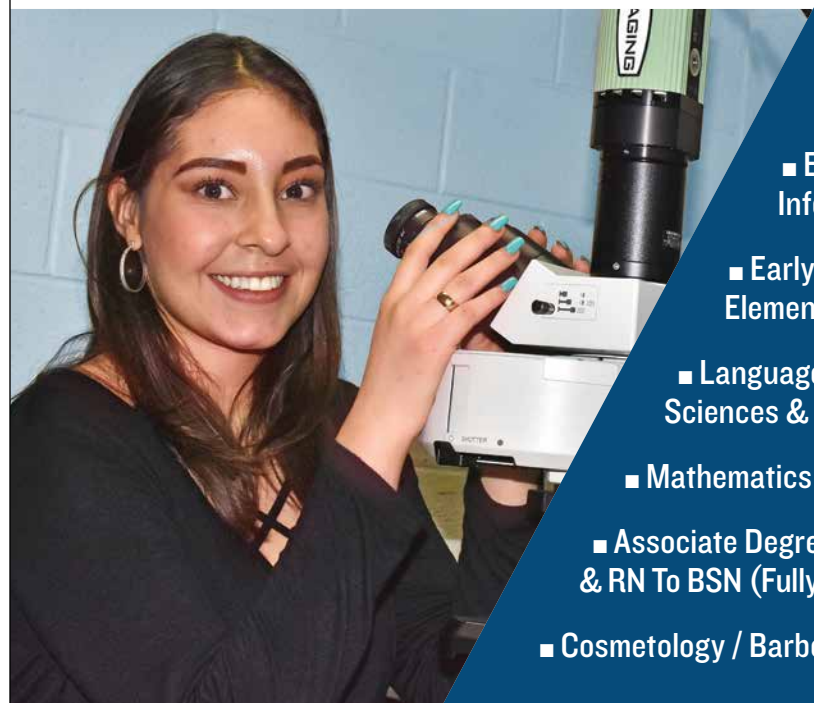
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CHASING THE ELUSIVE

EXPLORATIONS IN ACHIEVING SUSTAINABILITY

DARE TO IMAGINE AN EQUITABLE AND SUSTAINABLE RECOVERY



Southside Santa Fe seen from a garden at the Institute of American Indian Arts © Seth Roffman

BY **KATHERINE MORTIMER**

When you think about getting beyond the impacts of COVID-19, the natural initial vision is to return to what things were like before the pandemic hit, including the reopening of the same businesses that were open before. But remember how local retail was suffering from the expansion of online sales before that became the most common way to shop during the pandemic? Are we really going to be able to stuff that particular genie back in its bottle? Is it even desirable? What if, instead of imagining a return to 2019, we imagine a 2021 and beyond that is more equitable, sustainable and even happier than what life was like in 2019?

We are poised as a country and a global community to start the work of rebuilding the economy as more people get vaccinated for COVID-19. This is an opportunity to be strategic and visionary about how that recovery effort is done to launch us to a future that is healthier and happier for everyone. While that might sound a bit fanciful, it is precisely how this country got started: a new country free from the prejudices of where we came from. Over the past 245 years, we took a few dramatically wrong turns—genocide of Native communities and enslavement of black people, to name two extreme examples. But we can reset that vision of a place where everyone has an equal opportunity to live a comfortable, healthy and happy life.

So how do we get there? Start with the vision and work backwards. I would imagine that there is a lot of similarity between different people's vision of an ideal society; things like no homelessness or poverty or hunger for example. In order to know how we are progressing to realize that vision we need to track progress using metrics that measure how well we are achieving these altruistic goals. Some are already measured directly, such as poverty rates, homelessness rates, participation in food pantries and meal distribution, and others. Some goals aren't easily directly measured, so it is necessary to select proxy metrics that are a logical outcome of

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Economic Development in New Mexico

COVID-19's impact on New Mexico is likely to be felt for years to come. The state added 15,000 new jobs in 2019, but economic growth was abruptly halted as thousands of businesses closed statewide. Restrictions on travel and gatherings caused in-store sales to plummet. Unemployment levels in New Mexico are among the highest in the nation.

The pandemic exposed deep societal inequities and economic challenges. As the virus recedes, society as a whole will have opportunities to address long-standing disparities. What opportunities have evolved as a result of how the world has changed? How can New Mexico prepare for its "next normal"?

The pandemic has left thousands of New Mexicans—particularly those in low-income and already vulnerable positions—having to deal with layoffs and unpaid bills. For most, remote work is not possible. Fifty-one percent of adults in households with children lost employment income since March 2020, according to New Mexico Voices for Children's KIDS COUNT Data Book. A survey by Latino Decisions found that 20 percent of Hispanic families in New Mexico had someone in their household lose a job due to COVID-19. Fifty-three percent reported having under \$1,000 in savings.

New Mexico is well positioned to recover. More businesses have been moving into the state than are leaving. NMSU Economics professor Jim Peach says that substantial investments in education, workforce training and recreational amenities would strengthen New Mexico for the future.

Economic Development Secretary Alicia Keyes has said that any long-term plan would likely focus on eight key industries, which range from aerospace to advanced agriculture to film and television.

A new position at the state's Department of Energy, Minerals and Natural Resources will support recruitment of alternative-energy companies, as well as job-training efforts in northwest New Mexico. That area has an opportunity to pursue an economic development strategy that leverages local assets and prioritizes quality of life, with a focus on tourism and recreation, solar power generation/storage and mine reclamation/plant decommissioning.

Economic recovery must be rooted not only in meeting people's basic needs, but also in supporting their ambitions and aspirations. An important part of creating a diversified and resilient economy can be based on the skills and resources generations of people have developed and preserved. For example, Diné groups propose to cultivate an agrarian economy to "harness the knowledge of elders and modern climate-sensitive farming techniques to help farmers rejuvenate the soil and create food security while building an important new natural resource economy."

Building New Mexico's Green Economy

New Mexico and the nation are building a clean-energy economy. Santa Fe Institute professor Chris Moore, a former Santa Fe city councilor, is co-author of a new Institute report that offers strategies for harnessing climate action as a growth industry. Moore contests the oft-repeated assertion that the climate crisis means hamstringing the economy and sacrificing jobs. He says that it's completely the opposite—a clean and healthy environment does not preclude a sustainable and diverse economy, especially for a state like New Mexico that has a wealth of renewable resources.

The rising demand for renewable energy will draw investments to areas where New Mexico can grow. A newly created position at the state's Department of Energy, Minerals and Natural Resources is intended to support the recruitment of alternative-energy companies, as well as job-training efforts in that area.

The transition to a green economy can lay foundations for new, sustainable industries. Forums are being held to build collaborative ties among counties. The pro-renewable group Powering New Mexico facilitated an online panel for economic development professionals to discuss ways to attract more clean-energy investment to communities. New Mexico State University (NMSU) and the North American Manufacturing Initiative (NAIMI) are working together on a statewide initiative to help communities—particularly coal-dependent counties in northwestern New Mexico—take advantage of emerging green business initiatives. This could include new products and services in everything from energy-efficient retrofits for homes and businesses to developing new technologies for clean hydrogen production. There are also efforts to attract more firms like Facebook to New Mexico that want to take advantage of the state's low-cost solar and wind generation to power facilities.

More growth is likely even after the U.S. reaches 50 percent renewables in 2030 and then strives to convert the entire grid to non-carbon generation. It is projected that for every fossil fuel job that exists today there will be more than twice as many jobs in the renewable sector.

NEW TOOLKIT TO SUPPORT RURAL OUTDOOR ECONOMIES

The outdoor economy is a \$2.4-billion sector in New Mexico. Outdoor recreation offers opportunities for sustainable economic and community development, but many communities need help to implement plans. The New Mexico Outdoor Recreation Division (ORD), a division of the New Mexico Economic Development Department, is working with rural communities to support efforts to diversify local and regional economies.

The ORD is assisting efforts to promote a new toolkit from the Outdoor Recreation Roundtable (ORR), a coalition of outdoor recreation trade associations, made up of 33 national members, serving 110,000 businesses. The coalition is offering the toolkit to state offices of outdoor recreation, industry businesses, community chambers and others. The Rural Economic Development Toolkit provides information on best practices for building an outdoor recreation economy. It also contains a list of federal grants and technical assistance that will support communities in securing funding and services.

“Outdoor recreation is one way to diversify rural economies and even out boom and bust cycles,” EDD Secretary Alicia J. Keyes said. “This toolbox is a resource to accomplish that goal.” ORD Director Axie Navas said, “Think of it as a blueprint to build a solid, equitable, outdoor economy from the ground up.”

An Annual Meeting Like No Other

The 2021 New Mexico Water Dialogue

BY **LUCY MOORE**

Twenty-seven years ago, when the New Mexico Water Dialogue held its first statewide meeting, the room at the Pueblo Cultural Center was packed, the coffee was flowing, the pastries crumbling, the enchilada lunch simmering, the slides clicking, presenters testing mics, participants chatting and shifting in chairs. You get the picture. Maybe you were even there, or at one of the subsequent annual meetings, all more or less the same. No one could have dreamed that in 2021 that room would sit empty and the meeting—more vibrant, energetic and collegial than ever—would take place...in cyberspace!

Yes, the 27th annual New Mexico Water Dialogue was zoomed this year, Jan. 13 and 14. The board took a chance, choosing to carry on the tradition and bring people together around state water issues online. They hoped for the usual 120 or so attendees and were overwhelmed by over 250 registrations. Half of those attending online were first-timers. And more than half were under 50 years old, with a good number under 35. The geographic representation was broader, naturally, and so was the affiliation of participants. Half were from federal, state and local government, a third from non-profit and community groups. A good number of tribes, academia, and business rounded out the group. A poll taken showed that 98 percent of attendees would recommend the event to friends and colleagues.

The Dialogue is committed to helping people find common ground around water use and management. Our assumption has been that this requires in-person gatherings for honest talk and relationship building, but this year taught us otherwise. Somehow all those people, reduced to boxes on a screen, generated energy, made significant connections with each other, and experienced the powerful bond that water provides for us all, no matter who we are.

This meeting's success was thanks to organizers, presenters and participants, who took on the challenge with courage and optimism. But I would also credit Zoom, where all are created equal. No one's box is bigger, no one's voice is louder, no one knows how expensive your suit is or how shabby your jeans are. It is easier to focus on Zoom; you're not distracted by the lure of a coffee urn, the person who just entered the room or road conditions for your trip home. And if you are a multi-tasker, there is the chat box



*Optimal Species Habitat, Río Grande, south of Albuquerque
From presentation by Quantina Martine, Audubon New Mexico*



Bone-dry riverbed in southern N.M. Water flows only during the irrigation season.
Photo © Monica Ortiz Uribe

where you can carry on a parallel conversation about the topic, go off on a tangent with those who want to join you, or share a link to a relevant article. The facilitation was challenging, of course. Virginie Pointeau ran the technology behind the scenes, masterfully handling late registrants, dropped connections, scanning the chat, shuffling people among breakout sessions. My job as the upfront person was easier, although I admit to a prolonged adrenaline rush.

The Dialogue Board, led by chair Jason John, developed an agenda that focused on the state's 50-year water-planning effort. Interstate Stream Commission staff, Lucia Sanchez, Rolf Schmidt-Petersen and others, partnered with the Dialogue Board and were key in recruiting the large number of new attendees. This partnership was an important signal that the state welcomes ideas and guidance from the full diversity of New Mexicans. In his welcoming remarks on behalf of Gov. Lujan Grisham, John D'Antonio, State Engineer and Interstate Stream Commission secretary, emphasized that the first priority of the plan development process was listening to all stakeholders, and true to his word he was present and listening throughout the two-day gathering.

Keynoter Eric Perramond, professor of Environmental Science and Southwest Studies at Colorado College, shared insights about sharing water that he had gained from the New Mexico experience. He questioned the usefulness of Western water laws and policies which never contemplated the challenges of today: fierce competition for scarce water, and a changing climate. He suggested that traditional ways of sharing water in New Mexico, still alive and well in some areas, could be a model for new approaches to water allocation and management.

Rounding out the morning was a conversation moderated by Laura Paskus, producer of New Mexico in Focus' series "Our Land: New Mexico's Environmental Past, Present and Future." Her three guests offered views of water from a cultural and social perspective, focusing on the deep value that water holds for their communities and inviting all of us to share in that connection. In her remarks on "Revitalization of Indigenous Stewardship and Management of Water," Phoebe Suina, (Cochiti/San Felipe), president of High Water Mark, urged us all to see water as a resource belonging to us all, and in that spirit to take only what we need, never take it for granted. Although she said she regrets the existence of the Cochiti Dam, she takes the long view and knows that there will be a time—only a few decades away—when the dam will reach the end of its lifespan and be removed and the river will run free again. Although she likely will not be there to see it, she smiled at the thought.

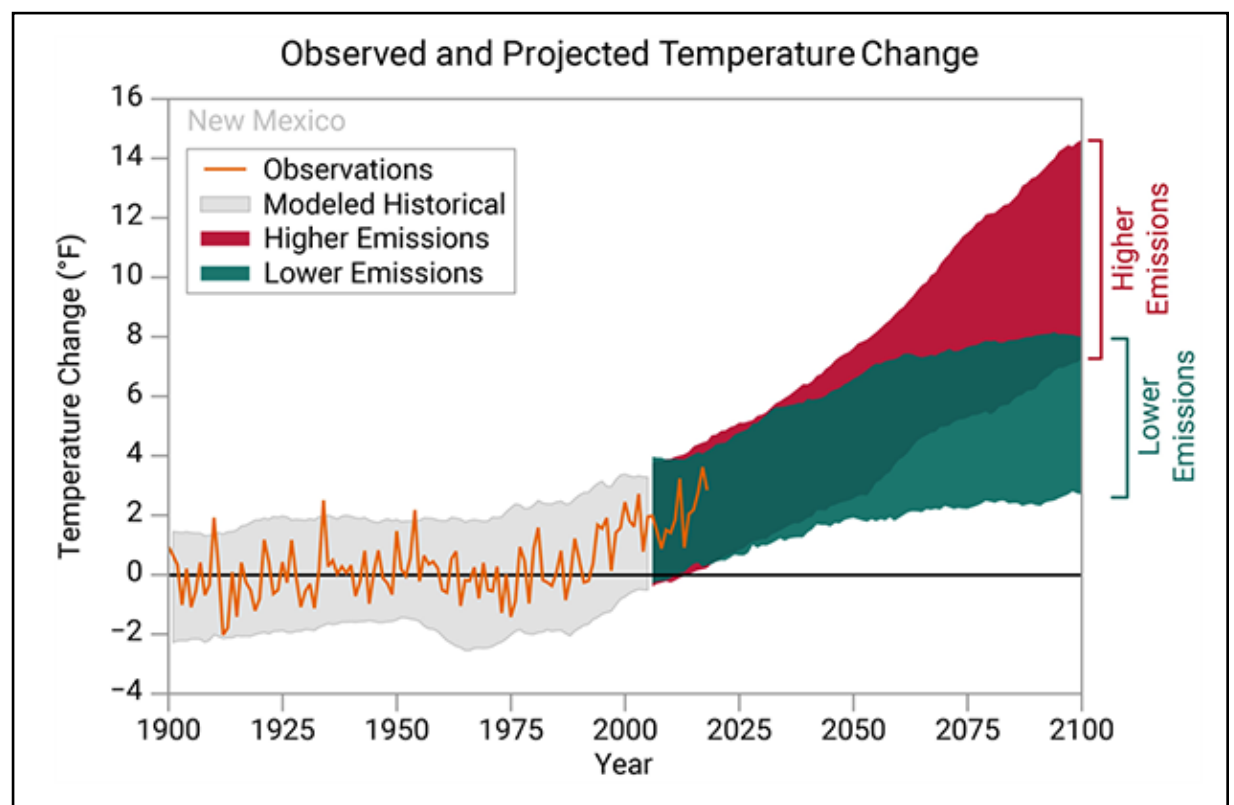
*Take only what you need,
and never take it for
granted. – Phoebe Suina*

Kai-t Blue Sky (Cochiti) is an educator who shares his values related to water with his students, hoping to inspire and empower them to become wise

water stewards. Water is a part of every stage and every activity of life, he said, and because it is so critical, he believes it holds a core value at the heart of his community. "Water is a member of my family," he said in closing. Gabe Vasquez, Las Cruces city councilor and member of the Nuestra Tierra Conservation Project, described his personal history with the Río Grande. His slides focused on "Justice for the Río Bravo and its People" and took us down the river, beginning with its capture at Elephant Butte Dam, its highly regulated release, and the irrigation diversions on its way through Las Cruces to El Paso. His final slide showed a rare flow that enabled families to splash and tube in two feet of Río Grande water. At last, he suggested, we see the real meaning and value of water as a giver of life and joy.

If the first day of the annual meeting focused on the human and cultural values of water, the second shifted to the state's responsibility for protecting and managing the water. And yet, interestingly, the theme of listening ran through the second day as well. Rolf Schmidt-Petersen shared his time with several staff and stakeholders to talk about their roles, and for some, their hopes and fears, in the development of the 50-year water plan. The plan, he explained, will be a framework for making decisions, based on the best scientific data, about policies and projects that will provide a secure and equitable water future for the state.

Schmidt-Petersen also built on the first day's messages about the central role of values in determining how to manage water, giving a glimpse into a plan and process that could be sensitive and responsive to the wide diversity of needs. He posed to the attendees two questions: What water-dependent resource is most important to you? How do you measure progress in protection of that resource? He described



From Rolf Schmidt-Petersen's presentation, on 50-year water plan

the planning process that lies ahead and the many opportunities for citizen involvement.

The morning of the second day concluded with a panel led by John Fleck, UNM professor, N.M. Water Resources program. Also a journalist and author, Fleck concluded that, although data is important, water management is ultimately more about values than about science. Panelist Casey Ish, Middle Río Grande Conservancy District, described the MRGCD Conservation Program and current activities that include improving irrigation structures and controls and an innovative Partial Season Leasing Program for farmers who are compensated not to irrigate at the end of the season. Quantina Martínez, Water Resource associate with Audubon New Mexico, told the story of the Middle Río Grande Farm and River Resilience Project, a partnership among federal and state agencies, environmental organizations, academia and irrigators. The project is restoring and creating habitat for two endangered species, the silvery minnow and the willow flycatcher, along the Isleta Reach. These were impressive examples of collaborative efforts among agricultural interests, municipalities and environmental advocates on the Río Grande.

The Río Grande flows by the Sandia Mountains. © Bill Tondreau, courtesy N.M. Water Dialogue



The afternoon was dedicated to “Table Talks,” where attendees could dig deeper in small groups. Registrants chose topics and were divided in breakout groups on Zoom. The topics and highlights are below:

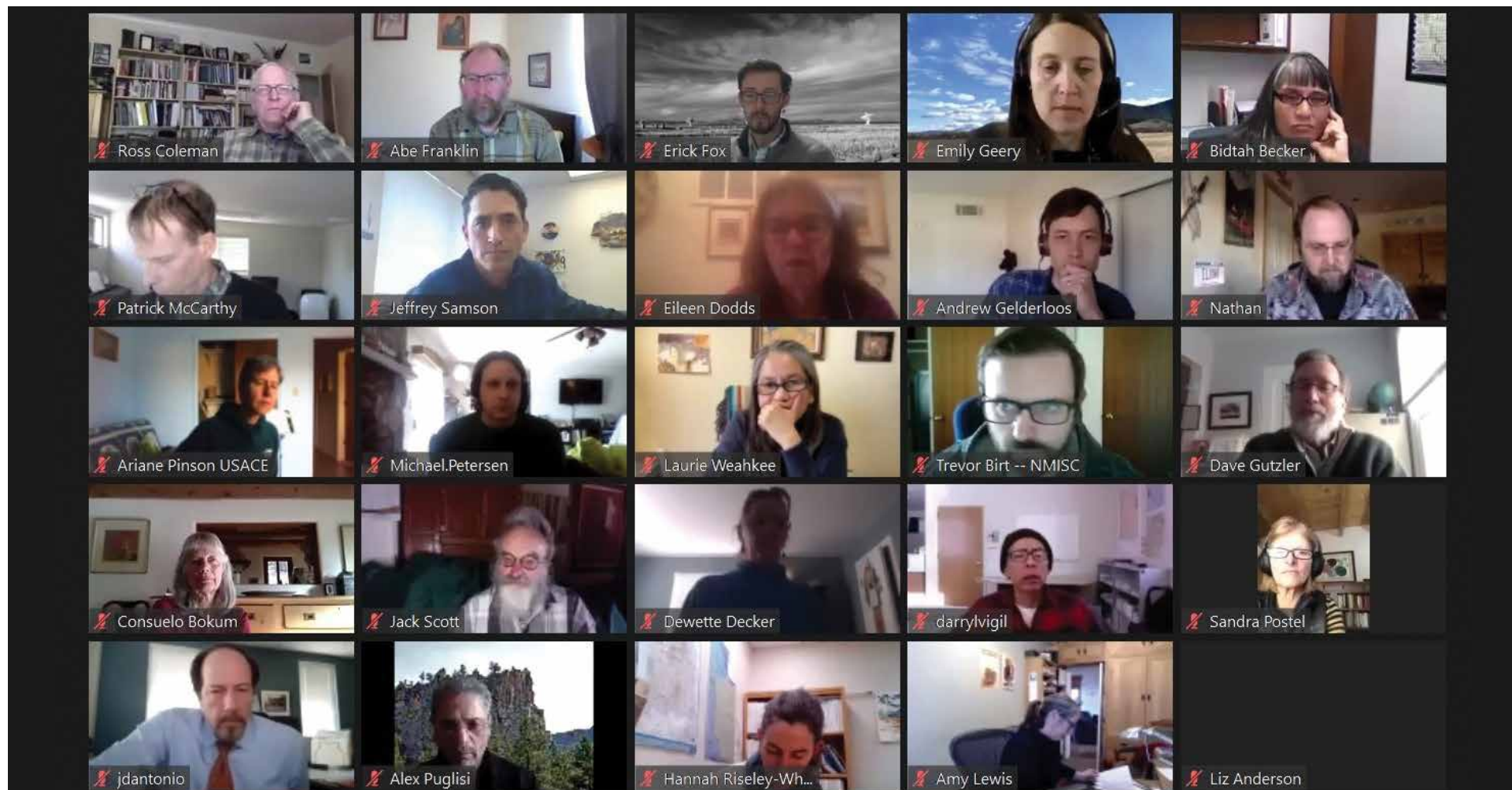
50-year water plan (4 tables): Key takeaways:

- accessible, welcoming, robust public involvement
- regular, clear communication
- collaborate, take time to build trust

- include culture and values
- accessible data, existing and new
- look at regions and basins
- build in resiliency
- engage with children; they will be around in 50 years
- engage tribes
- include actions, road maps, to solve problems

Water Data Act: Key takeaways:

- need good water data for modeling, decision-making, management, sustainability
- promote education, go back to basics
- N.M. can be leader in water management
- need to consider our neighbors as we manage our water



A few of the participants attending the 2021 N.M. Water Dialogue



*Mililani and Marshall Suina
in Cochiti Pueblo, N.M. cornfield
Photo © Phoebe Suina*

Agriculture and Rangeland

(2 tables): Key takeaways

- Couple bottom-up grassroots efforts with top-down policy implementation
- Challenge of translating small-scale successes into large rangeland scale
- Open, flexible, collaborative approach to meet climate challenges
- Need data, education, economic relief to make this work

- Problem: gentrification of rural lands, social justice issue
- Agricultura—support for young far

City and County Water Systems:

Key takeaways

- Innovations are complicated; impact of re-use on downstream users and on return flow credits; example, stormwater harvesting
- Need to act incrementally, no silver bullet
- Need many policies to address specifics

Environmental Flows, ESA, Conservation: Key Takeaways

- Expand water leasing statewide with staff and funding
- Create water bank for environmental flows
- Strategic location of storage and timing of releases
- Look for recurring funding, eg., municipal “environmental tax”

Tribal Water Issues: Key takeaways

- 50-year plan must recognize tribal sovereignty, key to good relationship
- Each tribe sovereign, need individual outreach in planning
- Young tribal youth have skills, knowledge to participate in water issues
- Need funding for infrastructure to move water within tribal boundaries
- Need ongoing forums to discuss water issues, include youth

Middle Río Grande Basin Study: Key takeaways

- Find largest water losses and actions to keep water in the river
- Bracket forecasts and strategies to plan for water supply futures
- Need proactive, ongoing water supply planning and adaptive management program
- Build on the basin study, recommend implementable actions

Water policy in the Legislative Session (2 tables):

Key takeaways

- Critical to fully fund the 50-year water plan
- Meter all wells and uses, and collect data
- More funding and tech assistance for water operators, especially small and rural;
- Mechanism for older priority users (including tribes) to use Elephant Butte water rights that are not fully used

Water provides a powerful bond for us all.

Groundwater Policy: Key takeaways

- Manage water across boundaries: surface-ground, among agencies, watershed focus
- More dialogue; push political will for more collaborative, less insular, culture
- Actively manage groundwater
- Implement prior appropriation or dump it?
- Consider adjustments of water permits vs. rights
- Regular, accurate evaluation of depletions

Forests, Watershed, Riparian Health (2 tables):

Key takeaways

- Restore headwaters; “true progress starts from top-down”
- Forum to continue discussion and outreach on projects and case studies about watershed resilience and riparian restoration
- Science-based approach to maintain water quality including temperatures for cold-water aquatic life in headwater streams
- Better funding opportunities for private land owners for riparian restoration
- Consider climate change in restoration; use plant strains better adapted to warmer climate

Impacts of the Colorado River

Management on N.M.: Key takeaways

- Challenges to San Juan Basin: climate change, drought, aridification, interstate compact compliance, endangered species.
- Act now to build resilience of the San Juan River system
- Middle Río Grande and the San Juan River are interconnected, as are their communities. Manage both systems to do no harm to the other
- Make universal access to clean and abundant drinking water a top priority for the San Juan Basin, especially for Tribal Nations, whose health has suffered disproportionately

During the report back from each breakout group, some common themes emerged. More dialogue among the wide diversity of New Mexicans will lead to equitable, workable solutions to our water challenges. Both decision-makers and citizens need access to accurate, current data on supply and demand to inform the best possible policies and decisions in the future. Young people have much to offer and much to gain from participating in the water conversation. The challenges of climate change must be addressed in all parts of water management.

And finally, having the New Mexico Dialogue annual meeting via Zoom has some definite advantages, as reflected in numbers and diversity of attendees. The 2022 annual meeting will strive for some kind of hybrid, where those



Elephant Butte Dam, near Truth or Consequences, N.M. The reservoir is part of a series of dams that hold water for irrigators in N.M.'s lower Río Grande. © Andrew Gulliford

hungering for that enchilada lunch can come in person, while those far away can tune in on Zoom. Look forward to seeing you all then.



Presentations can be found at: [HTTPS://NMWATERDIALOGUE.ORG](https://nmwaterdialogue.org)

Lucy Moore, mediator and facilitator, is co-founder and a big fan of the N.M. Water Dialogue. She facilitated the 2021 annual meeting on Zoom with Virginia Pointeau. She blogs at [WWW.LUCYMOORE.COM](http://www.lucymoore.com)

Río Grande Watershed Partnership Congreso

The Río Grande Watershed Partnership Congreso is designed to combine local knowledge with scientific management to sustain indigenous cultures, provide educational and economic opportunity for young residents, and protect resources.

The sixth annual congreso is being held virtually through four 2-hour sessions, across a period of two weeks, through March 13. This year's theme is "Uniting our Watershed." The Partnership has invited local landowners, state and federal agency representatives, business owners, students and educators to share their experiences in the watershed.

Sessions include: Stewards of the Uplands—Feb. 27; Valuing Rivers—March 2, 1–3 p.m.; Next Generation Water Keepers—March 10, 1–3 p.m.; Moving Our Work Onward—March 13, 10 a.m.–12 p.m. There is no charge to attend. For an agenda, detailed presentation information, and to register, visit: [HTTPS://WWW.SANJUANCHAMA.ORG](https://www.sanjuanchama.org).

Interior Announces Plans to Strengthen LWCF

In February, the Interior Department took steps to strengthen the Land and Water Conservation Fund (LWCF), including revoking the previous administration's policies that restricted the availability of funding for federal land and water acquisitions.

"The Land and Water Conservation Fund has been crucial to protecting public lands, conserving wildlife habitats and improving access to outdoor recreation. Interior's actions affirm our support for one of America's most successful and popular conservation programs," said Shannon A. Estenoz, principal deputy assistant secretary, Fish and Wildlife and Parks. "We look forward to further strengthening this successful program to ensure that all communities—from hikers and sportsmen to urban and underserved communities—have access to nature and the great outdoors."

Secretarial Order 3396 instructs the National Park Service to revise the *Land and Water Conservation Fund Assistance Manual* to reinstate implementation of the LWCF state assistance program and Outdoor Recreation Legacy Partnership (ORLP) program. The ORLP is the only LWCF competitive grant program dedicated to addressing the recreational gap in underserved urban areas.

Since its inception in 1965, the LWCF has funded \$4 billion worth of projects in every county in the country. Last year, Congress permanently funded the LWCF at \$900 million per year with wide bipartisan support. At no cost to taxpayers, the LWCF supports increased public access to and protection for federal public lands and waters—including national parks, forests, wildlife refuges and recreation areas—and provides matching grants to state and tribal governments for the acquisition and development of public parks and other outdoor recreation sites.

The Decade of Ecosystem Restoration 2021–2030

BY JAN-WILLEM JANSENS

This year, 2021, marks the start of the United Nations Decade on Ecosystem Restoration (2021–2030). The UN adopted this initiative on March 1, 2019, following a proposal from El Salvador a year earlier. The initiative flows from the United Nations' Bonn Challenge, which calls all countries to contribute to the goal of restoring 350 million hectare (1.35 million square miles) of degraded ecosystems by 2030. This challenge follows a number of scholarly and popular scientific publications, such as E.O. Wilson's 2016 book *Half Earth*. The books suggest that we must counter the current climate crisis and ongoing processes toward a sixth biological extinction through the conservation of 50 percent of Earth's most promising land areas and seas that are not yet greatly affected by human activities.

The UN Decade on Ecosystem Restoration supports six pilot countries, such as El Salvador, to carry the torch for the Bonn Challenge. Following these leaders, other countries are encouraged to take up the challenge as well. In the U.S. a first step toward the UN Bonn Challenge galvanized a broad coalition around the goal of conserving 30 percent of land and ocean by 2030, called the 30 by 30: A Push to Protect U.S. Land and Water. Former New Mexico Sen. Tom Udall has been a strong proponent of this initiative at the national level.

Worldwide, the view that it is important and possible to restore nature gained traction in the 1970s. The growing focus on environmental protection and restoration followed a time of environmental catastrophes that triggered environmental legislation and collaborative restoration and conservation movements. The need for conservation of relatively natural land and restoration of degraded ecosystems in New Mexico also became more urgent in the last 50 years due to the increased settlement of rural areas across the West.

To be sure, people had worked toward rehabilitating eroded land, preventing flooding, restoring land after wildfires and reforesting derelict land for at least 100 years before the 1970s. Important initiatives in that regard in New Mexico included many erosion control and reforestation activities after the establishment in 1935 of the Works Progress Administration (WPA) as part of the New Deal. The WPA employed millions of Americans in, for example, the Civilian Conservation Corps (CCC). With guidance from the brand-new Soil Conservation Service (SCS), established in 1933, the CCC stabilized large areas across the country, especially in the West.

Yet, ecosystem restoration is a broad concept that includes a larger scope than stabilization and rehabilitation of degraded land. Restoration of land has, over the years, come to mean any work that returns an area to the ecological structure and functions that were present prior to any disturbances. Often, land or natural habitat cannot be returned exactly to the visual appearance and unimpaired conditions of before, but many years of practical experience has taught us that the natural flow of water, structure and succession

Ecosystem restoration has deep cultural significance for both Native people and newcomers of all generations.

Ecosystem restoration has become a broad field of employment and economic activity, in New Mexico and nationwide.

of plant communities and animal interactions can be recovered. In fact, humans can give the recovery process a head start and nudge it in a direction that might otherwise take nature many years to reach.

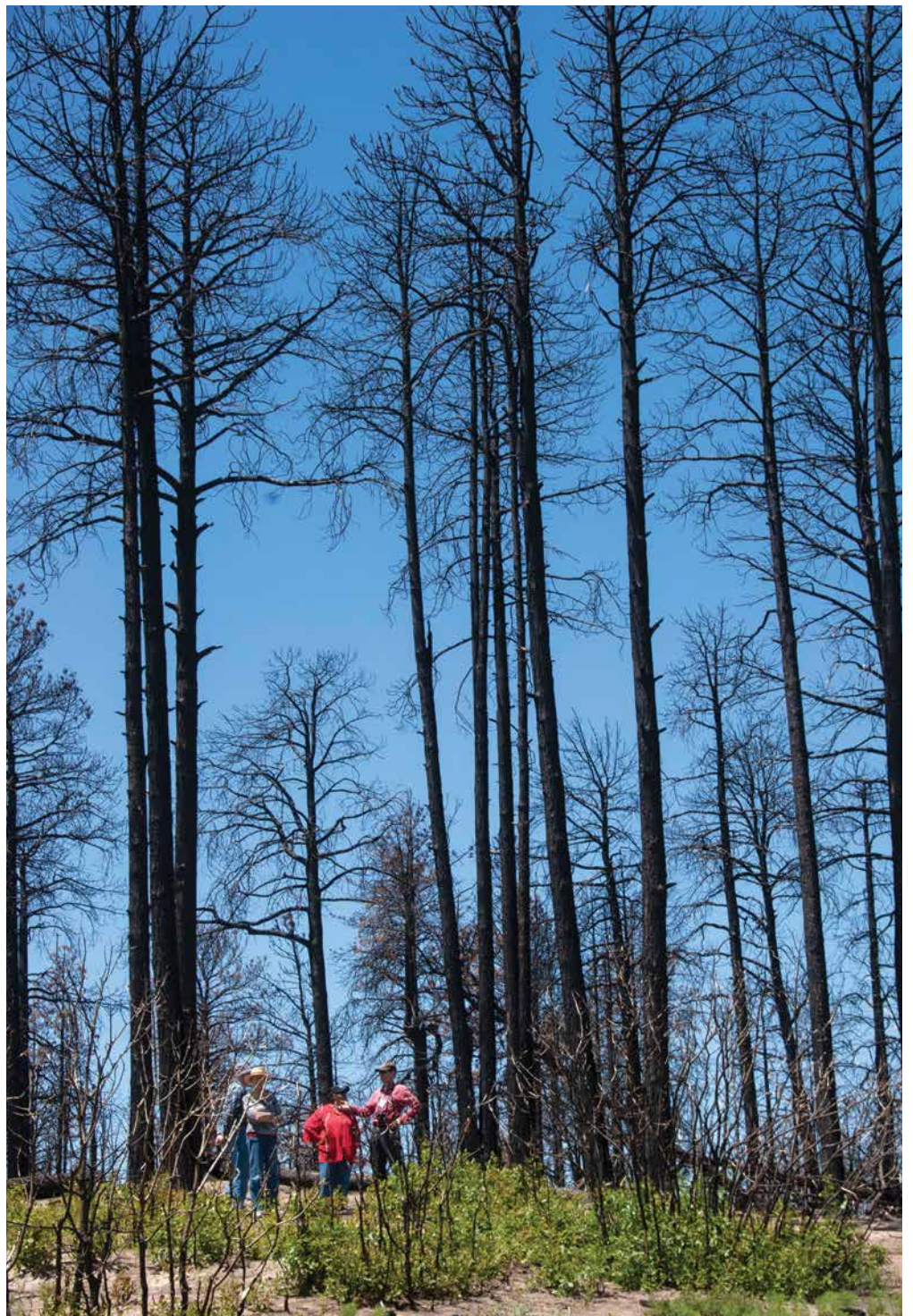
Our understanding of land and nature as an integrated system is a critical concept in the daring undertaking of restoration work. While people who lived on the land have known for centuries that nature is like a whole “thinking” organism, how exactly the many natural processes connect and how to influence them has become more widely understood fairly recently.

The first written documents about nature and the interrelationships between plants and animals go back at least 2,400 years to Greek scholars such as Aristotle and Theophrastus. Their writings informed Renaissance scholars, early nature explorers and taxonomists in the 18th and 19th centuries, such as Carl Linnaeus, Alexander von Humboldt, Karl Möbius and Charles Darwin. After that, German zoologist Ernst Haeckel was among the first to coin the term “ecology” for the concept of the evolving, interconnected, living natural environment.

In 1935, British ecologist Arthur Tansley described the importance of transfers of materials between organisms and their environment as an ecological system or “ecosystem.” After WWII, the term ecosystem became more popular as a result of the growing concepts of systems thinking in science and the business world. Landscape ecologists such as Eugene Odum, Richard T.T. Forman and James Lovelock, among many others, contributed to our contemporary understanding of Earth as a large organism with nested sub-organisms, which we call bioregions or ecoregions. Such ecoregions comprise again a multitude of ecosystems, such as forests, wetlands or soil microbial communities.

The thinking in terms of ecological systems led scientists, economists and policy makers in the 1990s to consider the benefits nature offers to communities. These became known as “ecosystem services.” Looking at nature in a functional manner inspired both ecologists and economists. For ecologists, the concept of ecosystem services helped them identify the value of processes, information and biochemical compounds in the evolving pool of genetic material and the web of living organisms. This understanding deepened our collective knowledge of the resilience that exists in complex and diverse organisms and ecosystems to recover on their own from periods of stress and damage.

At the same time, scientists were able to identify breaking points at which ecosystems’ self-healing power and capacity to bounce back are exceeded. Economists in turn worked on the expression of the benefits of nature in monetary values. Monetization and commodification of ecosystem services found its way in classical economics for valuing natural products such as water and timber. Additionally, in the last few decades, neoclassical economics has attracted political support for conservation through “payment for ecosystem services” schemes, such as carbon credits, wetland mitigation banking, and in-lieu fee services programs, which are usually operated by public regulatory agencies, such as the U.S. Army Corps of Engineers and the Environmental Protection Agency.



Ecosystem restoration in the western U.S. increasingly focuses on severely burned areas, such as this site in the Jemez Mountains after the Las Conchas fire in 2011. The fire started in Santa Fe National Forest and burned more than 150,000 acres, threatening Los Alamos National Laboratory (LANL) and the town of Los Alamos. © Seth Roffman

Ecosystem restoration has become a broad field of employment and economic activity, in New Mexico and nationwide. The state’s vast natural resources on the one hand and long history of resource extraction and abuse in a fragile environment on the other now coalesce in a call for many resource management jobs. As a result, ecosystem restoration has found its way as a profession with growing experience in area-specific techniques in New Mexico. Ecosystem restoration expertise and demonstration projects can be seen in all dominant ecosystems in the state, including forest lands, streams and wetlands, shortgrass prairie, soil ecosystems and specific fish, bird and wildlife habitat.

Ecosystem restoration invites people to interact with the land and to recreate lost connections associated with people’s identity and cultural backgrounds. It therefore has deep cultural significance for both Native people and newcomers of all generations. *Green Fire Times* will explore these connections between people and land in the context of the UN Decade on Ecosystem Restoration throughout 2021. ■

Ecosystem Restoration: A Sampling of Why and How in Northern New Mexico

ARTICLE AND PHOTOS BY **JAN-WILLEM JANSENS**

Whole Ecosystems. Some 20 years ago, I stood with a group of University of New Mexico students in a circle around Kirk Gadzia on a grassland at the edge of the village of Galisteo. The internationally acclaimed grassland ecosystem and grazing expert taught us about the benefits of grassland for the wider watershed ecosystem and the role grazing can play in improving grassland health. He explained how Allan Savory developed a science-based approach to healing grasslands known as Holistic Management, grounded in his experience as a savannah ecologist in Rhodesia, the precursor of present-day Zimbabwe.

Gadzia explained how American tallgrass and shortgrass prairies are distinct ecosystems that used to thrive because of roaming herds of wild ungulates such as bison. Managed cattle grazing could be the next best option to achieve optimal grassland use and ecosystem restoration. Gadzia, Savory and organizations such as the Savory Center, HMI and Quivira Coalition have worked with hundreds of ranchers in the last 20 years to refine planned, restorative grazing strategies that heal degraded grassland ecosystems. Their work returned waterflow in springs, healed depleted soils, and revived entire watersheds across thousands of acres in New Mexico and beyond.

Water. Andrew Vigil, a retired Forest Service silviculturist, and his neighbors in the rural village of La Jara, north of Cuba, N.M., know the importance of water in La Jara Creek and San José Arroyo to their livelihoods. Even visitors to this rural corner of the Jémez and Nacimiento mountains will realize the truth in the saying *Agua es la Vida* (Water Is Life). Mountain creek water feeds the villages' acequias, quenches the thirst of ranchers' cattle and replenishes the aquifer that provides drinking water to hundreds of families. However, many years of land abuse, starting before WWII, combined with the drying climate, heavy grazing by cattle and elk, and gradual Forest Service budget reductions to proactively manage dense forest stands have put the water supply at risk.

Planned, restorative grazing strategies can heal degraded grassland ecosystems.

Vigil and his community reached out to the Cuba Ranger District on the Santa Fe National Forest and a team of consultants coordinated by the firm Sustainable Ecosystems, LLC, to plan forest restoration treatments. Funded by the U.S. Forest Service Collaborative Forest Restoration Program (CFRP), in recent years we worked with Andrew Vigil, the La Jara Water Users Association, New Mexico Rural Water Users Association and other partners to develop a plan for forest thinning that will reduce the risk of fire, grow healthier trees and secure the mountain's water supply for the next few decades.

Forage. Mark Torres easily moves about the crowd of Forest Service personnel, ranchers, state watershed officials and ecological restoration volunteers. They have gathered to share lessons learned and some hard work about wetland restoration in the Valle Vidal on the Carson National Forest. This amicable, soft-spoken man is the coordinator of the Valle Vidal Grazing Association. His members' livelihoods depend on healthy pastures in the headwaters of the Comanche Creek and Ponil watersheds. The grasslands' forage is in turn dependent on water, functioning wetlands and healthy forests. He has been working for nearly two decades with a broad partnership of entities on restoring the ecosystem in this landscape rich in natural resources. During that time, every August the Quivira Coalition

and Surface Water Quality Bureau of the N.M. Environment Department sponsored an annual workshop to bring ranchers like Torres together with a diverse group of ardent restoration volunteers. During the most recent workshop in August 2019, more than 50 people from all over the West gathered to learn, work and evaluate the effect of ecosystem restoration efforts across 100,000 acres of stunning slope



Old growth forest conditions along La Jara Creek in the San Pedro Parks Wilderness.

New Mexico has become a destination for people who love the outdoors.



wetlands, headwater pastures and forest lands. Many had been trained in previous years by Bill Zeedyk, one of the innovators and teachers of ecosystem restoration in the West. In 1982, as a former Forest Service employee, Bill was also an official member of the Forest Service team that organized the complex process for receiving the Valle Vidal as a donation to the national forest system.

Cultural Values. Maria Lohmann and Peggy Darr of Santa Fe County Open Space and



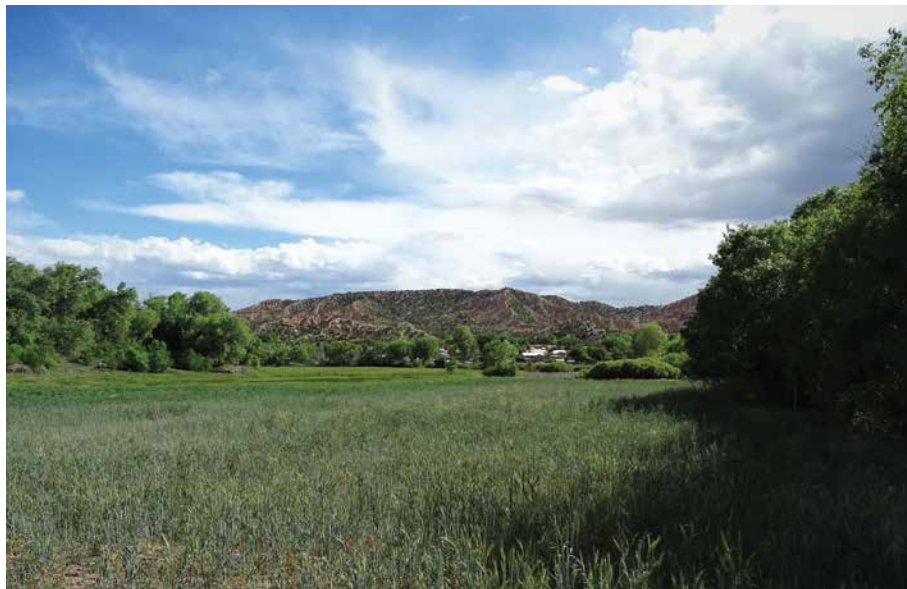
Above: Bill Zeedyk © Seth Roffman

Below: Volunteers working to restore the Holman slope wetland complex

Trails, orchardist and land healer Gordon Tooley and I are picking our way over the driest spots in a wetland. This wet meadow at the confluence of the Río Quemado and Santa Cruz River is the *potrero*—foal pasture—of Chimayó. It is also the scenic backdrop of *El Santuario de Chimayó*, one of the nation’s most famous Roman Catholic pilgrimage centers, a historic miracle site that inspired people’s reverence for this place. Now known as Los Potreros Open Space, more than 20 years ago this unique landscape received permanent protection from urban development as one of Santa Fe County’s first open-space parcels.

A core group of villagers are the keepers of deep local knowledge of the area’s wild fauna.

We are on our way to a tucked-away dry grassland higher up the valley bottom. It is in a tough spot since the Río’s channel degraded, leaving this patch perched high and dry above the stream. Drought, overgrazing and a few desperate attempts at farming in the last 50 years have “tortured” the soil and vegetation of this place, as Tooley puts it. Realizing this past, Tooley’s sharp eye for spreading water with his keyline plow helped trace a pattern of hundreds of deep, parallel furrows that break any crust and allow water to penetrate deeply into the soil, stimulating root development. Each furrow received bursts of soil regenerating seeds as the equipment combed the surface. Much of the meadow now shows wheat- and rye-grasses, sainfoin, field peas and sunflowers. All stormwater stored in the soil supports the evolving grassland community that will build up the humus needed to renew the ecosystem’s resilience. The area’s deer and birds as well as the neighbors’ kids have rediscovered the place as their desired playground. Next, we will restore the Río Quemado’s river ecosystem so that it once again irrigates the wet meadows of the potrero.



View south over the revegetated grassland and wetlands to El Santuario de Chimayó.

Wildlife. Water bodies in New Mexico support more than 70 percent of the state’s wildlife species, according to experts. Since 1998, I have worked with community members of the village of Galisteo to learn about the village’s unique wetland *bosque* along the Galisteo Creek. We discovered that the creek and its cottonwood and willow forest form a corridor that helps coyotes, foxes, badgers, raccoons, bear, big cats and mule deer traverse the Galisteo Basin. The bosque is also habitat to dozens of migratory bird species as well as a parliament of great horned owls, a wake of turkey vultures and a flock of quail.

A conservation easement protects the preserve in perpetuity from development.

Wildlife cameras helped identify them, but it’s especially a core group of passionate villagers who are the keepers of deep local knowledge of the area’s wild fauna.

During preparatory meetings and workdays between 2016 and 2019, people often asked: Why restore this place and to what state? Over the years, we learned that the bosque gradually accumulated sediment, which created high and dry islands that supported Russian olives rather than willows. As a result, more sediment accumulated behind the invasive trees, and the creek could no longer flow over the banks and irrigate the wetland’s willows and cottonwoods. The dry bosque of mostly invasive trees had become a fire hazard and a less diverse ecosystem for animals. Restoration meant that we needed to remove the Russian olives and replace them with willows, locally reroute the channel and allow much more frequent overbank flows across the valley bottom. Despite the ongoing drought, the creek now carries more water, and wild animals are passing through with greater ease. While the changes may have upset the visits of migratory birds for a few years, we are looking forward to seeing them again when the willows and cottonwoods grow out.

Climate. Three Santa Fe County trucks crawl up the steep, rocky mountain track. They scale nearly 1,000 feet to the historic Dolores mining village in the Ortiz



Quail crossing the Galisteo Creek in the restored bosque wetland.

Mountains. Isolated because of its inhospitable terrain and one single track that requires access through a gold mine rehabilitation site closed to the public, the old volcano at the southwestern corner of the Galisteo Basin now supports a unique forest ecosystem. Yet drought, combined with lightning strikes, threaten to ignite hundred-year-old trees in a wildfire one bad day. Famous for its mining ruins and its fauna and flora, the heart of the mountain is now a Santa Fe County Open Space preserve dedicated to public education and research. A conservation easement of the Santa Fe Conservation Trust protects the preserve in perpetuity from development. Ecotone and the Forest Stewards Guild teamed up with county planners and the county wildland fire team to develop a forest management plan.

In early 2021, the firefighting crew will complete the first forest thinning activities before the migratory bird season begins in March. The first-phase will remove small trees beneath towering ponderosa pines to lower the chance that the flames of an inadvertent wildfire would reach the tree crowns and lay large parts of the forest in ashes. Slash from selective thinning will keep the soil covered to prevent erosion on loose rocky slopes and maintain moisture in the forest soil to boost the resilience of existing vegetation and support a new generation of trees and shrubs.



Clearing of small trees beneath ponderosa pine lowered fire risk in the Ortiz Mountains.

Residential Amenities. New Mexico has become a destination for people who love the outdoors. A growing network of trails crinkles through the foothills, in arroyos, on the ridges of mesas and mountain ranges and at the edge of many suburban communities. Gradually my work on such trails shifted from designing, rerouting and implementing trail repairs to the restoration of the ecosystems around them. Especially the piñon-juniper ecosystems have captured my interest, as they shelter many trails and residential areas. These woodlands also provide firewood, piñon nuts and important bird habitat. Storing carbon in the soil, the woodlands are a valuable carbon sink as well. Understanding the ecological dynamics of these woodland ecosystems, both above and below ground, now guides restoration activities I direct in the Lower Embudo Valley, the foothills from Santa Fe northward, the Eldorado Community Preserve, and on Glorieta Mesa and the Ortiz Mountains.

Key to restoring northern New Mexico woodland ecosystems is encouraging grass cover to prevent erosion, improve soil health and boost wildlife habitat. In some places preventing the ignition and spread of wildfire is of importance too. Looking at trail design and stewardship from the perspective of total ecosystem restoration, good trail drainage and soil and water conservation around trails goes hand in hand with woodland health restoration and the improvement of people's scenic enjoyment and safety.

Wood and Nuts. Twelve foresters and biologists from the Pueblo of Jemez surround me on their community's ancestral land of the Pecos Pueblo Grant on Glorieta Mesa. We go over forest inventory protocols as part of a five-year assessment program. What follows is three days of hard work and many miles of walking. We see contorted juniper trees that make us guess their age at 400 years or more, majestic piñons with stem diameters of two feet, much dead wood on the forest floor, and deep black woodland soils that smell of fungi. It sure looks like old growth in some places.

At the end of day three, the team has worked hard and is done early. Yet, there is energy left in nearly everyone to go down on our knees and rummage for piñon nuts. Woodland restoration does not only yield better grass and

Understanding the ecological dynamics of these woodland ecosystems guides restoration activities.

nut crops, it also produces wood. For example, just west of Picuris Pueblo, on state and BLM lands, wood harvesters from the Peñasco area have established a mayordomo program for firewood harvesting. This program proves that ecosystem restoration in piñon-juniper woodland can be a collaborative initiative that heals soils, reduces fire risk, and produces wood and nuts, supporting local livelihoods and reducing anxieties about wildfire in mountain villages.



Providing habitat, shade, and nuts, an old piñon on Glorieta Mesa escaped fire and the axe.



Gully stabilization with a juniper palisade below a single-tread backcountry trail in the Eldorado Community Preserve's woodlands.

People in northern N.M. have done this work for many generations to support their families, while helping forest ecosystems rejuvenate.

Soil. The red, loamy clay soil tells a story of erosion and sedimentation over millennia on the Quay Ranch near Tucumcari. For several generations the Gallegos family ran cattle on the lush bottom-

lands of a tributary of the Canadian River. Yet, drought overtook the ranching operation and left soils exposed to wind and mesquite colonization. When Navona Gallegos and her partner Wildcat brought their youthful spirit to the ranch a few years ago, the old land received a new lease on life. They proudly show me their hemp fields and their agro-forestry patch. What they are really growing here, however, is living soil with high levels of organic matter. The old secret made new that they brought to the farm employs fungi and high-quality organic mulches, both of which they cultivate themselves.

In collaboration with the Canadian River Soil and Water Conservation District and the New Mexico Department of Agriculture's Soil Health Program they are about to embark on the restoration of an ecosystem that often escapes people's eyes: the soil microbiome, consisting of billions of microorganisms in just a teaspoon of dirt. This complex ecosystem consists of thousands of species of fungi, bacteria, nematodes, arthropods, protozoa and dozens of insects in each cubic foot of soil, interacting with each other and with plant roots, soil particles and soil organic matter. If this ecosystem is productive, it generates stable organic matter, known as humus, which is a multifunctional compound that can stay in the soil for centuries and that is essential for resilient and thriving aboveground ecosystems.



Soil stabilization and drainage work as a basis for soil health improvements on Quay Ranch.

Restoration. As I drive out of an alpine meadow area at 10,000-foot elevation in dense spruce-fir forests on the Cimarron Range above Angel Fire, I see a herd of elk stop and turn their heads. They don't turn to me, but toward a truck a mile or more away in the forest edge. The vehicle stops beneath the trees. As I approach, I recognize Gene Vigil. He is harvesting beautiful, straight spruce posts for vigas and latillas. His work helps clear thick understory forest and creates space for grass regeneration as well as for improved snow retention and water storage in the soil.

People in northern New Mexico have done this work for many generations to support their families while helping forest ecosystems rejuvenate. Yet, their work also embodies vast traditional knowledge about the land and locally appropriate restoration practices. Through people like Gene Vigil, Andrew Vigil, Mark Torres, Gordon Tooley, county open space staff, foresters from the Pueblo of Jemez, and Wildcat and Navona Gallegos ecosystem restoration work will gain in effectiveness by a grounding in local experience. At the same time ecosystem restoration can restore local livelihoods from the jobs and products it provides. This builds community capacity for ongoing ecosystem restoration beyond the year 2030, opening real opportunities that New Mexico has a shot at restoring and protecting 30 percent or more of its ecosystems. ■



Jan-Willem Jansens is the owner of Ecotone Landscape Planning, LLC in Santa Fe, N.M. He has worked on numerous forest and watershed management planning and restoration projects throughout northern New Mexico since 1993.

PRESIDENT BIDEN'S CIVILIAN CLIMATE CORPS

The Civilian Conservation Corps (CCC), a 1930s initiative that tackled environmental problems and unemployment as part of President Franklin Roosevelt's New Deal, has inspired the Biden administration's plans to confront the climate crisis. Over a period of nine years, Roosevelt's "Tree Army" planted more than three billion trees, paved 125,000 miles of roadways, erected 3,000 fire lookouts, fought forest fires, and put three million Americans to work.

Now, as the ongoing pandemic has spurred the greatest economic downturn since the Great Depression, a "Civilian Climate Corps" could begin with hundreds of thousands of well-paying jobs for young people. As part of President Biden's announced climate policy, an executive order directed the heads of the Department of the Interior, the Department of Agriculture and other departments to come up with plans to "mobilize the next generation of conservation and resilience workers." The initiative would support the president's promise to get the U.S. on track to conserve 30 percent of lands and oceans by 2030.

According to Biden's website ([HTTPS://JOEBIDEN.COM/CLEAN-ENERGY/](https://joebiden.com/clean-energy/)), projects will include work to restore public lands, protect watershed health, plant trees, mitigate wildfire risks and improve outdoor recreation access. It could also include community-level activities such as urban agriculture projects and retrofitting buildings. The federal government owns and manages thousands of buildings that could become more energy-efficient, or even become sources of energy generation with solar or wind power installations.

To counter global warming, the transition to a renewable energy economy will require an unprecedented investment in workforce training. A Civilian Climate Corps could engage rural and urban workers, representing the full diversity of the country, in hands-on learning, apprenticeship opportunities and on-the-job education to build careers.

LOOKING AT RESTORATION WITH A CULTURAL LENS

BY MACEO CARRILLO MARTINET

One of the earliest lessons I received as a child, one I have passed on to my child as an adult, was to “clean up your mess before starting another,” or, when a little older, “If you break it, try to fix it.” This common-sense simple lesson is profound and eternal. There are variations of it in probably every religious or spiritual tradition. For example, the Bible says, “He who tends a fig tree will eat its fruit.” [Proverbs 26:18]. The Qur’an says, “And Allah sends down rain from the skies, and gives therewith life to the earth after its death: verily in this is a Sign for those who listen.” [Surah 16:65]. Buddhism says, “The charitable man has found the path of salvation. He is like the man who plants a sapling, securing thereby the shade, the flowers and the fruit in future years.” [Sayings of Buddha]. Like a book spine holding its pages together, this teaching holds humankind together on this Earth.

DECADE OF ECOSYSTEM RESTORATION ACTION ITEMS

The UN Decade on Ecosystem Restoration, which kicks off on World Environment Day, June 5th, prioritizes the health of our global ecosystem by supporting and connecting smaller initiatives on almost every continent. Here is a summary of the action items that the initiative seeks to address:

- 1) **Empower a global movement** by connecting initiatives around the world.
- 2) **Finance restoration on the ground** by accessing resources from governments, businesses and individuals.
- 3) **Set the right incentives** by supporting those policies that support sustainable lifestyles.
- 4) **Celebrate Leadership** by supporting many individuals and communities doing this work. One such inspiring leader is Wangari Maathai (1940-2011), a scientist and organizer who received the Nobel Peace Prize for her work in restoring forests across Kenya.
- 5) **Shift behaviors** that have led to the destruction of ecosystems.
- 6) **Invest in research** that can show the best means to revive ecosystems.
- 7) **Build up capacity** by focusing on communities that often lose the most when ecosystems are devastated.
- 8) **Celebrate a culture of restoration** by supporting cultural influencers like artists and musicians.
- 9) **Build up the next generation** because the youth will inherit this planet.
- 10) **Listen and learn from individuals** around the world to hear what they are doing and what they want to do.

A coalition of Latin American and Caribbean governments and businesses that started at the Conference of Parties (COP20) in 2014, answered the UN Decade on Ecosystem Restoration’s call to action with *Initiative 20x20*, which has offered technical and financial support to ecosystem restoration projects in 19 Latin American countries.

The UN Decade for Ecological Restoration, beginning this year, is a global campaign to reinvigorate this ancient lesson by confronting the many consequences of our having forgotten it. This campaign seeks to repair damage that human livelihoods have caused the land and sea, to clean up some of our mess and fix what we have destroyed, globally. According to the UN, it “will provide a platform...to engage globally and scale-up restoration initiatives.” This is further detailed in the sidebar to this article.

Ecological restoration means we need a cultural and historical rethinking.

Cleaning up our global mess involves a combination of three aspects: technical practices, financial planning and social relationships. Robin Kimmerer, a Native American (Potawatomi) ecologist who has done amazing restoration work, explains

why social relationships are key: “It is not the land that has been broken, but our relationship to it... Restoring land without restoring relationship is an empty exercise... It is relationship that will endure and relationship that will sustain the restored land.” By declaring that one of the campaign’s goals is “restoring the relationship between humans and nature, by expanding healthy ecosystems and halting their degradation,” the UN recognizes the importance of this relationship.

If the land is degraded as a result of our broken relationship to it, then how did our relationship get broken in the first place? To answer this, we are inevitably forced to understand the period of colonization, beginning in the 16th century and still continuing today in various ways. It is this period that marked a global attempt to erase multicultural perspectives from humanity, tearing apart time-tested relationships humans had developed with the land and imposing a new set of cultural views of nature and humanity. The view that nature is a spiritless machine made with parts that man can rightfully manipulate, or the view that nature is inherently a vertical hierarchy where certain life

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OP-ED: MICHAEL DAX, PAULA GÁRCIA, DAN ROPER AND LESLIE ALLISON

INVEST IN NEW MEXICO'S AGRICULTURE, LAND AND WATER TO MITIGATE CLIMATE CHANGE

During the 2020 legislative session, a diverse coalition of conservation and agriculture organizations came together to support the creation of an agricultural and natural resources trust fund. As proposed, the fund would leverage a portion of the state's budget surplus to create a perpetual funding source to protect New Mexico's agricultural lands and water resources, restore degraded rangelands, improve aquatic and riparian habitats, restore natural fire regimes and mitigate the impacts of climate change.

Although the Senate and House bills, sponsored by Sen. Steven Neville and Rep. Nathan Small, failed to pass, the effort drew significant attention, including an endorsement from the *Albuquerque Journal*. Heading into the interim, supporters were buoyed by the momentum from the session. Enter the COVID-19 pandemic.

Since March 2020, New Mexicans have faced significant uncertainty, public health concerns and an economic crisis. During this same time, the impacts of a changing climate have also been felt. Our state slid deeper into drought, a situation that may become the new normal. In addition to numerous wildfires, last year's monsoon season was anemic, and as of mid-February, the snowpack in the Upper Río Grande Basin, Jemez Mountains and Gila River Basin are just 51, 29 and 20 percent of average, respectively.

It is vital we protect the resources that are the foundation of our local food systems.

While most efforts to combat climate change are focused on increasing renewable sources of energy and limiting dependence on fossil fuels, strategies to enhance our land and water to prevent, reduce and mitigate the impacts we are already experiencing must also be implemented.

There are numerous ways to make our land and water more resilient. From the use of prescribed fire to restore natural fire regimes and create healthier forests, to restoration projects that enhance a watershed's ability to hold and retain moisture throughout the year, to increasing protections of our rangelands to help sequester carbon and provide better quality forage for livestock and wildlife, these investments represent an opportunity for New Mexico, one in which the challenges of climate, social equality and job creation can be addressed simultaneously.

Private land conservation, in the form of voluntary conservation easements and private land management agreements, can be used to offset climate change simply by preventing intact land from being developed. Keeping private working lands intact keeps farmers and ranchers on the land, provides habitat for wildlife,

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REWILDING THE SPIRIT

These last years of turmoil have resulted in an enormous toll on the collective human psyche in America and beyond. Racial prejudice, politics, economics and pandemic have dangerously eroded human well-being on this planet Earth. Conversely, we humans have gravely damaged the health and natural balance of our planet and its denizens. Without dwelling on our shortcomings as a species that has brought us to this juncture, we need to be reminded of what we are. **We are a biological species, a part of the animal kingdom, one of millions of organisms born of nearly four billion years of biological evolution on a planet capable of birthing and sustaining life.**

For the past 11 months, I have mostly been self-sequestered here at home in the Cañada de los Alamos watershed in New Mexico, reflecting on life in general and the state of our culture in particular. Over the last 50 or so years, I've supported myself as a writer and radio producer, as well as aural historian and creator of sound collages for museums. It has been a fascinating and fulfilling trail that has taken me where I wanted to go to learn about what I wanted to learn. In the main, I have met and spoken with hundreds of fellow humans, almost all of whom were gracious and invited me into their homes to sit for a spell and shoot the proverbial breeze. I learned that almost everyone I met was basically good-hearted and ready to share memories and perspectives. In the main, their lives fit within the systems of cultural mores into which they had been born and reflected their respective sense of normalcy. Thus I learned that most folks live in a state of mutual reciprocity and cooperation, and have to be goaded into that level of divisiveness that presently characterizes American and other nationalistic cultures of practice.

*The human species is NOT
Nature's reason to be.*

It has been particularly interesting to me to note what characterizes alien-ness to people of different cultural persuasions. Differences

To the Editor:

On the Climate Crisis and the Future of Humanity

As Texans recover from the effects of an unregulated pseudo-“free market” electric system, others are understandably pointing the finger at the Lone Star State as an example of the dangers of promoting a “keep-costs-as-low-as-possible-and-maximize-profits-today” mentality. Tragically, not just Texans but all Americans are not very disciplined at taking measures today (which require us to spend some money upfront and to change a few of our behaviors) to prepare for and prevent costly and deadly disasters tomorrow—the biggest disaster being the impending global Climate Crisis, a taste of which Texans have recently been enduring.

We are pretty much a “Me-today-and-let-tomorrow-bring-what-it-brings” society. Capitalism and the marketing that accompanies it inundates us, mostly subliminally, with that “only-today-matters-and-let-the-future-be-damned” message. I have no idea how to turn that ingrained ship around, so we start behaving like the supposedly intelligent species we claim to be. And the ultimate victims of our collective myopia? Our children and the future we are handing them.

CRAIG O'HARE
SANTA FE

appear along lines of skin color, religion, economic status, belief systems—the array of possible characteristics is forbidding. I've been blessed to wander among many cultures that differ from the one into which I was born, ever trusting in that humane-ness that seems intrinsic to people in general. Once, over 60 years ago, I was a young white guy playing jazz on my trumpet with a group of dark-skinned folks who were superb jazz musicians. The reed player, who was the blind leader of the group, turned to me after my chorus on “Moanin” by Bobby Timmons and said, “Hey, man. You play like one of us.” It was perhaps the greatest compliment I've ever received and brought tears to my eyes. Music is where kindred spirits meet.

*My life could be measured in thousands
of campsites, many of them habitats with
resident wildlife in abundance.*

To me, the greatest jazz trumpeter of all time was a black fellow human from Delaware named Clifford Brown who was my jazz inspiration. I could never hope to even approach his level of performance. His playing, his sense of music, remains unparalleled as far as I'm concerned. Clifford Brown died in an automobile accident on the Pennsylvania Turnpike in 1956. He was an inspiration to many fellow jazz musicians. He was a genius who neither drank alcohol nor took drugs of any kind. He was a truly good man, a pure soul. That purity of spirit is what I aspire to in my “*octogenerianismo*.”

I've now encountered that quality in many of my fellow humans regardless of race, culture or nationality. I remember the late Japanese poet, Nanao Sasaki, who wandered afoot over four continents studying the watersheds, the wildlife, every aspect of this nook in the Universe. One day back in the 1970s,

Nanao and I visited the Bosque del Apache Wildlife Refuge south of Socorro, New Mexico. It was wintertime and the sand-hill cranes were in abundance. We arrived there in late afternoon in time to watch the cranes land in shallow waters where they spent the night protected from coyotes and other predators who wouldn't venture into the water to try to catch crane for supper. The cranes began to land in droves. Nanao stood leaning forward, transfixed by the intensity of crane-ness that predominated for that special hour. He didn't move or shift position the whole time. Thereafter, the cranes flew into his poetry, some landing in a Noh play that he wrote in his Japanese language. After Nanao's death, another poet friend, John Brandi, carried some of Nanao's ashes atop a high peak in the Himalayas and released them to the wind.

One time, maybe a quarter-century ago, I was trailing along beside the Columbia River in my pickup truck, camping each evening, looking to meet interesting people who might allow me to record their



Jack Loeffler © Seth Raffman

The diversity of ecosystems should provide a cue for our own species to perceive reality with surer vision.

salmon into long strips, then hung the strips to dry during the summer sunshine into a kind of salmon jerky. I asked her if I could record her, and she said this to me: "Our first food is the salmon. It is important to us to have salmon. Every Sunday we're supposed to eat salmon. It is our way of life to thank the Creator on Sunday and eat the traditional foods. And that is a lot of salmon. The way I see the numbers [of salmon] declining, it is really scary for me. The Indian people used to walk so close to Nature. The Columbia River was clean-flowing water at one time. They said you could see all the way to the bottom, it was so clean. I think way back then, when the fish were in great numbers, they went to their streams and they were hearty fish, and now they are not. I think the dams warm up the water... When the big salmon comes back, he has a real battle from the mouth of the Columbia clear up to Wishram [a salmon breeding ground], fighting all the different dams."

Indeed, the mighty Columbia has been dammed to provide hydro-electricity to cities. The dams have totally changed the riverine ecology and have disrupted the ways of life of Indigenous peoples who have lived in the region for scores of generations.

After I recorded her, Sharon Dick gathered some of the dried salmon from the ramada, put it in a bag, and gave it to me to sustain me on my journey. That was a great act of generosity from one fellow human to another. As I continued that journey in Indian Country throughout the West, I ate the dried salmon. It sustained me well, and I thanked Sharon Dick and the Spirit of Nature at each mealtime.

My life could be measured in thousands of campsites, many of them habitats with resident wildlife in abundance. I have often recorded the wildlife whose voices have greatly enriched my own life. Each habitat has its own system of intertwined life, each

perspectives. I happened onto a Nez Perce fisherwoman named Sharon Dick who maintained a fishing platform on a bank above the river where she caught salmon. There was a ramada structure just above her fishing platform where she cut the fresh-caught

lifeform dependent on the biological system that it inhabits. Therein lies its resilience. This very diversity of ecosystems should provide a cue for our own species to perceive reality with surer vision than our present monoculture has yet evidenced.

During this last year, one of my main chores is to ensure that I've provided water daily to four watering pans set out mostly for birds, but a couple of which provide water for mammals including coyotes, the occasional bobcat and other earthbound creatures. I watch the birds with special interest. There are many species specific to each season and their conduct at the water pans is fascinating.

As I write by my western window during the wintertime in this semi-rural habitat that is my homeland, I daily watch clusters of robins, western and mountain bluebirds, Oregon juncos, house finches, assorted sparrows, ravens,

Is human consciousness sufficiently expansive to provide for our continued existence—or not?

crowns and the beautiful Townsend solitaire that is a winter resident. It is a member of the thrush family, a cousin of the robin, and elegant in its demeanor. There are red-shafted flickers, ladder-backed woodpeckers, brown towhees, and myriad "LBJs"—little brown jobbies that my ancient eyes can't identify. There is an occasional sharp-shinned hawk and a Cooper's hawk, both Accipiters, each of which invigorates the moment of arrival and departure. When either of these true hawks passes through, all the other birds go into hiding.

I have observed every sort of pecking order between species as well as within species. The robins are especially territorial and usually claim the watering hole as their own for the duration. Other species cluster around the edges of the watering pans and drink away, always mindful of the other birds' presence. I love them all but have a special place in my heart for the solitaire and the flickers.



Sandhill cranes. © Richard Pick

These birds are distant relatives of mine, as is every other species in my homeland, or for that matter, every species that has ever lived on our planet Earth. I am constantly aware of this inter-relationship with all life. The level of mutual cooperation and reciprocity between and among species is certainly revealed to me to be the norm. Certainly some antagonism exists. Territoriality is real, as is the fact that life feeds on life. I'm ever wary as I walk my morning trail. But in the larger sense I feel utterly comfortable and at home in the wild. At this stage of my life, having experienced the human condition for over 80 years, I am intent on re-wilding my own consciousness as best as I am able. My faith lies in the flow of Nature. I was spawned by Nature, and my body will feed the natural world after my death. With luck, I'll end up in a hole in the ground somewhere, perchance to feed the roots of a juniper or piñon tree, and thus gradually release my borrowed atoms to the planet at large. I read recently that most of the hydrogen

continued on pg. 36

B.Public Disrupting the Home Building Industry

With help from the Santa Fe Business Incubator, B.Public Prefab was recently launched to address the housing shortage and global climate crisis with a disruptive solution. The public-benefit (B) company offers high-performance, environmentally friendly modular building products and services. It was formed by partners CEO Edie Dillman, COO Charlotte Lagarde and Chief Technology Officer Jonah Stanford, who has been designing homes to Passive House standards since 2008. “Passive House” is a German standard for energy-efficiency that has been around for 30 years.

B.Public’s prefabricated wall roof and floor panels speed construction, ensure quality craftsmanship and reduce a building’s energy consumption by up to 90 percent over its lifetime, while utilizing recycled and petroleum-free materials. The panelized components work together to create a super-insulating envelope. “Smart” vapor layers on the outside and on the interior breathe.

The company offers licensed home designs with a complete set of construction drawings for single- or multi-family homes, studios, eco-cabins and townhomes for infill or off-grid. B.Public provides technical assistance to homeowners, architects, builders and developers. “We are trying to make this technology accessible so that it can be much more widely adopted,” Dillman said. “For low-rise construction with square corners and 10-foot ceilings, we have created building blocks that will allow anyone to achieve high performance, comfort, sustainability and cost predictability. The innovative homes only cost 5 to 8 percent more than conventional construction.

“We have lowered the barrier for builders and developers to be able to reach standards that only custom houses could aspire to achieve until now,” Dillman said. “Builders are key to serving clients and we are dedicated to supporting our local trades.” In January, after an installation crew of three erected and weathered a home near Angel Fire, New Mexico, in about a week, the B.Public team hosted local builders to tour the project. A growing list of clients are placing orders for the pre-fab panels. For more information, call 505-577-4207 or visit <https://bpublicprefab.com>.



COVID-INSTIGATED HOME DESIGN AND BUILDING TRENDS

The pandemic has forced many of us to reevaluate our lives and fundamentally change how we interact with our families, coworkers and communities. Working, schooling, exercising and playing at home, with multiple people stuck in the same space, has been a great incentive to redesign and rebuild living spaces so they support physical and mental health.

Here are some COVID-instigated trends in home design and home building:

Trend #1: The Rise of the Home Office

Common commuting and daily work patterns dramatically changed for millions nearly overnight. The meteoric rise of meeting platforms like Zoom intensified the need for home office space with suitable Zoom backgrounds, partitions or lockable doors to keep out noise and unwanted traffic.

Trend #2: Indoor Air Quality

With the pandemic, up to 90 percent of most people’s time has been spent indoors. This has made more people think about the materials around them in their homes and the quality of the air. Poor air quality in buildings has many contributors—paints with volatile organic compounds (VOCs), poor air filtration and ventilation, leaky buildings causing mold, and off-gassing of glues and building materials containing certain types of plastics. This has brought more attention to sustainable or eco-friendly building materials such as natural insulation, non-VOC paints, and natural materials such as bamboo, cork and hempcrete.

Trend #3: Green Building Materials

Building material shortages for renovation and construction projects occurred due to COVID-induced labor issues and near panic-buying. It has been taking much longer to complete projects because it has taken longer to procure materials. And the materials are much more expensive. Pressure on traditional supply chains has resulted in searches for sustainable alternatives.

Eco-conscious construction trends and an increase in non-residential green buildings in the U.S. have also been driving an explosion in the demand for green building materials.

Trend #4: Increased Focus on Outdoor Spaces

To expand usable space for outdoor working and relaxing, homeowners have built outdoor kitchens, fire pits and patios. Backyard prefab sheds or sheds built from kits have been in demand.

TALE OF A FAMOUS WOODCARVER

From an Unpublished Memoir

BY JUAN ANDRES VARGAS

Yo soy de esos jinetes que se apean como les da la gana.

I am the kind of cowboy that gets off his horse any way he wants.
(excuse when he gets bucked off) – Juan Andres Sr.



Patrociño Barela (1900–1964) was a self-taught artist whose work was included in a Federal Art Project exhibit at the Museum of Modern Art in 1936. A Time Magazine review referred to him as the “discovery of the year.” Barela’s descendants have carried on his artistic legacy.

Frost permeated Taos Valley early one spring morning as Patrociño Barela got up from his hand-hewn bed and hurriedly dressed in the cold shack he had built from rough lumber he got from Julian Romero’s sawmill in Las Tienditas, when he could no longer live with his contentious wife, Remedios.

Hankering for *calabacitas*, one of his favorite dishes, the well-known woodcarver opened his wood-burning stove, unfolded a blade in his Kabar double-bladed knife, and deftly sliced slivers of pitch from a neatly piled stack of *ocoté*. He then piled dry kindling and cedar

shavings and struck a match. The pitch, *piñon* and cedar instantly ignited. Within minutes, a roaring fire blazed as he added pieces of *piñon*.

Patrociño filled his coffeepot with heaping teaspoons of coffee, set it on top of the stove, and untied a flour sack that was hanging from a nail in a viga. The sack was half full of dehydrated Mexican squash that Virginia Vargas, wife of his friend, Juan Andres Vargas Sr., had given him from their summer harvest. Patrociño then put a heaping tablespoon of lard into a large cast-iron skillet. It had been rendered from the 300-pound sow he and Juan Andrés had butchered in late November. After scooping two handfuls of *calabacitas* into a pan of hot water, he opened a can of sweet corn, drained the water and added two large diced yellow onions.

With the first perk, Patrociño pulled the boiling pot to a cooler side of the stove so the grounds wouldn’t spill over into the coffee. He smiled in anticipation as he stirred the mixture until the onions crystallized. He placed two flour tortillas he had made the day before next to the pot to warm.

As he prepared breakfast, Patrociño thought about what he was going to say to Juan Sebastian about cultivating Sebastian’s acre plot, *a medias*, so he would be assured of having a supply of his favorite foods like Mexican squash, white corn for

posolé, blue corn for *chaquegue*, *chicos*, pinto beans, garlic, and of course, green *chile*, which he ate almost daily. Patrociño’s ripening chile peppers were braided and hung to dry in ristras until the pods turned red. He used the chile in various dishes during the long winters. Patrociño also had a flour sack of *cueritos* (dehydrated pork skins), which he regularly cooked with beans or *posole*.

Most mornings, Patrociño’s breakfast consisted of two thick slices of bacon cut from a slab, fried potatoes with onions, and two eggs fried in bacon grease, topped with red chile. He would also make a sourdough pancake from the starter he fed every morning with an egg and flour. Whenever he craved bread, he would add a small portion of the starter to two cups of flour with a tablespoon of lard that had been melted in warm water. After kneading the dough, he let it rise while he started a fire in a pit outside. When the fire had burned down to hot coals, he placed the dough in his *comal* (Dutch oven), put a wet gunnysack on top of the cast-iron pot, and covered it with dirt. He also used the *comal* for cooking leg of lamb or stews. Sometimes he baked bread in the *horno* (adobe oven) he built.

Patrociño ground red chile from the ristras. He made two types. *Chile Caribe* was not finely ground like the powered chile. During Christmas holidays, he would make dozens of pork tamales mixed with that hot red chile. He was continually amused that *los Americanos* hung ristras on their doors as decorations, and if they made *posolé*, they put whole pods in it instead of sauce he preferred for the full flavor.

After the fall harvest was in, Patrociño gathered all the corn, braided the ears and hung them to dry outside his shed. White corn was for *chaquegue*, a cereal made from the dried, toasted grains. He soaked some of the white corn in lime to remove hard husks and ready it for *posolé*. The sweet corn was dehydrated by placing large bundles in the *horno*, heated with dry *piñon*. After removing the ashes, he placed bundles of corn inside and covered the door. Thus, the corn was preserved as *chicos* to use with beans and in other dishes.

Patrociño stored large cabbages, carrots, beets, turnips and his favorite apples, Jonathans, in a trench lined with straw. During the winter months, he dug these out to use whenever he desired.

One of Patrociño’s favorite dishes was a stew of cabbage, carrots, potatoes and onions. Another was lamb stew with carrots, onions, celery and potatoes. He sliced *calabacitas* into round slices, *reditas*, and set them out to dry in the sun on flour sacks, covering them with other sacks to keep the flies off. He did the same with apples, peaches, plums and apricots, which dried on the roof of his shed.

In the fall, Patrociño usually purchased a *borrego* (lamb), a yearling, from Eli Chávez, which he butchered and covered in a sack to prevent spoilage. At night, the sack was removed, and for months he cut meat from the carcass. The milk tripe was cleaned, rolled into *burruñates* and deep-fat fried. There were always at least two large feasts of *costillitas*, crisp lamb ribs. Dried flanks were chopped up into squares and cooked with pinto beans. His favorite was *carne seca*, jerky made from lamb mixed with deer or elk. When dried, he pounded the jerky on a rock and used it to make red chile or brown gravy with potatoes.

Patrociño was known for his roasted leg of lamb. He would poke slits into the meat and insert garlic cloves, then rub it with salt and pepper before searing it for about 20 minutes. He then slow-cooked it at a low temperature, adding carrots, celery, onions and unpeeled potatoes rubbed with olive oil toward the end of the cooking. He would make incredibly tasty gravy from the heavily garlic-flavored drippings. He also made red chile with small strips cut from the leg.

Juan Sebastian agreed that in return for use of the one-acre, Patrociño would pay the ditch fees, participate in the communal *acequia* cleaning and be responsible for plowing, planting and irrigating. And that Juan Sebastian would share the garden's bounty.

In April, Patrociño turned a small portion of the garden soil over with his shovel and planted cold-weather vegetables: cabbage, carrots and turnips. Ordinarily, he would have planted garlic and potatoes in late fall, but he did not have the field then. In early May, he appeared at the annual ditch cleaning as the *peon* for Señor Sebastian. In mid-May, he hired Leandro Gonzales to plow the field with a team of draft horses while Patrociño walked behind the plow and placed two seeds of sweet corn and two of Mexican squash in the topside of the plowed row, which would be covered on the return.

Half-potatoes were planted in his garden in the same manner as the other seeds. Radishes, lettuce and cucumbers were planted later in a separate part of the garden in small plots. He spread composted sheep manure and plowed it under a month before planting. He did the same with white corn, planted in a different part of the field to avoid cross-pollination. Broad squash leaves shielded and kept the earth moist and helped the corn grow. When the plants started to break through the soil, he irrigated lightly and the entire garden began to emerge, a sight he enjoyed watching every day. Throughout the summer, he weeded, hoed and thinned the crops, and laced dirt up against the corn stalks, forcing them to grow straighter and taller.

Patrociño asked the majordomo for permission to irrigate from the acequia. He often irrigated when the moon was full and at night so that there was less evaporation. After irrigation, the rows of corn, potatoes, lettuce, squash and radishes grew rapidly. He could see that it was going to be a bumper crop. ■



Juan Andres Vargas was born and raised in Taos. He received a B.A. from UNM and a Juris Doctorate from Thurgood Marshall Law School in Houston. He was a special assistant attorney general and twice elected probate judge for Taos County. Vargas has two daughters and is married to Eugenia Hauber, a retired attorney.



Top: Springtime planting, Daniel Corona loads an horno to make chicos, roasting green chile on a comal, Bottom: the fragrance of roasted vegetables, calabacitas with maíz, white corn tamales, summer harvest. Photos © Alejandro López



Green Fire Times wishes to thank northern New Mexico multimedia artist, Alejandro López, for the fine photos that accompany this article. One of López's paramount interests is documenting Indo-Hispano rural life.

López's articles and/or photographs have also appeared in *Plenty* magazine; *SouthWest Contemporary*; *Indian Country Today*; *New Mexico Magazine*; *Land, Water, People, Time*; *Pasatiempo* (*The Santa Fe New Mexican*) and other publications. His photography or artwork is represented in collections of the Museum of New Mexico, Millicent Rogers Museum, Museum of Tolerance (Los Angeles), Northern New Mexico College, New Mexico Acequia Association; and the Center for Southwest Studies, Zimmerman Library, University of New Mexico.



Center of SW Culture Celebrates 30 Years

Community Development Center Has Helped Launch Nearly 40 Organic Farms

BY **ARTURO SANDOVAL**

Bryce Townsend was well into a career as an educator when his father became ill. When the elder Townsend realized the illness was terminal, he asked his son to promise to keep the family farm going at San Felipe Pueblo.



Bryce Townsend of San Felipe Pueblo at Black Mesa Farm

That promise was always at the back of Townsend's mind as he pursued a graduate degree at the University of New Mexico. During a class where several community-based non-profits talked about their work, he heard about the Center of Southwest Culture's (CSC) Community Development Center (CODECE), which helps Indigenous and Mexicano/Chicano people start organic farming operations.

Five years later, Townsend is farming the 10 acres his father left him and has established himself as a successful organic farmer as part of the Black Mesa Farming Cooperative.

more than 160 farmers at nearly 40 organic farming businesses and cooperatives owned and operated by Indigenous and Mexicano/Chicano community members that the Albuquerque-based CSC has helped launch across New Mexico over the past 10 years.



Center of Southwest Culture logo

The CSC is a 501(c)(3) nonprofit whose mission is to nurture healthy communities through economic development, educational and cultural work. In 2021, the center is celebrating its 30th year of service to New Mexico communities. One of its main areas of focus is on local food production as a means to help "food desert" communities increase access to healthy food. In working with underserved

communities and helping traditional land-based farmers launch successful businesses, the CSC draws on culturally based wisdom and tradition to help people become economically self-sufficient.

Community members from all walks of life who have access to arable land and water rights receive CODECE's support in reclaiming Indigenous regenerative farming practices. The program also provides beginning farmers with technical support and start-up needs such as drip-irrigation supplies, organic seeds, soil tests, and help with applying for USDA financial assistance. Education in financial and business management is also offered, along with help in developing marketing and branding strategies so farming operations can



Indigenous and Mexicano/Chicano organic farmers; Sembrando Salud training sessions in 2019; Pg.23: Woman in black t-shirt: Emma Q. Dewey. Photos by CSC staff

Culturally-based wisdom and tradition help people become economically self-sufficient.

has been able to connect farmers to restaurants, schools, senior centers and emergency relief centers.

compete in the highly competitive wholesale food market.

Working closely with community organizations such as Agri-Cultura Network, as well as the New Mexico Public Education Department, CODECE



the South Valley, the International District in Albuquerque and the town of Bernalillo participated.

“The global pandemic that continues to impact communities and families created some uncertainty for the CSC and its programs,” said CSC Farmer Advisor, Emma Dewey. “But between March and December 2020, the center took on 40 new farmers, almost all under the age of 40. A majority were women and people of color.”

Several farmers and farms partnered to develop CSA (Community Supported Agriculture) programs to help feed elders in tribal communities. With people out of work, many farmers rallied to feed their communities, developing barter and trade systems in place of monetary exchanges. Family matriarchs came forward, wanting to learn how to grow their own food and also how to grow medicinal and edible herbs to support



Those who show the capacity can “graduate” from backyard gardens into full-time farming.



CSC has launched a sister program for Indigenous and Mexicano/Chicano families who cannot afford farmers’ market organic produce. The Sembrando Salud (Sowing Health) program guides families through the process of growing a backyard resilience garden. They attend a workshop to learn how to grow culturally relevant and climate-adapted vegetables and companion plants in limited spaces, and receive a guidebook developed by CSC staff, as well as seeds and drip irrigation supplies. They also receive ongoing support throughout the growing season. Those who show the capacity can “graduate” from backyard gardens into full-time farming.

health and cultural wellness. This spurred a new, immersive iteration of Sembrando Salud that empowers women in Indigenous and Hispanic/Latino/Chicano communities to feed and heal their own family members.

Dewey said, “When we take the time to reflect on what ‘resilience’ means for New Mexico’s food systems, in the midst of a global pandemic, these are the things that give us pause for gratitude and hope. We are on the cusp of a revolution in how we grow and access food in New Mexico, and the Center of Southwest Culture is playing a key role in this beautifully evolving landscape.” ■

Arturo Sandoval is the founding director of the Center of Southwest Culture. He has been active for five decades in community-based economic development, cultural, educational and civil rights efforts in New Mexico and across the U.S. WWW.CENTEROFSOUTHWESTCULTURE.ORG

We are on the cusp of a revolution in how we grow and access food in New Mexico.

Besides increasing access to healthy foods and outdoor physical activity, Sembrando Salud promotes familial storytelling around growing and eating homegrown foods. In 2019, 165 families from Jemez Pueblo, Zuni Pueblo,

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ARTURO SANDOVAL

A Leader for the First Earth Day

Reflecting on 50 years of social and environmental justice work

BY GARY PAUL NABHAN

When the first celebration of Earth Day was being planned for April 1970, few people of color were on the front lines of the environmental movement. Although 20 million people of all races, creeds and cultures came out to celebrate and renew our relationship with Mother Earth, the National Organizing Team in Washington D.C. included only one person from an ethnic or racial minority. Fortunately, that Chicano activist, based in Albuquerque, had the street smarts to reach out to “La Raza” in several Western states, thereby fostering a more inclusive rollout of environmental teach-ins, rallies and marches slated for that landmark day in the history of the environmental movement.



Arturo Sandoval, to this day, continues his work as a pioneer in environmental justice, food justice and social justice to benefit Indigenous, Mexicano and Nuevo Mexicano in both rural and urban communities throughout the Southwest.

As a 17-year-old Arab-American intern at Earth Day headquarters in the early months of 1970, I felt Arturo’s presence was a breath of fresh air. I saw more of the Ivy League and

Stanford graduates on the leadership team, but Arturo—with his black hair, mustache and quizzical smile—reminded me more of the street activists I’d grown up around.

Indeed, Arturo was already attentive to the La Raza movement before he left his hometown of Española to attend the University of New Mexico in the late 1960s. While still a minor, he attended a gathering about land rights in Anton Chico that set him on his path. As he told me with a slightly amused grin, “I changed from a nice, polite, risk-averse Catholic boy who had been leaning toward a sedate lifestyle, and came out as a Chicano activist. I’m sure that made some of my family members uneasy at the time. But I found the counterculture movement was a fantastic opening out of our worldview that looked beyond the constraints of the oppressive religious orthodoxy of that era.”

Sandoval has had a special role in making environmental concerns credible to minority populations.

campus organized exclusively by students themselves. Felipe González, who met Sandoval around 1968, remembers him as “very dynamic... with a strongly developed awareness of issues in relationship to the Chicano and Chicana people.”

Within two years, Earth Day coordinator Dennis Hayes enlisted Arturo to join him in the non-profit offices of Environmental Teach-In, Inc., where he and I met in February 1970. “I shared a lot of social justice- and peace-making values with the rest of the staff,” Arturo said.

Sandoval was so articulate about his values as a college student at UNM that he assumed a leadership role in the United Mexican American Students (UMAS) coalition, helping with a wildcat strike on

The multicultural protest march along the banks of the Río Grande can rightly be called the first successful environmental justice initiative led by people of color in the U.S.

“The good thing about the participants in the counterculture at that time was that they modeled the behaviors they wanted to see changed in America; they didn’t just talk about them. They truly wanted to live in harmony with all races and cultures and with Mother Earth as well.”

Both Arturo and I were struck by the fact that the youthful Earth Day organizers selected a place for their offices in a Black neighborhood in Washington, D.C. near DuPont Circle that others considered to be tough, if not dangerous. “But I loved to take breaks from my 10-hour-a day work and listen to the African drumming circles in the park below us... I guess I felt somewhat isolated from my own people at the time—my first long stay away from New Mexico—so I did a lot of outreach for Earth Day with Chicano groups in the West, not just Albuquerque, but L.A., San Francisco, Denver and metro areas in Texas and Arizona.”

He admitted to me that at times, Earth Day was a tough sell to people of color in urban areas.

“Their response was bemusement or even indifference. They were immersed in their own critically important issues... Their communities were under a lot of socioeconomic pressure.”

Nevertheless, Arturo jumped into the Earth Day dance with both feet, simply assuming that land rights and the banning of agrichemicals killing his farm-working neighbors were as important to Earth Day as wildlife conservation and wilderness preservation. Denis Hayes and other members of Earth Day’s organizing team claim that Sandoval had a special role in making environmental concerns credible to minority populations: “Arturo had obvious credibility talking about the daily showers of pesticides falling on Chicano field workers and the nitrate poisoning in their drinking water.”

Speaking to Arturo 50 years later in his office at the Center of Southwest Culture in Albuquerque, he agreed: “I simply saw my work with the Earth Day team as an extension of my civil rights and peace activism on behalf of La Raza.”

Within the weeks immediately prior to the April 22, 1970 celebration, Arturo headed back to Albuquerque to organize the largest Earth Day rally of Native and Mexican Americans in his home state. He sought to close a foul-smelling solid waste treatment plant in the South Barelás barrio, an eyesore that had been imposed upon one of the oldest settlements in the valley without consultation or consent from its Spanish-speaking residents.

Arturo and a mariachi band led a multicultural protest march of nearly 500 participants down along the banks of the Río Grande to the site for the demonstration at a location not far from where the National Hispanic Cultural Center stands today. Their efforts ultimately led to the relocation of the waste treatment facility. That rally can rightly be

called the first successful environmental justice initiative led by people of color in the U.S.

Another team member, Steve Cotton, reminded me that the entire Earth Day organizing team chose to focus national media attention for the evening news on Arturo's march and rally. When the networks claimed they could not get film footage from Albuquerque to New York in time for the evening news, Arturo refused to give them even a soundbite. Finally, ABC and CBS agreed to cover the event on the prime-time news if Arturo would schedule his speech a half-hour earlier than planned. At the last minute, a deal was reached.

Fifty years later, Sandoval continues to guide the Center of Southwest Culture in Albuquerque, which builds capacity among Hispanic and Indigenous communities. The center's programs help dozens of rural communities produce and market affordable organic foods as means to reduce health issues otherwise caused by pesticides and herbicides.

Sandoval continues to guide the Center of Southwest Culture in Albuquerque.

Arturo—who is now 73—agrees that the environment movement ushered in by Earth Day still needs a wider range of voices to help it overcome the deep imperialistic and colonial history that still underlies most social and environmental justice issues in New Mexico. “The path forward for the environmental movement is in aligning it with the current values and strategies of activism in México

and the rest of Latin America. We once took our leads from the activists on the West Coast or East Coast. Now the axis has changed, and we will be enriched more by interactions with our Spanish and Indigenous-speaking sisters and brothers to the south in Las Americas than with anyone else.”

But then, he smiled one of those smiles so warm it could melt the snow in the Sandia Mountains. “Today I am the most in love that I’ve ever been with this place and its people. I even co-wrote a musical about our landscape here, *Tierra Sagrada*. I have hope for the human species that we can still get our relationship right with one another and with the earth... The seedpods of human potential are always waiting to germinate.” ■

Gary Paul Nabhan is an agricultural ecologist, ethnobotanist and author whose work has focused primarily on the plants and cultures of the desert Southwest. He is a pioneer in the local food and heirloom seed-saving movements.

MÉXICO OUSTS GLYPHOSATE AND GENETICALLY MODIFIED CORN

Mexican President Andrés Manuel López Obrador closed out 2020 by issuing a decree that will phase out the use of the herbicide glyphosate and genetically modified (GM) corn in the country. The order gives private companies until January 2024 to replace glyphosate with sustainable, culturally appropriate alternatives to “safeguard human health, the country’s biocultural diversity, and the environment.”

Patented GM seeds are designed for use with specific pesticides, leading to increased use of the chemicals and the emergence of herbicide-resistant “superweeds.” A large body of research has documented glyphosate’s impacts. Bayer, the manufacturer of the popular glyphosate-based product Roundup, has spent the last few years embroiled in lawsuit after lawsuit over the health impacts of exposure to the herbicide. The corporation has been ordered to pay billions in damages to plaintiffs. There is a current lawsuit against the U.S. Environmental Protection Agency (EPA) after the agency decided that glyphosate remains safe to use.

The presidential decree also states that México will “revoke and refrain from granting permits for the release of genetically modified corn seeds into the environment.” Small farmers, organic growers and opponents of GM crops allege that the current use of GM corn in México contaminates age-old Native varieties of corn and encourages the use of pesticides that endanger public health and harm biodiversity. A spokesman for an advocacy group, RAPAM, said, “In order to achieve self-sufficiency and food sovereignty, our country must focus on establishing a sustainable and culturally appropriate agricultural production through the use of practices that are congruent with the agricultural traditions of México.”

NEW MEXICO HEMP COALITION LAUNCHED

New Mexico entered the hemp industry in 2019 with the support of Gov. Michelle Lujan Grisham. The New Mexico Department of Agriculture has issued more than 600 cultivation licenses and has a federally approved hemp production regulatory plan. At least 26 facilities have been permitted by the New Mexico Environment Department to extract, manufacture or warehouse hemp products. The New Mexico Economic Development Department has projected that—with help from Local Economic Development Act (LEDA) funding—about 400 jobs may soon result from hemp-related businesses throughout the state.

Farmers have found that hemp can be challenging to grow well in New Mexico’s unique climate. Over the past year, many have tested strains to find the ones that do well. Some cannabis producers are challenging a New Mexico Department of Health policy that hemp cannot be grown on the same property as medical marijuana.

An industry trade group has been launched to assist farmers and help develop the industry’s supply chain. Through a survey, the New Mexico Hemp Coalition (NMHC) is seeking input on hemp research, industry educational opportunities, resources, market development and promotion of products. Textiles, bioplastics, biofuels, medicinal products and building supplies are some of the ways hemp can be used.

Early leaders that have emerged in the state’s industry include Bernalillo-based Top Organics, a medical marijuana company; Rich Global Hemp, which is receiving LEDA funds for the creation of 180 jobs in the Las Cruces area, and Santa Fe Farms, which acquired hemp services firm Fathom N.M. in 2020. Santa Fe Farms plans to move into a new space in Mesa del Sol, a planned multi-use development in Albuquerque’s South Valley, toward the end of 2021. The company offers agricultural services including harvesting, shucking, drying, milling, prepping and sealing of crops—as well as access to buyers and sellers.

New Mexico Highlands University is planning to offer a certificate in industrial hemp entrepreneurship. The program will offer one track for students interested in the business of industrial hemp, and another track for those interested in the science of plant production.

NORTHERN RÍO GRANDE NATIONAL HERITAGE AREA TO LAUNCH THREE SISTERS EARTH DAY PROJECT

BY MARGARET CAMPOS

The first people grew corn, beans and squash as inseparable sisters who grow and thrive together. Native legend tells that these crops were special gifts from the Great Spirit. In modern terms we call them “companion plants.” By planting the Three Sisters in a single mound or bed, each benefits, and together they grow stronger and produce more. The corn supports the beans, whose vines climb the stalks. Beans replenish the soil with nitrogen. Large squash leaves shade the mound, inhibit weeds and conserve water by slowing evaporation. Some say squash attracts deer and raccoon, but heritage teaches that we should plant extra for those that share the planet with us. The Three Sisters are believed to be the first crops cultivated by Native American tribes and have been found in ruins throughout the Americas such as Mesa Verde in Colorado and Chaco Canyon in New Mexico.

The Northern Río Grande National Heritage Area is considered a “cradle of settlement,” as there is evidence of settlements since 9200 BCE in what we now know as Río Arriba, Santa Fe and Taos counties. It is the commingling of cultures in this region that has made this a place people always return to.

Three Sisters painting by Michelle Tsosie Sisneros (Santa Clara/Navajo/Laguna Pueblo)



Companionship and partnering help grow a more interesting ecosystem.

The Northern Río Grande National Heritage Area (NRGNHA) as an organization was designed with this intertwined history in mind. Our non-profit organization has been building fertile ground by providing small grants and community support since 2009. The NRGNHA is federally funded through the National Heritage Area Program of the National Park Service under the Department of the Interior. NRGNHA’s mission is to help sustain the communities, heritages, languages, cultures, traditions and environment of northern New Mexico through partnerships, education and interpretation. NRGNHA sees community and economic viability rooted in our region’s heritage and environment.

The Northern Río Grande National Heritage Area (NRGNHA) as an organization was designed with this intertwined history in mind. Our non-profit organization has been building fertile ground by providing small grants and community support since 2009. The NRGNHA is federally funded through the National Heritage Area Program of the National

Heritage Area Program of the National



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Our communities have always known that the key to cultural sustainability is *querencia* (land-based heritage). Education of our youth is key to communities’ success. In honor of our *querencia*, in April, the NRGNHA will launch our *Three Sisters Earth Day 2021 Project*. We will distribute over 3,000 seed packets to schoolkids in our three-county area, with growing instructions and a challenge for prizes. Community partners and teachers will help the seeds into the children’s hands.

We plan to expand this project and honor our antepasados (ancestors) by demonstrating the growing process in languages spoken locally: Tewa, Tiwa and Spanish.

We are committed to ensuring sustainability/*querencia* where old meets new in a person-to-person world. We believe strongly in the impact of experiential learning, having experienced it at the knees of our parents and grandparents. However, COVID-19 has left us better prepared to communicate with future generations as we migrate to different platforms and technology-based curriculum. Technology can provide another gateway to the knowledge we wish to impart. We can engage young people by using the technology they have become accustomed to.

We will partner with the New Mexico Acequia Association to grow plants and demonstrate online. We will announce the contest winners at the NMAA’s annual *Congreso de las Acequias* in November. We will use Facebook to track progress and help award prizes, including the “people’s choice.” Gift cards will go to winners for photo submissions of the craziest and tallest corn and most colorful and largest pumpkin.

In the end, some things—thankfully—stay the same. It is still one relationship at a time, or maybe in the case of companions, more than one. Companionship and partnering help grow a more interesting ecosystem, on the ground or in the Cloud.

From food to people, New Mexico is truly a *mescla* (mix) of traditions and cultures that make us one of the most unique pieces of the mosaic that is the fabric of America. While many of the other 32 National Heritage Areas across the country concentrate their efforts on tourism, the Northern Río Grande National Heritage Area has chosen the path of sustainability, ensuring that future generations are able to educate, preserve and express our unique culture. Visitors to the Land of Enchantment will always be able to encounter a truly authentic experience. ■



Margaret Campos is executive director of the Northern Río Grande National Heritage Area (505-753-7273, [HTTPS://RIOGRANDENHA.ORG/](https://riograndenha.org/)). She is a native of northern New Mexico, where she and her family have farmed for generations (Comida de Campos).

COVID-19 LOCAL FOOD CHAIN RESPONSE FUND 2021

Grants Available for Agriculture Infrastructure

New Mexico's health situation under the pandemic is beginning to improve, but uncertain market conditions for farmers and ranchers continue. In response to huge gaps in infrastructure being experienced by smaller-scale and mid-size food producers, the New Mexico Farmers' Marketing Association (NMFMA) and the New Mexico Acequia Association (NMAA) are overseeing a new grant fund set to distribute more than \$200,000 to local farmers and ranchers.

The fund is a continuation of the NMFMA's 2020 COVID-19 Local Food Supply Chain Fund, launched to address disruptions to food and agricultural systems caused by the pandemic. During 2020, \$442,000 was distributed to 60 producers and 45 collaborative projects. This new phase will address the critical shortage of financial resources available for infrastructure—including cold storage and irrigation needs. The goal is to help individual producers recover from the impacts of COVID-19 and ultimately be able to access more market opportunities, thereby benefiting New Mexico communities by increasing access to healthy, affordable, locally grown foods.

Recognizing that the vibrancy of New Mexico's food system must reflect the cultural, geographical and racial diversity of communities within the state, the grant will center equity in decision-making and distribution of the funds. Eight farmers from across the state are helping guide the grantmaking process. Funders include: The Thornburg Foundation, W.K. Kellogg Foundation, #NoRegrets Initiative, McCune Foundation, Whole Foods and the Community Foundation of Southern New Mexico.

Applications must be submitted by March 17. New Mexico producers can obtain an application in English or Spanish at: NewMexicoFMA.org, lasacequias.org, or by calling 505-983-4010 x2 or emailing SARAHG@FARMERSMARKETSNM.ORG.

Farm to School, Farm to Community

Building a Regenerative Food Economy

BY MICAH ROSEBERRY

Most people don't farm or ranch in northern New Mexico to simply make a profit or gain commercial success. They cultivate land to keep the water flowing and maintain the community, grow grandfather's seeds and maintain traditions. The land is understood not solely in terms of production but more as the foundation where cultural knowledge is exchanged and expanded upon. This time of COVID-19 is a good time to remind ourselves of this land's history and use this knowledge to strengthen our community, feed all our children and keep the local food chain strong. We need to act together and share our collective resources to create a system that keeps fields in production and ranchers on the land, all while strengthening our local economy.

These are the Ríos del Norte Farm and Ranch Cooperative's goals. Established in 2020 with support from AIRE (the non-profit Agriculture, Implementation, Research, and Education) and a collaborative Zone grant, the co-op gives small producers the ability to aggregate and sell products to the Taos Municipal School District, other institutional markets, and directly to the community through a local CSA (Community Supported Agriculture) model. For centuries, Taos County developed and implemented a cohesive structure where small farms were designed for sustainable, subsistence farming and ranching rather than high-volume, large-acre commercial production. Data from the 2012 Agriculture Census found that 40 percent of farms in Taos County were nine acres or less, compared to 32 percent statewide and 11 percent nationwide. This is, in part, why large-scale production in the county has historically been so difficult to achieve. It is incongruent with the systems of food aggregation cultivated by generations of farmers and ranchers.

As Taos and northern New Mexico modernized, it was impacted by the industrial agricultural model. Small producers were often replaced with large-scale production. Currently, the dominant system of food aggregation is not built with smaller farming and ranching operations in mind. Many small farmers and ranchers in Taos County are eager to sell their products to the local school district. They aim to grow their existing markets, improve the quality of food and nutrition for students, and strengthen the connection between young people and local agriculture.

Robert Martínez is the co-op's ranch coordinator and small-scale producer whose story exemplifies the problems within our current food system. A seventh-generation farmer and rancher, Robert raises cattle on 35

While farmers were greatly impacted by COVID, ranchers were equally as affected by its impact on the market.

acres near Taos and has provided local beef for the Farmhouse Farm-to-School USDA Lunch Program over the last five years. The program is a small farm-to-school prototype Cornerstones Community Partnerships and Remy's Good Day Fund are providing funding to the Energy Sovereignty Institute (ESI) for development of a website clearinghouse offering technical information and financial resources that support creation of sustainable tribal energy projects and community microgrid systems. Cornerstones

and Remy's support projects on tribal lands and villages in northern New Mexico. They have also provided funding for training and education for youth, the underemployed and the unemployed. For information, email MVOSBURGH@CSTONES.ORG.

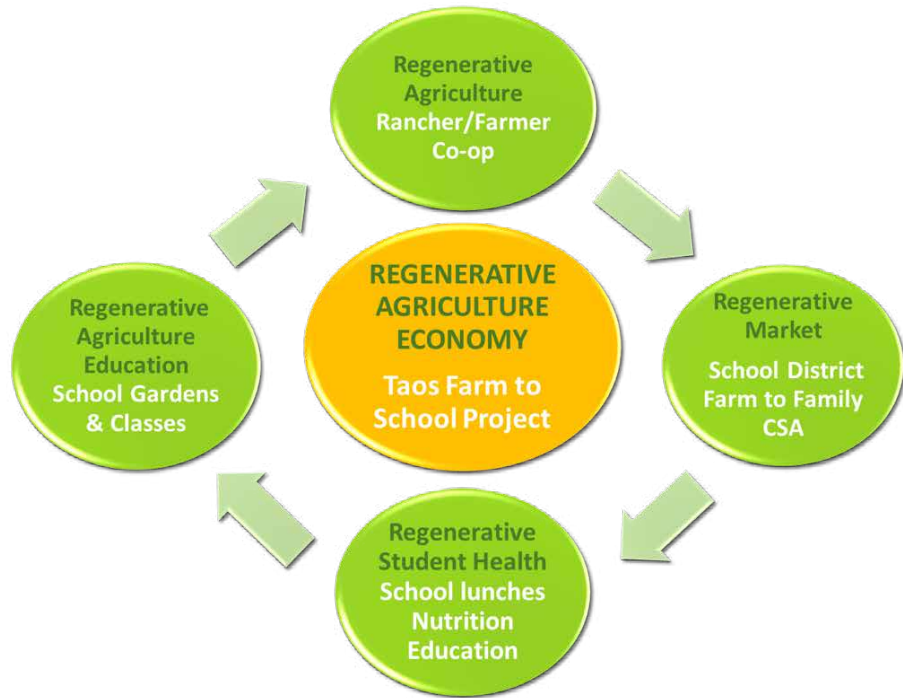
ESI is a collaboration between the Sustainable Native Communities Collaborative and the Microsystems Laboratory. The non-profit's mission is to provide Indigenous communities access to current cultural, technological, policy, regulatory and financial resources that support sustainable energy generation, distribution and use. For more information, call 505-982-9521 or visit: <https://energysovereigntyinstitute.org>. serving 800 meals daily. Although Martínez has improved his land and is generating a quality product, his operation hasn't been profitable, largely because he can't access larger markets that would allow him to scale up with some assurance that he'll have a buyer.

Gaining access to the entire public-school system and other institutions through a farmers' co-op and the anticipated redevelopment of a local slaughter/cut-and-wrap facility would benefit Martínez immensely, making it possible for him and other local ranchers to invest in land or equipment and expand their operations.

Provide security so farmers and ranchers can start implementing more sustainable and regenerative models of land development.

It would additionally provide enough security for farmers and ranchers to start implementing more sustainable and regenerative models of

land development. Martínez is not only concerned with making a profit off of his land but also giving back to the land. He is currently improving his ranch by trialing regenerative agriculture techniques like planting 15 acres of pasture with peas, grasses and oats using a no-till drill. Additionally, he has been diversifying by growing sample beds of carrots, cabbage, kale, beans, squash and corn, with plans



to expand production this season. The potential for farming and ranching operations to start moving in this direction is not only exciting but necessary if we are to create healthier and more ecologically-minded food systems.

While COVID-19 was an unexpected obstacle, the school lunch program continues to forge ahead and expand. Taos County's school district recognizes the benefits of fresh and local foods. In 2020, a stakeholder team consisting of district officials, the school nutrition director, principals, teachers, students, parents, local producers and community organizations worked together to meet the objectives of a USDA planning grant and apply for an implementation grant. This grant aims to enhance the current farm-to-school lunch program by supporting procurement from local growers and pledging to further develop existing school garden and agricultural education programs.

Rollout of school lunch menu items that are 100-percent locally sourced and cost under one dollar each to produce has been planned. One example is an 88-cent burrito made with a local tortilla, New Mexico organic pinto beans, grass-fed and grass-finished local beef, Tucumcari cheddar and salsa. Production is slated to begin at TCEDC's (Taos County Economic Development Corporation) facility for distribution to school cafeterias and community markets. Keeping the food and processing facilities entirely local means providing a vertically-integrated market for farmers and ranchers and contributing to local food sovereignty by leveraging the district's USDA reimbursable lunch program. There are also plans for a food truck to provide these meals with the goal of increasing the number of students participating in the free lunch program and providing healthy, locally sourced items.



We need to share our collective resources to create a system that keeps fields in production and ranchers on the land.

To support the Farm-to-School program, it is important to educate students on where their food comes from. This spring, a “Growing Our Lunch” (GOL) program will expand to

include a hydroponic program at Taos High School’s new grow-dome and high-tunnel greenhouse, where students will train with local farmers to provide greens and vegetables for the USDA lunch program. With a budget of \$15,000, “GOL” plans 12 weeks of programming and to produce 3,000 pounds of lettuce for 15,000 salads.

Along with the GOL program, the school gardens are expanding and being planted with a variety of seeds grown by the students over the last six years. Even as a large percentage of students continue to attend school remotely due to COVID-19, garden activities have been tailored for at-home learning opportunities. Growing Community Now, a project of AIRE, is sending growing kits to students filled with seeds to experiment with growing in their homes.

While trying to build up local food systems, support farmers and ranchers and bring healthy food to students is never easy—much less during a pandemic—Taos County has repeatedly adapted. For instance, when the school district had to revert to a “grab-and-go” lunch program, it made cooking from scratch and the use of local ingredients challenging. In order to sustain the capacity of local producers whose plan to sell to the schools was disrupted, A.I.R.E served as a conduit for aggregating food that would have otherwise been lost. Growing Community Now launched a CSA along with a Farm-to-Family Emergency Food Box Program that procured produce, beef and pantry staples from 15 farms and provided thousands of meals to families in Taos schools and Taos Pueblo. Growing Community Now is continuing their Taos Community Farms CSA and the Donate-a-Share program. EBT purchases provide CSA access to families in need. They are also renewing their internship program, which offers high school students an opportunity to work alongside farmers while learning about sustainable food systems and becoming active participants in local agriculture.

While farmers were greatly impacted by COVID-19, ranchers were equally as affected by its impact on the market. Faced with a year of fluctuating meat prices and a bottleneck in processing facilities, the Ríos del Norte Farm and Ranch Co-op and AIRE worked together to create a Direct-Beef-to-Family program. Robert Martínez coordinated 12 local, traditional co-op ranchers who each provided a beef cow and a half-dozen lambs. Ranchers were able to realize a \$400-to-\$800 increase in profitability per animal, which makes a big difference in a small operation. Moreover, 35 families were able to benefit from healthy local grass-fed and grass-finished beef.

The creation of Growing Community Now’s Taos Community Farms CSA, Farm-to-Family Box Program and internship program, along with the Ríos del Norte Farm and Ranch Co-op, exemplify ways in which communities can be resilient. They also embody the communal ethic of land management that has governed Taos Valley and northern New Mexico for generations. It was only through working

collectively and by sharing resources that farmers and ranchers were able to make ends meet. While the sudden intrusion of COVID-19 amplified the challenging conditions they faced, as has always been the case, in order to persist, farmers and ranchers formed a local coalition underpinned by mutual respect for the land.

Ultimately, success in farming and ranching depend on our relationship with the land and water. It is for this reason that we must align ourselves with the forces of nature that have sustained northern New Mexico for generations. By working



Page 28: Local Beef-to-Family pickup; rancher Robert Martínez moves hay; Three Sisters seeds, bilingual recipes and blue cornmeal; Above: school seed bank; Blue corn and seed from Enos García school garden; seed ceremony at Enos García (pre-COVID).



ENERGY DEVELOPMENT AND THE INDIGENOUS MIND – A CHALLENGE

The energy development interest is mired in a mindset that says there is nothing wrong with how they do business. Their first impulse is to oppose any suggestions that energy development could be done in a different way. They bristle at talk of addressing the climate crisis and of renewable energy. The automatic reaction to the Biden administration's strategy on the climate issue has been to hit the trenches with contingency plans to hunker down for an all-out campaign to defend their domain.

We ask respectfully that we come to the table as equal humanity.

The business of energy development is fused with the ideology of capitalism, which is built on the law of supply and demand. The driving

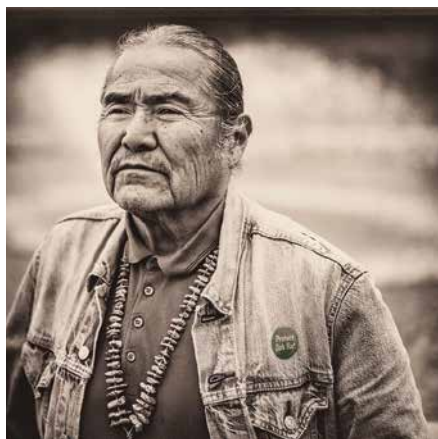
force is economics, the profit margin. Because of the bottom line at the bank and the rat race to maintain it, it is a battle with many fronts with an all-encompassing effort to stay ahead of the game. There is little regard for the human and environmental devastation strewn along the way. That is the cost of doing business, just an expense.

It must be a vicious cycle with potential threats to the supply line, the perceived damage that could be done to the infrastructure of society and government, the payroll of families and health of the corporate bottom line. The metering gauge in the boardroom must be erratic, vacillating between emboldened confidence and frenetic anxiety over the policy that looms to save the environment.

This appears to be the dynamics of the energy development world. We understand. Antithetically, the energy development hierarchy does not seem to have any reason to be open to understand the argument to preserve the Earth. The environmentalists' arguments are pragmatic science. I propose with sincere objectivity that the corporations and the environmentalists could find common ground and agree on some premises based on facts if there were such an opportunity.

Operating on a separate paradigm, I do not believe the corporate big wheels readily comprehend why Indigenous peoples claim the Earth as our mother, that the Earth has a life essence, a spirit. The Indigenous perspective understands the corporate mind. There is no doubt in our Indigenous mind that we can show you the fallacy of your corporate ways and why you need to rethink your priorities. This is a challenge. Our planet, our home, is in trouble. It is imperative that we have a conversation. We ask respectfully that we come to the table as equal human-

ity. The future of our collective world, your business and the lives of our grandchildren and coming generations depends on us to do so. ■



Duane "Chili" Yazzie is a grandpa, farmer, Earth Protector and president of the Shiprock Chapter of the Navajo Nation.

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CLARA PRATTE WINS EMERGING ENVIRONMENTAL GENIUS AWARD

Clara Lee Pratte (Diné), an advocate for tribal economic development and sovereignty, won the 2020 Pritzker Emerging Environmental Genius Award from the UCLA Institute of the Environment and Sustainability. The award honors innovators under the age of 40.

Pratte is the founder and CEO of Strongbow Strategies. The multidisciplinary company has assisted tribal and government clients with business and technical issues, such as cyber security and emergency management, since 2013. "We destigmatize and demystify what it's like to work on tribal lands," Pratte said.



Clara Pratte

Pratte was born and raised in a community that didn't have water or electricity. She is now an advocate of green infrastructure for the Navajo Nation and is part of the leadership team of Navajo Power, a public benefit (B) corporation working to transition tribal lands from extractive industries to large-scale renewable energy projects. "We replace lost revenue from the closing of coal mines and coal plants," Pratte said. "Profits and revenue from those projects are reinvested in the community. Navajo Power reimburses individuals for the use of their land and ensures each home has electricity and water."

A panel of four judges from the XPrize Foundation, Los Angeles City Council, Earthrise Alliance and Worldwide Sustainability at Amazon chose Pratte as the winner from among 20 candidates nominated by a global group of environmental leaders. The \$100,000 prize is funded through a gift to UCLA from the Anthony and Jeanne Pritzker Family Foundation.

Native Business Magazine has also presented Pratte with its Native Disruptor of the Year Award, which honors "a person or people stirring things up and challenging the status quo in order to break down barriers and advance prosperity for future generations of Native people."

Prior to launching Strongbow in 2013, Pratte, Diné, spent much of her career working in the public sector. She has served as the national director of the U.S. Small Business Administration's Office of Native American Affairs, as chief of staff for Navajo Nation President Russell Begaye, and as executive director of the Nation's Washington, D.C., office. She recently served as the Tribal Engagement director for Joe Biden's presidential campaign.

ONLINE INFORMATION RESOURCE FOR TRIBES AND VILLAGES

Cornerstones Community Partnerships and Remy's Good Day Fund are providing funding to the Energy Sovereignty Institute (ESI) for development of a website clearinghouse offering technical information and financial resources that support creation of sustainable tribal energy projects and community microgrid systems. Cornerstones and Remy's support projects on tribal lands and villages in northern New Mexico. They have also provided funding for training and education for youth, the underemployed and the unemployed. For information, email MVOSBURGH@CSTONES.ORG.

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SOLAR FACILITIES IN FOUR CORNERS COMMUNITIES

In July 2020, the New Mexico Public Regulation Commission voted unanimously to replace Public Service Company of New Mexico's (PNM) coal-fired generation at the San Juan Generating Station (SJGS) with carbon-free solar energy and battery storage to be located in Four Corners communities. The new renewables will come online in the summer of 2022.

PNM's first large-scale deployment of battery storage will be part of the new solar facilities. A total of 650 megawatts (MW) will be added to the grid, backed up by four-hour batteries that can collectively provide up to 300 MW. Battery technology is still developing and prices are expected to decline. Longer-duration batteries will be added over the next 20 years. Different storage technologies—such as pumping water into reservoirs to release later for hydro-generation, injecting compressed air into underground cavities to run turbines, and the use of hydrogen to continue operating combustion turbines will be needed to achieve carbon-free generation.

The Escalante Generating Power Plant in Pruitt, New Mexico, operated by Tri-State Generation and Transmission Cooperative, has closed. In its place, Tri-State has commissioned a 200-MW solar facility. It is expected to come online in 2023.

HECATE ENERGY SOLAR FARM ON JICARILLA APACHE LAND

The 500-acre Hecate Solar Facility is being built on Jicarilla Apache land in Río Arriba County. The 50-MW facility in the northwestern corner of the state will be the third-largest solar project on tribal land in the U.S. Oil and gas has been the backbone of the Jicarilla Apache Nation's economy. PNM, which has a long-term power purchase agreement with Hecate, will provide power to large governmental customers, including the City of Albuquerque, which has committed to buy 25 MW per year for 15 years. That's about 54 percent of the city's electricity needs. The solar farm will go online toward the end of this year.

The Río Arriba County Commission has said that despite pandemic-reduced revenue, the county hasn't had to cut public services or employee hours because of \$1.6 million in payments in lieu of taxes from solar developers.

PNM'S AVANGRID MERGER

In October 2020, Public Service Company of New Mexico's parent company, PNM Resources, and Avangrid, the third-largest wind operator in the U.S, announced an agreement for the Connecticut-based company to acquire PNMR for \$4.3 billion, making the combined company a top U.S. utility. The merger was approved by PNM's shareholders on Feb. 12 but must still be approved by federal commissions and regulators in New Mexico and Texas.

The acquisition is also contingent upon PNM divesting its 13 percent share of the Four Corners Power Plant, near Farmington. PNM announced that Navajo Transitional Energy Co. (NTEC, owned by the Navajo Nation) has agreed to take over PNM's share and its coal agreements by 2024. A \$75-million payment from PNM shareholders, plus \$22 million for Navajo Mine reclamation and \$16 million (through bonds) in economic aid to workers impacted by the closures, will "resolve all existing obligations between PNM and NTEC." PNM will still charge customers at least \$250 million to recover previous investments in the plant. NTEC has said that it intends to sell its interest to a third party before 2025. The plant's multistate ownership group plans to shut it down in 2031.

PNM has planned to transition to primarily renewable generation by 2040 but Avangrid's goal is 2035. PNM projects \$100 million in power bill savings for its 530,000 customers over 25 years because renewable energy is cheaper to operate and maintain than coal plants. In 2028, PNM's current fleet of natural gas plants are to be shut down. PNM owns 20 small solar power facilities and purchases 356 MW of wind power from other providers. Avangrid's acquisition would enable the company to come closer to reaching New Mexico Energy Transition Act (ETA) mandates.

MILAGRO SCHOOL OF HERBAL MEDICINE

Milagro School of Herbal Medicine will begin its 250-hour herbal intensive in April. This is a professional-level program that provides a certificate of completion upon graduation. Students can live anywhere in New Mexico or the U.S.

**FOR MORE INFORMATION, CALL 505-820-6321
OR EMAIL INFO@MILAGROHERBS.COM**

SOUTH OF SANTA FE, DOWNWIND OF INDUSTRY

It is evident by the smells and truck traffic that there are a growing number of polluting businesses operating in Santa Fe County, just west of 599, mainly north of Airport Road. Downwind is Santa Fe's Southside, the most densely populated area of the city, home to the majority of our youth, and an area where many low-income and immigrant populations live.

A coalition of Southside residents and groups sought legal help from the New Mexico Environmental Law Center (NMELC). Maslyn Locke and Eric Jantz, NMELC's

“This concentration of polluting industries is an environmental justice issue.” – Maslyn Locke

staff attorneys, are working pro bono to represent them. “We got involved,” Locke said, “because

this concentration of polluting industries is an environmental justice issue. The city and the county are concentrating pollution in communities of color and of lower socioeconomic status.”

Many residents see the location of so many polluting businesses near their homes, schools, parks and athletic fields as environmental racism. “You would never see something like this being proposed for Bishops Lodge or Canyon Road,” Jantz says. “That’s because the folks in those communities have the resources to shut it down quickly.”

The concentrated placement of polluting industries on the Southside is the result of Santa Fe County's decision to designate the area as Commercial/Industrial. Within the area and in close proximity to homes are the Santa Fe Regional Airport, the city's wastewater treatment plant and many other industrial facilities that emanate strong odors and emit fine particulate matter that can penetrate deep into lungs.

Santa Fe is the oldest capital city in the nation. Its history of gentrification dates back to when colonization began. Santa Fe's Southside is one of the few places where affordable housing is available for families, but many new higher-income homes are being built there as well. In fact, there are a couple such homes directly across 599 adjacent to El Camino Real Academy.

Area residents are concerned about the combined effects of COVID-19, which disproportionately affects “essential,” low-income workers, and increased air pollution from industrial businesses. Pre-existing conditions like asthma leave people of all ages at greater risk during the pandemic. Should the consolidated asphalt plant be built, residents fear many more polluting industries may locate in this part of the county, making the aggregated pollution more extreme.

“This area has rapidly taken on the characteristics of a sacrifice zone,” says Earth Care co-director Miguel Acosta. “The neighborhoods were annexed in the last 10



An online public hearing on the asphalt plant's application is scheduled for March 22 at 4 p.m.



Associated Asphalt & Materials hot-mix asphalt plant in Santa Fe
© Valerie Rangel

years by the City of Santa Fe after being neglected by the county for many decades. The collective neglect has now turned more deadly as children and families that are the last to be tested, last to be vaccinated, most likely to be exposed to COVID-19 and least likely to have health insurance, are the most likely to suffer from cumulative impacts on their health. Recovering from the pandemic and building a just, healthy, anti-racist and equitable community go hand-in-hand.”

The community's immediate concern is an application by Associated Asphalt and Materials LLC for an Air Quality Permit from the New Mexico Environment Department (NMED). If the permit is granted, as anticipated, the applicant will then apply to Santa Fe County for permission to consolidate its two existing plants into a single plant, which could operate 24 hours a day, seven days a week. Opponents are calling for stricter permitting requirements, consideration of cumulative impacts and larger equal protection issues.

The NMED will hold a virtual public hearing on the air quality construction permit beginning on March 22 at 4 p.m. Southside and concerned residents of Santa Fe are encouraged to voice their concerns. To obtain the link to the online hearing, email COMMUNITYHEALTHSANTAFE@GMAIL.COM. Acosta and community organizers from Earth Care are available to answer questions about the application and how residents can participate in the public comment process. Written comments may be submitted until March 22, to: Pamela Jones, Hearing Clerk, NMED, 1190 St. Francis Drive, P.O. Box 5469, Santa Fe, N.M. 87502 or emailed to PAMELA.JONES@STATE.NM.US. ■

Estefani Barrera and Domenica Nieto are Environmental Justice organizers with Earth Care. Valerie Rangel is the Community Engagement & Outreach manager at the New Mexico Environmental Law Center.

HEALTH IMPACTS OF ENVIRONMENTAL POLLUTION

A recent report from the Maryland-based Alliance of Nurses for Healthy Environments includes research by the dean of the University of New Mexico College of Nursing, Dr. Christine Kasper, and Dr. Katherine Zychowski, a UNM environmental health scientist. The report says that “communities located next to oil and gas refineries and other polluting industries bear a disproportionate burden of health impacts from environmental contamination.”

Dr. Zychowski has also studied regional health impacts and disparities related to area residents’ proximity to abandoned uranium mines. UNM studies have linked uranium exposure to higher likelihoods of immune deficiencies, hypertension and cardiovascular problems. In evaluating patients’ health, Dr. Zychowski advocates asking about potential pollution exposure from where people live and work.

Another recent study from a physician-led nonprofit found that five counties in New Mexico with oil and gas drilling have higher rates of COVID-19 infections. Last month, Physicians for Social Responsibility sent a letter to President Biden asking his administration to prioritize funding for further studies into the possible link. Studies by the Harvard T.H. Chan School of Health and Georgia State University have also suggested that fine-particulate matter emitted by oil refineries and mines may increase COVID-19’s severity and mortality rates. The National Institutes of Health is conducting a \$1.7-million COVID-19 study on New Mexico coal miners, who inhale fine dust while working.

Wildfires accounted for up to half of all small-particle air pollution in the western U.S. in recent years, as warming temperatures fueled more destructive blazes, according to a study released in January.

CONVERSATIONS ON ENVIRONMENTAL RACISM IN NEW MEXICO

SciArt Santa Fe, a non-profit educational organization, is hosting free public webinars in coordination with Leonardo Art Science Evening Rendezvous (LASER), in coordination with LEONARDO / International Society for the Arts, Sciences and Technology (www.leonardo.info/isast/laser.html). The webinars advocate for sustainable environmental practices, local and global scientific and artistic literacy, technological equity, and freedom of thought and imagination.

In Place: The Aesthetics of Placemaking through Land-based Practices will be presented on June 24, 5:30 p.m. In Place: Ecologies of Sound in the Southwest will take place on Aug. 19, 5:30 p.m. The LASER webinars will be offered in English with Spanish translations. The series is made possible by a grant from the New Mexico Humanities Council. Registration and more information are available at SCIARTSANTAFE.ORG.

SANTA FE COUNTY COMMISSIONERS REQUEST LANL ENVIRONMENTAL IMPACT STATEMENT

In January, the Santa Fe County Board of County Commissioners (BCC) voted to formally request that the National Nuclear Security Administration (NNSA) complete a new Site-Wide Environmental Impact Statement (SWEIS) for Los Alamos National Laboratory (LANL) before expanding plutonium pit production at the facility. A plutonium pit is the triggering device for nuclear warheads. In February, the Santa Fe City Council passed a similar resolution.

Complying with the request would mean suspension of the planned expansion of plutonium pit production until any outstanding nuclear safety issues are resolved.

The county resolution introduced by commissioners Anna Hansen and Anna T. Hamilton passed unanimously following amendments from Commissioner Henry Roybal. “Public health and safety and the need to protect our water supply are so important,” Hansen said. Hamilton added, “The National Environmental Policy Act (NEPA) needs to be fully enforced.” County Resolution 2021-011 cites specific safety concerns related to the environment, LANL personnel and the general public, as well as issues regarding compliance with transparency, in allowing the public opportunities to review, analyze and provide comments regarding major federal proposals.

Last month, LANL announced that it plans to house about 75 employees in an office building in downtown Santa Fe that will “facilitate the Laboratory’s educational partnerships, workforce development, recruiting and technology transfer.”

STATE BUILDINGS GREEN ENERGY PROJECT

Solar carports are being constructed in the parking lots of four New Mexico government buildings (Montoya, Simms, PERA and Chino) as part of the General Services Department’s State Buildings Green Energy Project. The \$32-million initiative will cut the energy consumption of 30 buildings in Santa Fe and reduce the state government’s carbon footprint.

The project includes installation of rooftop solar on 16 buildings, installation of window film, water conservation measures and upgrades to HVAC systems and controls, lighting and transformers. When completed this year, the project is projected to reduce electric bills for the buildings by 50 percent and save the state more than \$1 million annually.

CHANGE IS NEEDED

BY JAKE KARLINS

Teaching is a career I love for many reasons—being able to help others appreciate art and writing, the creativity of it, and having had bad jobs in the past has helped me appreciate a good job. It's a great profession, so when I talk about issues in the educational system, I say these things not out of total bitterness or despair—it's because I see potential and want to make things better. That said, our schools have a long way to go. There are many problems.

Let me list a few: students dropping out, drug use, unkindness and bullying, lack of funding, teacher turnover, a lack of stability, lack of vision on the part of teachers. I could list more, but that last one is my main focus here. I want to briefly outline some of my ideas about what our public education system could be. I have no doubt these ideas could improve all sorts of schools. I'm just focusing more on what I know.

COVID-19 has put pressure on students and families, highlighting some problems that were there for a long time. COVID and the many problems it has led to have created a time of transition, but schools have been in transition for a long time. Part of this goes to George W. Bush's "No Child Left Behind" initiative and its offspring, the Core Standards movement. I'll talk a bit about the latter before moving on to new ideas and solutions.

If you read works by great education scholars, you start to get a sense of the incredible possibilities.

These two movements in the world of education were not totally off base. Our country's schools have

had problems for a long time, and it's laudable that politicians have wanted to fix them. As you may know, some of these problems have to do with race and class; poor students and students of color have been deprived of a good education. Rich students and White students have been lucky in terms of education. Fixing this is crucial, and part of the motivation behind things like "No Child" and Core Standards. However, these systems have not worked in two ways: in terms of what they set out to accomplish (overall performance and test scores) and in terms of reforming the system on a deep level.

Even if, through reform, students' test scores were to rise significantly, year after year, would that be enough? If students seemed to perform better in the classroom, and schools seemed more fair, would that be enough? It would be a beginning. But it definitely wouldn't be enough. This is because the public education system lacks soul, or what some psychologists call "psyche." This system is soulless and harms our young people as a result. In other words, the very setup of schools does not allow kids to learn as they should. A common refrain from advocates of our current system is that schools need to "prepare students for careers and college." This is fine. No one would argue against getting a job or going on to college, but that's not enough. It's a very limiting idea of what education could be. If you read works written by great education scholars, pedagogues, like Dewey and Montessori and Steiner, you start to get a sense of the incredible possibilities inherent in schools. To narrow it down to getting a job and maybe going to college is truly sad, in my opinion. That's not all there is to life—not even close.

I mentioned a lack of vision on the part of teachers. This might sound harsh. It might even get me in some trouble with my colleagues. What I mean, though, is a vision outside of the idea of college and career. I think a lot of educators would admit that the two c's, let's call them, aren't the be-all end-all of learning, but would they be able to say, what is the point? I'm not sure. Kids, especially teenagers, will ask, "Why do I have to learn this?" Teachers need to be able to answer that

School should be about training the mind and connecting to the wisdom of our cultures.

immediately, without hesitation, and with an answer which is compelling, genuine, personal (not rote or robotic).

School is ideally about an introduction or initiation into our culture, and about learning to think—clearly, deeply, creatively. Maybe I'm still too idealistic, although I'm no longer an idealistic young person. I think this is what school

This system is soulless and harms our young people as a result.

should be. Our system, instead of promoting an artificial tallying of skills learned, "competencies" mastered, should be about delving into the richness and wisdom of cultures. The mind has amazing potential. We see this when we look at great artists, inventors and geniuses. So school should be about training the mind to

the highest levels possible, and this is one of the main functions of subjects like math, English and so on: training the mind. If this kind of talk sounds a little bit like what happens at a private school or an alternative school, that's the point—let's make all of our schools more like private schools. Everyone deserves the best.

So those two elements, training the mind to a high level and connecting to the wisdom of our culture, are what I'm talking about in terms of vision. However, it's possible that this sounds too abstract, and you might wonder about some practical ideas with regard to reform. I will list a few. First, get rid of or deeply change the Core Standards and how they are tested. The Standards guide a teacher's day-to-day planning and limit the work of good educators. Second, make art and creativity a larger part of the basic curriculum (not an afterthought). Third, focus more on great works in humanities classes. Next, improve in-service training for teachers and staff. One way would be to include the work of great theorists like Dewey, Freire, Montessori, and so on. Another would be to include the work of psychologists, whose insights into the mind and human development are often forgotten in favor of platitudes, routine and an overabundance of common sense.

The last suggestion I'll make is to have schools encourage more freedom for students and more discussions in class. These things are typical of fancier schools, and, again, I want all schools to be more like the alternative and private schools. If you do a little searching into the idea of the "hidden curriculum," this will make even more sense.

There's still more to say. These are some very general ideas about education reform. I love my job, and I want our state to improve. One of the things New Mexicans are embarrassed about, unfortunately, is the rankings of our schools. I'm suggesting, here, that change is needed, and very much so. I'm also suggesting that the way we've been going about this is not working. We need a new way. ■



Jake Karlins, a public school teacher in Santa Fe, has a B.A. from Oberlin and an M.A. from Simmons. He has taught ESL, writing, meditation and other subjects around the world. He lives in the city with his wife and son.

Scott's House

An end-of-life, care facility and respite home

ARTICLE AND PHOTOS BY **ALEJANDRO LÓPEZ**

It has often been said that all phenomena are closely intertwined, so much so that a butterfly flapping its wings in one part of the world can stir up a wind that rustles a tree's leaves clear across the world. And so it may be with human affairs. Had 24-year-old Scott not died in a London hospital of a brain-injury, after his Welsh mother, Glenys Carl, a nurse, had cared for him for almost four years, it is unlikely that Scott's House, a recently opened, end-of-life, care facility and respite home in Santa Fe, would have come into existence.

While attempting to recover from her loss, Carl accepted the invitation of a friend to come live in his empty Santa Fe house for a time. It was not long before she was taking care of terminally ill patients for a local agency. Recognizing the dire need in the area for such a service, she went on to found Coming Home Connection, a volunteer-based organization that provides in-home palliative bedside care to people with chronic conditions such as ALS, cancer or AIDS.

For several years, Carl was intent on establishing a permanent facility whose professional staff, including many volunteers, would offer free, end-of-life care for those in need. "People facing major health crises, particularly those that are terminal, deserve to be cared for in a safe, kind and loving manner, regardless of whether they have the finances or insurance to cover such care, or whether they have family members to care for them," said Carl. "Frankly, many in our community don't have that kind of safety net, through no fault of their own. They have simply fallen through the cracks of our fractured, cumbersome health care and social services systems."

After tireless fundraising efforts, three years ago Carl found a house not far from St. Francis Drive that had been on the market for several years. She knew that it would be ideal for meeting patients' needs. Located on expansive grounds, it was quiet, sunny and spacious. Best of all, it was outfitted with a pleasant kitchen, adequate

office space, lounging areas, a library and several bedrooms with easily accessible bathrooms. Outside, there were portales, gardens, trees, shrubs and even a sauna. Carl and her supporters managed to buy it under the auspices of Scott's House, a 501(c)3 non-profit organization.



Scott's House was able to open briefly in 2020 when it seemed that the pandemic had spared most of New Mexico. Due to an abundance of caution, however, Carl temporarily closed the facility until February 2021, when she decided that it was safe to take from one to three patients under the strictest of safety measures.

"It made me very happy to have taken care of one patient who resided at Scott's House for a few months before he expired from a very serious condition," Carl said. "His home and immediate family were thousands of miles away, and he had no one but us and a few friends who would come to see him. He spent most of his time sitting outside in the sunshine talking to members of his family by phone. He let them know that they should not worry about him because he was being very well taken care of by some 'nice folks.' His passing was peaceful and contemplative. Only during his final two or three days did he remain in bed. I would speak comforting words to him, as I would have to Scott, even though he might not have heard me. I missed him when he departed this plane of existence." ■



Most patients are referred by local hospices or placed in Scott's House by their families. The facility is sustained by grants and donations, online at WWW.SCOTTSHOUSE.ORG or by mail, to P.O Box 31279, Santa Fe, N.M. 87594

*Glenys Carl at the new Scott's House facility in Santa Fe
© Alejandro López*

TREESMART SANTA FE TO INCREASE HEALTHY TREE CANOPY

TreeSmart Santa Fe is a new public-private partnership between the city and its community partners. Focusing on the highest-need areas first and expanding as resources allow, the project will engage residents and organizations to equitably plan and implement projects that provide or increase tree canopy.

TreeSmart's core principle is that cultivating a healthy canopy is not just about planting more trees. It is about planting the right tree (and sometimes other vegetation), in the right place, with the right resources, at the right time. Not all trees can thrive in Santa Fe. The climate is changing and water is scarce. City data shows that nearly 20 percent of the trees in parks are in poor condition, dying or dead.

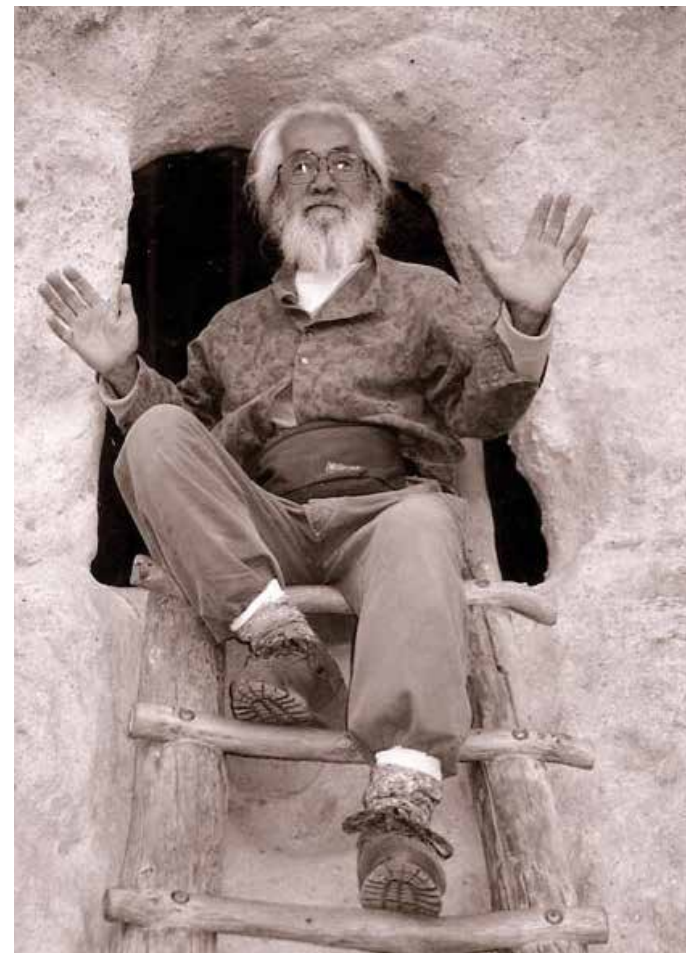
Using data-driven insights, trees can cool the city, conserve energy and water, and nurture vibrant, livable neighborhoods. Sunlight is absorbed and held in by materials like roads and rooftops, which are typically darker in color. When they release heat back into the air at night, it increases the temperature. Tree canopies mitigate this urban heat island effect as they shade surfaces and provide cooling through transpiration—releasing moisture into surrounding environments.

The initiative is also intended to help the city achieve environmental, social, and economic sustainability, while reducing greenhouse gas emissions and removing carbon from the atmosphere. The city has launched a TreeSmart Santa Fe website (arcgis.com) as an ongoing source of information.

Councilor Carol Romero-Wirth, chair of the Quality of Life, and Water Conservation committees, is spearheading the launch of the initiative, planned for April 30, National Arbor Day. A small, COVID-safe tree-planting ceremony will be held. With Councilor Roman Abeyta, Romero-Wirth will co-sponsor a resolution outlining TreeSmart Santa Fe's goals and objectives. Operational execution will involve various city entities, with the Parks Department, under the leadership of Acting Director Melissa McDonald, as the lead agency. The Sustainability Office, the Public Engagement Office, the Water Conservation Office, the Santa Fe Municipal Tree Board and the Santa Fe River Commission will also be engaged with the project.

"A Fund for Santa Fe's Trees" has been established at the Santa Fe Community Foundation with a \$30,000 donation from a national foundation; further donations are encouraged: santafecf.org/give-now. The Santa Fe Watershed Association will direct funds to particular projects that enhance the tree canopy. Donations can also be made at [HTTPS://WWW.SANTAFEWATERSHED.ORG/DONATE/](https://www.santafewatershed.org/donate/).

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Japanese poet, Nanao Sakaki
© Jack Loeffler

atoms that exist in my body are actually billions of years old.

So, my thoughts for the day focus on the need for our species to recognize that reciprocity both between our selves, and with our planet Earth is essential to our continued existence. The human species is NOT Nature's reason to be. We are but part of the great pageant of existence, an evolutionary anomaly, an experiment in consciousness. My question: Is human consciousness sufficiently expansive to provide for our continued existence—or not?

In all likelihood, I won't live long enough to find out. But my grandchildren just might. For me, that's a profound thought. For a long time, I have placed my trust in human consciousness to recognize that involvement in conflicting ideologies is wrong-minded. Ideologies, be they political, religious, traditional or otherwise are but human inventions not intended to jeopardize our tenure as a species. By gradually re-wilding my own consciousness, I re-affiliate with the flow of Nature where I've always felt most comfortable spiritually. That's what works for me at this stage of existence. But then this is just myself writing, and I would never claim any right to have the last word. ■

*Jack Loeffler is an aural historian, radio producer and author. He has written many books concerning cultural and environmental issues, including *Headed into the Wind: A Memoir*, named one of the 2019 Southwest Books of the Year.*

forms (and skin colors) are superior, are examples of cultural views first imposed during this colonial period. In this way, ecological restoration means so much more than just a technical and financial fix; it means we need a cultural and historical rethinking.

Without culture, restoration is just another top-down mechanical solution gifted from an outside savior-complex.

to change human culture.” The world, however, sees culture and restoration differently. A recent study looking at restoration projects around the world revealed that in North America the projects were primarily designed to reach conservation goals, whereas in Africa and Asia, projects focused more on cultural harvesting and traditions. A survey of restoration projects in the U.S. from 1995 to 2014 revealed that few mentioned cultural values, let alone cultural uses, of the land.

Leaving culture out of the restoration conversation (or any conversation) is always a clear and present danger. Without culture, restoration is just another top-down mechanical solution gifted from an outside savior-complex, rather than a community-healing process developed from within. Restoration can be, as one researcher describes it, “another form of colonial hegemony” in which the needs and cultural aspirations of non-Western peoples are sidelined once again. It could even look like what happened on Dec. 27, 2020.

On that day, a young Diné/Oneida man and his sister went for a walk at the Petroglyph National Monument in Albuquerque, New Mexico. When they went off trail to pray and social-distance, a Park Service ranger came over to tell them to stay on the trail “to try and let this [land] get natural and revegetated.” Instead of leaving it there, he demanded their identification so he could run a background check. After refusing to reveal his identity, the young Native man was repeatedly tasered by the ranger. As this example shows, restoration can be weaponized against non-Western peoples and cultures, justifying any form of harassment or abuse as long as the person holding the badge calls it “a law enforcement action.” If culture is not rightfully placed in society, then “healing the land” will eventually be another way of “stealing the land,” and “restoration” will be another word for “cultural abuse.”

Even science supports the idea that culture is important to restoration. For example, the most successful seeds and plants to use for a restoration project are those that have adapted to the climate and soil of that specific area. Well, the same is true for people and practices to restore the land. Some of the best restoration practices promoted today for specific environments are just revived practices from communities that have lived in those environments for a long time. There are examples of this everywhere: from “old-school” watershed practices that are now used to preserve water and soil in our mountains, to once again seeing prescribed fires as the medicine that forests need to stay healthy and reduce the threat of catastrophic wildfire, to reviving coastal marine ecosystems by bringing back ancient clam gardens. These examples are all part of an ongoing resurgence of cultures that colonization vilified and tried to wipe out.

The power of ecological restoration lies in its potential to shape culture itself. A perfect example of this is found in New Mexico. Despite spending hundreds of millions of dollars to preserve our Río Grande bosque, primarily with heavy machinery to reshape banks and levees and remove invasive trees, the largest cottonwood riparian forest of its kind is still declining. Truthfully, the only cost-effective large-scale effort that will allow our cottonwood forest to continue to exist would be a massive community campaign. As Wangari Mathai, the great Kenyan restoration ecologist and founder of the Green Belt Movement, said, “Tree planting does not require a great deal of money or technology; it requires the mobilization of citizens to plant trees and nurture them.”



Considering that it was the damming of the river, preventing natural springtime overbank flooding, that created this massive ecological problem (not to mention the huge cultural impact it has had on our Pueblo brothers and sisters), such a community-wide effort only makes sense. It is part of collectively fixing what has been broken. In other words, the ultimate solution to restoring the bosque is for local neighbors and communities to organize and team up to take care of the land. In fact, this is another ancient cultural practice that is making a comeback. For the Río Grande, as with imperiled ecosystems all over the world, the solution to healing the land is exactly the kind of solution that can heal us humans. ■

Maceo Martinet, Ph.D., is an ecologist and educator who works on environmental restoration, water conservation and community-based education projects throughout New Mexico.

Invest in Agriculture, Land and Water

helps maintain wildlife migration corridors and offers natural carbon-sequestration benefits.

Persistent drought combined with degrading headwaters and watersheds also create profound challenges for agriculture and the ability to sustain local food production. By generating food, as well as revenue streams, agricultural systems are the lifeblood of rural New Mexico. In order to safeguard our acequias, agricultural traditions and rural economies, it is vital we protect the resources that are the foundation of our local food systems.

The past year illustrated the resilient spirit of New Mexicans and the pandemic highlighted that protecting and restoring New Mexico’s agricultural lands and natural resources are vital to the health and well-being of all of our people. New sources of funding, as envisioned by an agricultural and natural resources trust fund, is an essential component to creating a more resilient natural world and can help lay the foundation for economic recovery, while fulfilling the goals of the state’s climate strategy.

With this in mind, during 2020, leading advocates hosted a series of listening sessions focused on restoration, acequias, tribal lands, equity, agriculture, conservation easements and land acquisitions. More than 350 people, including members of the conservation, hunting and angling communities, farmers and ranchers, staff from state and federal agencies and tribal members, attended the sessions. A summary of the listening sessions can be found here: [HTTPS://WESTERNLANDOWNERS.ORG/PUBLICATION/NEW-MEXICANS-AGREE/](https://westernlandowners.org/publication/new-mexicans-agree/)

The conclusion of these listening sessions reiterated what many of us already know: in order for the Land of Enchantment to continue to thrive now and into the future, we must invest in our natural resources that give us so much. ■

Michael Dax is with Defenders of Wildlife, Paula García is with the New Mexico Acequia Association, Dan Roper is with Trout Unlimited, and Leslie Allison is with the Western Landowners Alliance. Staff from Audubon Southwest, Indian Nations Conservation Alliance, New Mexico Acequia Commission, New Mexico Association of Conservation Districts, New Mexico Land Conservancy, Nuestra Tierra and Rocky Mountain Farmers Union also contributed to this op-ed.

Let's build back a better society than we had before the pandemic.

progress towards a goal. For example, reduction of the number of occurrences of certain medical conditions such as asthma, diabetes and obesity, together with other metrics, can approximate progress towards improved public health.

Even happiness can be measured! The Gross National Happiness (GNH) Index was developed to demonstrate how the population of a country is faring in a range of categories and is used in addition to the Gross Domestic Product Index to expand how we assess how a country is doing.

“The GNH Index . . . is very much a living experiment with truth. It seeks to deploy rigorous scientific tools to convey more fully the colour and texture of people’s lives than does the standard welfare measure of GDP per capita, to evolve the dimensions and the methodology of UNDP’s [United Nation Development Program] Human Development Index, and to draw on innovative work from other initiatives seeking to measure human progress on a shared planet.” (An Extensive Analysis of GNH Index, 2012)

What we choose to measure and how we choose to achieve those goals is important, as is how we effect the transition in a way that is fair and just. As we move to cleaner sources of energy, for example, we must consider how that affects the lives of people working in industries that will be reduced or eliminated. The State of New Mexico introduced a just transition as part of its plans to transition away from fossil fuels to emission-free energy, including what will happen to communities that have housed power plants that will be shuttered.

Similarly, as local retail is affected by online shopping, we need to consider what happens to those businesses, the people they employed and the spaces they oc-

cupied. How would it look if we use improving the quality of life for people as inspiration for what those people and spaces can transition into? What if we ensure fun and educational activities for children and youth? What if we ensure that older people have opportunities to give back to others from their lifetimes of experience? What if we dare to consider how the world could be rather than what it has been and set our sights on achieving a healthier and happier society? Let’s build back a better society than we had before the pandemic. Let’s not just survive this pandemic; let’s leverage the recovery effort to thrive.



What would an equitable New Mexico look like? Who are the vulnerable groups? What historic injustices can be addressed? Each state and local area has its own unique history and legacy that underlies unconscious biases that affect all of us, that underlie our policies, practices and institutions, making it difficult to clearly see how the game has been set up to benefit some and not others. If we take a deep reflective look at ourselves and our institutions, what implicit biases will we uncover? If we do the work to unearth those biases and change our beliefs and our institutions, what riches of human potential and resource would we free? How much better would our lives be if we all benefited from all of the potential that is currently being suppressed?

Let’s find out! ■



Katherine Mortimer is the founder and principal of Pax Consulting, LLC, a New Mexico business providing government and businesses with tools they need to achieve the three interconnected pillars of sustainability: environmental stewardship, economic vitality, and most importantly, social justice.

WHAT'S GOING ON

ALBUQUERQUE / ONLINE

MARCH 15

CITIZENS' CLIMATE LOBBY ABQ

[HTTPS://CITIZENSCIMATELOBBY.ORG/CHAPTERS/NM_ALBUQUERQUE/](https://citizensclimatelobby.org/chapters/nm_albuquerque/)

Nonprofit, nonpartisan, grassroots organization meets second Sat. morning each month. lisas.ccl@gmail.com

MARCH 22-26

SPRING BREAK CAMPS

ABQ BioPark, CABQ.GOV/SPRINGBREAKCAMPS

A variety of camps for toddlers to teens. In-person: Spring Wildlife Safari at the Zoo and Río Grande Adventure at the Botanic Garden/Aquarium. Tracks for grades 2-3 and 4-6. Full week: \$230/\$207. 20 virtual camps, 30–90 minutes. 505-768-2000

THROUGH APRIL 3, SAT., 10 AM–12 PM

DOWNTOWN GROWERS' MARKET

DOWNTOWNGROWERS.ORG, *Parking: 715 Gold Ave. SW*

Winter market. 20-plus vendors include artisans, wellness products, food products. Orders can be placed online and picked up curbside.

SANTA FE / ONLINE

MARCH 11, 5:30 PM

REVISIONING SUSTAINABILITY

WWW.ARCHITECTURESANTAFE.ORG/RH-SUSTAINABILITY-PANEL

A comprehensive look at macro-scale questions and possible solutions for comprehensive sustainability in SF. Panelists: Eric Aune, SF Metropolitan Planning Organization; Jesse Roach, Water Div. Dir., City of SF; Mariel Nanasi, Exec. Dir., New Energy Economy; Jean Carroon, FAIA, LEED Fellow–Principal, Goody Clancy. Moderated by Anthony Guida, AOS Architects Dir. of Sustainability. Free.

MARCH 13, 10–11:45 AM

350 SANTA FE MONTHLY MEETING

[HTTPS://350SANTAFE.ORG/](https://350santafe.org/)

Climate crisis fighters around Santa Fe collaborate.

MARCH 18

SANTA FE WATERSHED ASSOCIATION ANNUAL BENEFIT

[HTTPS://WWW.SANTAFEWATERSHED.ORG/EVENTS/2021-03/](https://www.santafewatershed.org/events/2021-03/)

Short film and livestream. Virtual silent auction.

MARCH 22, 7 PM

ZOOM AND A BOOK

[HTTPS://WWW.SLOWFOODSANTAFE.ORG/PROJECTS](https://www.slowfoodsantafe.org/projects)

The Color of Food by Natasha Bowens. Critical issues at the intersection of race and food. April: Food from the Radical Center by Gary Nabhan. Stories of diverse communities bringing back North America’s unique fare. May: Sacred Cow Solutions to our current food system.

MARCH 31 DEADLINE

SITE-SPECIFIC ART OPPORTUNITY

[HTTPS://ARTIST.CALLFORENTRY.ORG/FESTIVALS_UNIQUE_INFO.PHP?ID=8150](https://artist.callforentry.org/festivals_unique_info.php?id=8150)

Commission project in collaboration with the community at the Southside Teen Center, set for completion in 2022.

ANNABLYTH@STATE.NM.US

THIRD SAT. EACH MONTH, 11 AM–3 PM

COMMUNITY ART CLOSET

SW Annex, Midtown Campus, 1600 St. Michael’s Dr.

Similar in concept to community food pantries, this resource organized by the nonprofit Vital Spaces, provides donated art supplies for all ages and skill levels, available to the SF community for free. contact@vitalspaces.org

THROUGH JULY 17, WEDS.–SUN., 11 AM–4 PM

60-PLUS YEARS OF ART BY LINDA LOMAHAFTEWA

IAIA Museum of Contemporary Native Arts, 108 Cathedral Place

“The Moving Land.” Works by the Hopi/Choctaw artist. \$10/\$5, under 16 free. Timed tickets: 505-428-5912, www.iaia.edu/store

SANTA FE MINI SEED LIBRARIES—FREE SEEDS

Eleven locations throughout SF County. Find dates, times and addresses at SFEMG.ORG and SANTAFELIBRARY.ORG.

A partnership of SF Extension Master Gardeners, SF Public Library and Home Grown NM.

STATE MUSEUMS

Museums have reopened with COVID-safe practices. Museum of International Folk Art (10 am–4 pm), Museum of Indian Arts and Culture (10 am–4 pm), N.M. History Museum (10 am–4:30 pm), N.M. Museum of Art (Tues.–Sun., 10 am–4 pm). NEWMEXICOCULTURE.ORG/VISIT

HERE & THERE / ONLINE

MARCH 4, 4–6 PM

ACEQUIA CAREER DAY 2021

LASACEQUIAS.ORG/2021/01/21/CAREERDAY/

Middle school, high school and college-aged youth can learn about job and livelihood paths to work as a protector of N.M.’s acequia waters, culture and traditions.

MARCH 5–14

LEOPOLD WEEK

WWW.ALDOLEOPOLD.ORG/NEWS-EVENTS/CALENDAR/COMMUNITY-EVENTS/

Organizations and individuals celebrate Aldo Leopold and land ethic through speakers, community readings, screenings and workshops.

MARCH 10, 1–3 PM; MARCH 13, 10 AM–12 PM

2021 RÍO CHAMA CONGRESO

[HTTPS://WWW.SANJUANCHAMA.ORG/RIO-CHAMA-CONGRESO-2021](https://www.sanjuanchama.org/rio-chama-congreso-2021)

“Uniting Our Watershed.” Combining local knowledge with scientific management to sustain Indigenous cultures, provide educational and economic opportunity and protect resources. Presented by the San Juan-Chama Watershed Partnership. Free. Registration:

MARCH 11, 6 PM

GREEN FIRE THEN, NOW AND TOMORROW

[HTTPS://MY.DEMIO.COM/REF/DMD7A3NNWZFHAYUC?UTM_SOURCE=ALDO+LEOPOLD+-FOUNDATION](https://my.demio.com/ref/dmd7a3nnwzfhayuc?utm_source=ALDO+LEOPOLD+-FOUNDATION)

“EXAMINING AN EVOLVING LAND ETHIC.”

Discussion with cast members of documentary film (free to stream) about legendary conservation thinker Aldo Leopold.

MARCH 15–26

PUBLIC COMMENT PERIOD ON ENVIRONMENTAL ASSESSMENT FOR JULY 12 BLM OIL & GAS LEASE SALE

[HTTPS://WWW.BLM.GOV/PROGRAMS/ENERGY-AND-MINERALS/OIL-AND-GAS/LEASING/REGIONAL-LEASE-SALES/NEW-MEXICO](https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/regional-lease-sales/new-mexico)

MARCH 19, 12–1 PM

HEALTHY SOIL AND FARMING PANEL

WWW.SLOWFOODSANTAFE.ORG/2021-FOOD-SYSTEMS-SERIES

Isabelle Jenniches of N.M. Healthy Soils will be joined by a farmer and a rancher to talk about soil health for healthy food and regenerative agriculture.

MARCH 30, 7 PM

CLIMATE REALITY NORTHERN N.M.

[HTTPS://WWW.CLIMATEREALITYNM.ORG](https://www.climateRealityNM.org)

Meetings are usually held the last Tues. each month.

MARCH–NOVEMBER

ROCKY MOUNTAIN YOUTH CORPS

WWW.YOUTHCORPS.ORG

Recruiting crews ages 18–25 for conservation projects such as trail restoration, historic preservation, invasive species removal, forest fire prevention. Living stipend, education award. 575-751-1420

APRIL 2, 11:56 PM

EMERGENCY RELIEF GRANTS FOR N.M. ARTISTS

[HTTPS://WWW.516ARTS.ORG/OPPORTUNITIES/FULCRUM-FUND](https://www.516arts.org/opportunities/fulcrum-fund)

COVID-relief grants available to N.M. artists for essential expenses. Artist-run artspace can also apply in support of their organizations.

APRIL 20–22, 9 AM–12:30 PM

2021 N.M. GROWN INSTITUTE

Virtual gathering for N.M.’s Farm-to-Cafeteria Practitioners. A forum for building skills, networking, dialogue and collaboration among professionals, parents, students, families and decision makers. Presented by the N.M. Grown Coalition and Interagency Task Force. KENDAL.CHAVEZ@STATE.NM.US

APRIL 30 SUBMISSION DEADLINE

15TH ANNUAL NEW MEXICO-ARIZONA BOOK AWARDS

[HTTP://NMBOOKCOOP.COM/BOOKAWARDS/ENTRY-INFO/ENTRY-INFO.HTML](http://nmbookcoop.com/bookawards/entry-info/entry-info.html)

Program honors the books by authors or publishers from N.M. or Arizona as well as books about or set in either state. Judged by booksellers, librarians, teachers. Books with publication or copyright date since Jan. 1, 2019 are eligible. 505-344-9382,

JUNE–AUGUST

EARTH KNACK EXPERIENCES

WWW.EARTHKNACK.COM

Crestone, Colo.

Independent outdoor living skills for the 21st century. 719-256-4909

AUGUST 3–6

ASES SOLAR 2021:

EMPOWERING A SUSTAINABLE FUTURE

[HTTPS://ASES.ORG/CONFERENCE/](https://ases.org/conference/)

50th Annual National Solar Conference, Boulder, Colo.

2ND SAT. EACH MONTH, 1–3 PM

CASA SAN YSIDRO PROGRAMS

CABQ.GOV/CASASANYSIDRO

3/13: Traditions of the Santero; 4/10: Native American Language Revitalization in N.M. COVID-safe tours (Corrales, N.M.) of late 19th-century collections and online programs. 505-898-3915

NEW MEXICO STATE MUSEUMS

NEWMEXICOCULTURE.ORG/VISIT

Museums and historic sites have reopened on a modified schedule with COVID-safe practices. Virtual programs are continuing online.

1ST AND 3RD WEDS., 3 PM AND ARCHIVE

READY, SET, GROW! WEBINARS

[HTTPS://DESERTBLOOMS.NMSU.EDU/READY-SET-GROW.HTML](https://desertblooms.nmsu.edu/ready-set-grow.html)

START SAVING NOW
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Going solar today will directly reduce your carbon footprint and slow global warming. By powering your home or business on clean and renewable solar energy, you are also benefiting from decades of reduced electric bills. Good for you... Good for the planet!

FINANCIAL INCENTIVES

- Federal Income Tax Credit: 26%
- NM State Tax Credit: 10%
- USDA-REAP Grant (businesses): 25%
- MACRS Accelerated Depreciation (100% 1st year)

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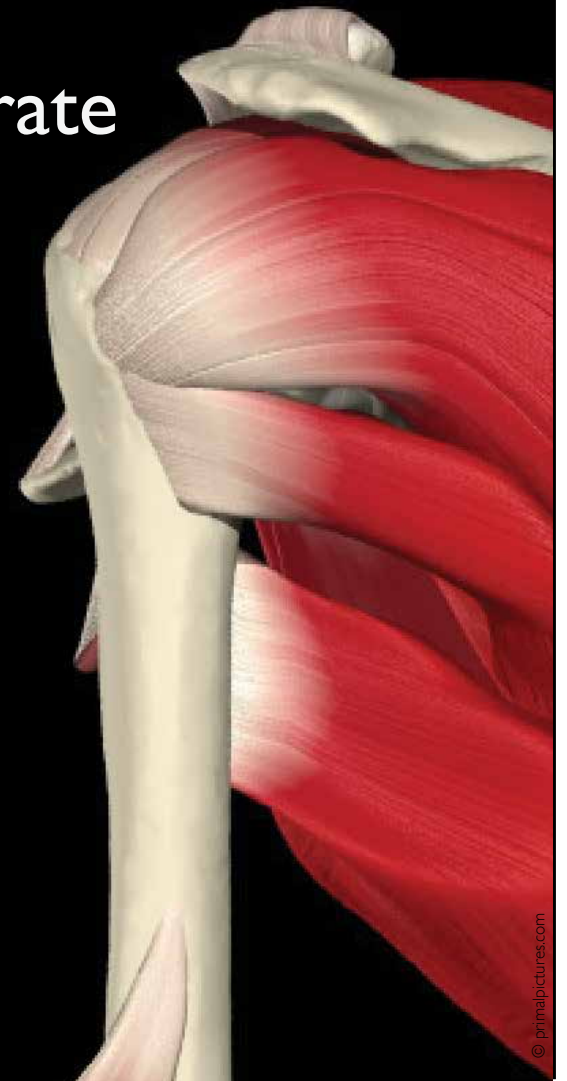


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Río Embudo, Northern New Mexico